



**2005 Seeds and Breeds
Conference
Bios & Abstracts**

Jack Algieri

Bio: Jack Algieri was born and raised in southern Rhode Island on a family farm. He attended the University of Rhode Island's College of Plant Science where he developed a great interest in sustainable systems and was driven in search of efficient methods.

Jack has worked as a greenhouse manager for a family-owned florist, greenhouse and nursery, as well as a naturally managed botany conservatory greenhouse. He has been a private gardener for several estates and a park ranger for the Costa Rican National Parks Service. He also managed perennial and annual herb crops for Meadowbrook Herb Gardens.

In California, Jack sharecropped land for an organic vegetable market and managed organic olive and olive oil production on eight sharecropped estates. He moved to Connecticut to develop an organic program at White Gate Farm, which produces food for 60 member families and various retail natural food stores and has become a center for the community.

Jack and his wife Shannon currently live in Pocantico Hills near Stone Barns Center where he maintains the half-acre in-soil greenhouse and four acres of garden. His goal is to produce optimal amounts of superior-quality produce for the restaurant, market, education center and community using efficient and naturally sustainable practices. He is dedicated to maintaining the landscape naturally with the help of the livestock manager and the many farm animals. Jack offers tours and classes at the farm throughout the year to help both youth and adults learn about the living landscape and our role in it.

Keith Aoki

Bio: Keith Aoki is the Philip H. Knight Professor at the University of Oregon School of law in Eugene, Oregon. He received his J.D. cum laude from Harvard law School in 1990. He teaches Copyrights, Trademarks, Cyberlaw and Property Law and has been writing over a decade in the area of Intellectual Property. Recently, he has been focusing on the role that International Agreements such as TRIPs, and the CBD and the ITPGR interact with intellectual property laws to (1) create concentration in the global food supply chain, and (2) fail to consider the production, conservation and circulation of traditional agricultural knowledge and genetic diversity. He is working on a book entitled: "Malthus, Mendel and Monsanto: The Law of Politics of Intellectual Property and the Global Food Production." His email is <kaoki@law.uoregon.edu>

Abstract: Intellectual Property Rights

In the software area, the open source licensing model (referred to as GNU/Linux) has provided a robust alternative to the strict enforcement of intellectual property rights by companies such as Microsoft. Advantages of the open source model include increased innovation, growth of peer production knowledge networks and a move from a "widget" economic model of producing things to a service-based model of providing a dynamic flow of "information". This talk will briefly outline the open source software model and examine what ways that it would and would not work for the production, conservation and circulation of agricultural and genomic knowledge produced by farmers, public and private plant breeders and geneticists. The primary focus will be on the parallels between the GNU/Linux General Public License being used by Universities and Gene Libraries following the effective date of the International Treaty on Plant Genetic Resources for Food and Agriculture. The unanswered question is: does the open source model work for plant genetic resources and agricultural knowledge?

Carrie Balkcom

Bio: Executive Director for American Grassfed

Carrie was raised on a working cattle ranch in South Florida. Her ties to the land go back many generations, with proud cattle and dairymen in her family. Her ties to the land led her back to Agriculture. As one of less than 100 certified executive women chefs in America, she began to notice the disconnect between food and society. No one seemed to know where their food came from. She was one of the founding members of AGA and then became it's director in 2004. AGA represents all species of grassfed production.

Dan Barber

Bio: Dan Barber began farming and cooking for family and friends at Blue Hill Farm in the Berkshires. It was there that he was first introduced to and gained respect for locally grown and seasonal produce. Since May 2000, Dan has seen Blue Hill grow from a noted neighborhood restaurant to most recently named as one of Americas Best Restaurants by Gourmet Magazine. In the summer of 2002, Food and Wine Magazine featured Dan as one of the country's Best New Chefs. He has since addressed local food system issues through op-eds in the New York Times and has been featured in the New Yorker, Gourmet Magazine, CBS Sunday Morning, House and Garden, Martha Stewart Living, and named as the next generation of great chefs for Bon Appetits 10th annual restaurant issue.

This Spring of 2004 signaled a new chapter for Dan. In May, both Blue Hill at Stone Barns and Stone Barns Center for Food and Agriculture opened its doors. As the restaurants chef/owner and the centers creative director, Dan focuses on the issues of pleasure, taste and regional bounty-and how these imperatives are threatened. Dan helped create the philosophical and practical framework for Stone Barns Center for Food and Agriculture and continues to help guide it in its mission to create a consciousness about the effects of everyday food choices.

To expand on his philosophy of cooking with sustainably grown, local ingredients, Dan has been working with such organizations as the Kellogg Foundation, New York City's Green markets, and Slow Food USA to minimize the political and intellectual rhetoric around agricultural policies and to instead maximize the appreciation of eating good food.

Don Bixby

Bio: Donald E. Bixby, DVM, Technical Program Director

As ALBC's Executive Director from August 1988 through July 2002, Don was responsible for providing the vision and overseeing the implementation of the conservation activities of ALBC. Don has been involved with the organization since the 1980s, organizing the first North American rare breeds show and sale and establishing the ALBC Rare Breeds Gene Bank, which has expanded over the years. He has been the liaison to the USDA National Animal Germplasm Program and a leader in founding Rare Breeds International. He has overseen the livestock and poultry research, and promoted rare breeds to the sustainable agriculture community. He was honored in 2000 by Slow Food International for the work of ALBC in conserving genetic diversity in farm animal species. In his position as the Technical Program Director, Don has been able to devote more time to technical outreach to potential stewards and agencies working to promote sustainable integration of livestock and poultry.

Abstract: Developing the Tools to Implement the Infrastructure to Deliver Improved Germplasm

Publicly funded livestock breeding has produced some useful production types. Some flourished, but then disappeared like the Minnesota #3 pig, the Multinipple sheep, and Beltsville Large White Turkeys. More recently public funding has been focused on the importations such as Tuli cattle from Africa and Romo Sinuano from Central America as well as Dorper sheep, Boer and Kiko goats from Australia/South Africa.

While there has been selection for increased production, new production systems have been largely ignored in the past few decades. Forage based, organic, antibiotic/hormone free markets are growing but genetic selection for these areas is sluggish. What is needed is a re-examination of genetics of Devon and Red Poll cattle, but other cattle breeds, as well as breeds in other species of livestock and poultry may indeed possess the qualities needed for sustainable systems. Many opportunities exist to develop livestock breeds and lines for production systems.

Harvey Blackburn

Bio: Since 1999, Harvey Blackburn has been the National Coordinator for USDA/ARS's National Animal Germplasm Program (NAGP) in Ft. Collins, Colorado. The primary mission of the program is to conserve and manage U.S. livestock genetic resources. Before initiating the NAGP he was Research Leader at USDA/ARS's U.S. Sheep Experiment Station in Dubois, Idaho. Prior to joining ARS he spent 6 years working as a Livestock Advisor at the World Bank and the U.S. Agency for International Development. He spent 12 years on staff at Texas A&M University in College Station, Texas. His published work on sheep and goats includes computer simulation of production systems, genetic comparisons, nutritional aspects and management. While at the World Bank he worked to initiate the joint donor program on Livestock and the Environment. In his current capacity his research efforts involve determining genetic diversity in livestock populations and the cryopreservation of mammalian gametes.

Abstract: Technical/Biological Aspects of Delivering Animal Germplasm

Utilizing diverse sources of animal germplasm requires three components: information technology, an assessment of the genetic attributes of the animal(s) to be used, and the ability to deliver the germplasm for utilization. Across species and breeds within species there is a wide variation in how well these three components are being addressed. Effectively improving these three components requires advancement in the various technologies that are utilized, as well as, greater utilization of such tools by individual breeders. The National Animal Germplasm Program has been addressing several aspects of the three components mentioned. In addition it has been developing a national repository for animal germplasm. These topics will be covered in the presentation as will possible future directions.

Edith Lammerts von Buren

Bio: Prof. Dr. Edith T. Lammerts van Bueren (1952). Has been working in organic agricultural research and education since 1978. Since 1986 researcher at the Louis Bolk Institute, a private and public funded research institute in Driebergen/The Netherlands for organic agriculture, nutrition and health care. Most of the research work is done together with organic farmers as participatory and on-farm research. She works as the leader of the Plant Breeding Department. The breeding research focuses on the development of protocols for organic variety trials with spring wheat, and farmers' participatory breeding projects with cabbage and onion. She combines this work with a part-time position as professor Organic Plant Breeding at the Wageningen University. She is also chair and co-founder of the European Consortium for Organic Plant Breeding (ECO-PB).

Abstract: Alternative Breeding Strategies in Europe

Most European governments aim at 10% organic crop and animal production in 2010, and at closing the organic production chain, no longer relying on conventionally produced inputs, such as seeds and manure, to enhance credibility. Since 2004, the Organic Seed Regulation (EC 1452/2003) has already set limitations to the use of conventionally propagated seeds for those (sub)species of which organic propagated seed of appropriate varieties are available. Attention has been given to the discussion which plant breeding techniques comply with the ecological and ethical values in the organic movement, which has been the basis for the IFOAM draft standards for organic plant breeding. Pioneering organic plant breeders, privately funded with low budgets, already started in the 1980s in the German speaking countries, and are now entering the market with several varieties. Also commercial breeding companies are gaining interest in this field, mostly in the cereal sector combining programs for low-input conventional cereal production with the requirements for organic farming systems. Some breeding companies convert part of their trial fields to organic for this purpose. Parallel, farmer initiatives maintain and improve local varieties (conservation/inheritance varieties).

James Coors

Bio: James G. Coors is a Professor in the Department of Agronomy, University of Wisconsin. His research activities include development of silage germplasm with improved forage yield and nutritional quality; development and evaluation of selection methods for complex traits such as grain and silage yield, silage quality prolificacy, and heterosis; and germplasm assessment and genetic improvement of corn stover as a primary feedstock for bio-based energy, chemical, and material industries. His teaching responsibilities include two graduate level courses in plant breeding: AG811- "Biometrical Procedures for Plant Breeders" and AG812 - "Selection Theory for Quantitative Traits in Plants", as well as seminar series and graduate student advising.

Abstract:

Panel III: Developing the Tools to Implement the Infrastructure to Deliver Improved Germplasm - Influencing/Impacting Existing Titles (NRI Formula Funding)

There is a growing appreciation for public plant breeding programs and support of a viable breeding infrastructure in the public sector. Unfortunately, this appreciation stems mostly from the despair over the degradation of the current support system. Nonetheless, there are several hopeful signs that funding agencies are altering their sights to include plant breeding, particularly for those crop species that have not received much research support via plant genome initiatives, yet play an important role in the health of a viable agricultural economy. The current funding situation and possible funding strategies for the future will be reviewed in the hopes that a coordinated strategy to support public sector breeding can be developed.

Stan Cox

Bio: has been a Senior Scientist at The Land Institute in Salina, Kansas since 2000. He was a Research Geneticist in USDA-ARS from 1983 to 1996. Currently, he and his colleagues are working on development of perennial grain crops for use in diverse cropping systems.

Abstract: Breeding Agronomic Crops

Plant breeders in universities, the US Department of Agriculture, and nongovernmental organizations scattered across the United States are developing field-crop cultivars targeted specifically for more environmentally and socially sound farming systems. Traits for which breeders are selecting are intended to address several needs of sustainable agriculture: reduced chemical inputs (e.g. maize tolerant of low soil nutrients, wheat and rye with stronger allelopathy); avoidance of transgenes (e.g., gametophytic incompatibility in maize), alternatives to transgenes and intellectual-property entanglements (e.g. soybean cultivars from a distinct, broader Asian gene pool, rootworm tolerance for non-*Bt* maize growers, open-pollinated and variety-hybrid maize), improved markets for organic farmers (e.g., high-methionine maize), and reduced soil erosion with full water and nutrient utilization (perennial grain and oilseed crops, including wheat, wheatgrass, sorghum, chickpea, rice, sunflower, maize, flax, and domesticated native species).

Katherine Delate

Bio: Dr. Delate has the first faculty position in Organic Agriculture in the United States. Her current position as Associate Professor at Iowa State University is a joint position between the departments of Horticulture and Agronomy, where she is responsible for research extension and teaching in organic agriculture. Kathleen has farmed organically in Florida, Hawaii, California and Iowa. She has a B.S. in Agronomy and an M.S. in Horticulture from the University of Florida, and a Ph. D. in Agricultural Ecology from the University of California-Berkeley.

Abstract: Expanding the Infrastructure for Organic Seed Development

The USDA National Organic Program requires that organic farmers source organic seed where commercially available. Organic seed supplies are woefully inadequate to meet the increasing demand for organic crops. The development, selection, multiplication and distribution of plant germplasm, suitable for organic farms, remains high on the organic research agenda articulated by the Scientific Congress on Organic Agriculture Research (SCOAR) of the Organic Farming Research Foundation. Efforts, including Public Plant Breeding Initiatives at Land-Grant Universities and through the private sector, are beginning long-term selection of suitable organic varieties but significant bottlenecks exist. This report will identify the major organic seed initiatives in the U.S. and how government agencies (USDA, state, and local) are working with these initiatives to expand options for organic farmers.

Mike Hamm

Bio: C.S. Mott Professor of Sustainable Agriculture, Depts. of Community, Agriculture, Recreation and Resource Studies; Crop and Soil Sciences; Food Science and Nutrition

Abstract: Food Systems/Consumer Perspective

What would it mean for consumers if the food system - from production inputs to table were designed to simultaneously preserve the environment for future generations while providing the opportunity for optimal health of individuals and communities now? The 20th century saw development of a food system that simultaneously produced more raw ingredients than ever, put more farmers out of work, and decreased the price of food. However, the costs for this have been enormous. There is an emerging demand among a growing number of consumers for food that has embedded characteristics beyond low cost; including organic, ecologically friendly, animal friendly, health promoting and socially responsible. Breeding has a critical role to play in optimizing the opportunities for farmers to produce food that meet these embedded characteristic demands of today's consumer response surveys, and community development opportunities to provide a sense of potential from the consumer perspective.

Craig Haney

Bio: Craig Haney's family has farmed for eight generations in the foothills of the northern Catskills. Motivated by a desire to connect our farming past with a sustainable future, Craig studied American social history at The University of Michigan. After graduation, he returned to central New York to farm and teach at The Farmers' Museum in Cooperstown. To promote the connections between farming, food and our culture, Craig founded (and still operates) Skate Creek Farm, a pasture-based, organic farm that raises poultry, veal, sheep and swine.

As a farmer and the shipping coordinator for Meadow Raised Meats, an association of family farmers who raise their animals on grass, Craig continues to connect people with their food through restaurant, on-farm and Internet sales, as well as farmers' markets.

Molly Jahn

Bio: is on the faculty in the Department of Plant Breeding & Genetics and the Department of Plant Biology at Cornell University in Ithaca, NY. She received a B.A. from Swarthmore College, and M.S. from the Massachusetts Institute of Technology, and a Ph. D. in Plant Breeding from Cornell University. Her research focuses on plant genetics and genomics, and on the development of improved vegetable germplasm including the release of varieties. She has responsibilities for the curcubit and pepper breeding programs. She has a number of varieties and hybrid parents in commercial use globally pollinated heirloom-type winter squash variety, Cornell's Bush Delicata. She is also Director of the Public Seed Initiative and the Organic Seed Partnership, funded by the USDA to extend the benefits of public investments in vegetable genomics and breeding to serve the organic agriculture community and other classes of U.S. agricultural producers hit hardest by the consolidation and globalization of the world seed trade.

Abstract: What's Working in Vegetable Breeding

The dramatic consolidation of the global vegetable seed industry over the past twenty years has reduced both the scope of breeding work and the number of varieties available to farmers and consumers. Against this backdrop, various alternatives to this system have developed that work to balance the losses that have occurred as a consequence of this process and to address new opportunities and practices. I will provide an overview of current activities in the area of vegetable breeding that are resulting in improved distribution of genetic diversity in the vegetable through seed companies and other networks. The talk will focus on innovative strategies to access and manage genetic diversity in vegetable species, breeding strategies emphasizing participatory and collaborative approaches and efficient trialing strategies that allow broad access to diverse environments and production systems. Where selectors, breeders or breeding groups wish to retain some rights to or control over seed quality or variety identity, simple strategies to manage transfer of germplasm during development and commercialization will be described. Finally, I will provide some illustrations of how individuals and groups have successfully selected, trialed and released germplasm and varieties that are now used in production under various management regimes.

Maury Johnson

Bio: Maury Johnson worked for over 20 years in the private seed business with NC+, Maury had the opportunity to transition NC+ Organics to Blue River Hybrids. Maury's goals with Blue River will be four-fold: (1) achieve consistent and economical organic seed production, (2) national sales and service to organic farmers, (3) looking for new products in the organic environment, and (4) working with organic buyers and public institutions to promote the cause of organic agriculture.

Abstract: Organic Seed - Production, Sales and the Future

NC+ Organics and now Blue River Hybrids, represent attempts by private sector companies to promote and market seed. Whereas NC+ Organics was a part of a larger company, Blue River Hybrids is an effort that relies totally on organic seed sales for its existence. It will also be a private sector effort to evaluate new products in the organic environment.

Kim Leval

Bio: Kim is Senior Policy Analyst in the Rural Policy Program with the Center for Rural Affairs. Her efforts focus on developing a national agriculture policy agenda that serves family farmers and ranchers, rural communities and the environment. Through grass roots organizing and policy option development during the 2002 Farm Bill Kim helped to secure passage of a \$200 million value added producer focused grant program. The program supports new direct marketing efforts to help family farmers and ranchers and rural communities. She has spoken and written extensively on agricultural research policy and the impacts research and technology have on family farmers and ranchers, rural communities, and the environment.

She co-chairs the Research and Extension committee of the Midwest Sustainable Agriculture Working Group and serves as the working group representative on the National Campaign for Sustainable Agriculture Board. Kim volunteers in Oregon on the board of the Lane County Food Coalition, a community based organization strengthening food security, building networks and expanding local marketing opportunities between farmers, consumers, restaurants, processors and grocers in Lane County, Oregon. She serves as Vice President on the Board of the Cascade Pacific Resource Conservation and Development District. Kim is also featured in the book *Women and Sustainable Agriculture: Interviews with 14 Agents of Change* (McFarland press). Kim holds a MS in Adult Education and Agricultural Extension from Cornell University and a BA in International Studies and Cultural Anthropology from the University of Oregon.

Abstract: Developing a Plan of Action

With the 2007 Farm Bill looming we have an opportunity to impact national policy and program development. Ms. Leval, along with the other panelists, in an interactive style will share experience and insights in shaping agriculture research policy. Discussion will focus on developing a plan of action. Discussions will reflect the conference synthesis and goals and may include avenues for developing new policy options and funding for reinvigorating public plant and animal breeding. Specific examples include how participants can shape and influence federal legislation, appropriations, the farm bill research title and changes in how current USDA programs are administered and implemented.

Allen Moody

Bio: Allen Moody has been involved in the organic production world since 1988. He has farmed organically in western Kansas and worked as a grain buyer for an organic grain processor called Heartland Mills. Since 1997 he has worked for CROPP Cooperative Organic Valley as the Cattle and Hog Procurement Specialist. Other life experiences include working as an oil well geologist and feedlot cowboy and serving for numerous alternative organizations supporting family farms. Today when Allen isn't working his grassfed cattle operation he enjoys writing songs and performing in a local populist protest band.

Abstract: Entrepreneurial Aspects of Animal Breeding and Use in the Market Place

Allen Moody will speak about CROPP Cooperative and how farmer member's production is marketed through value-added opportunities. The primary value-added opportunity is certified organic production however this is only the beginning because the market demands quality and consistency. Allen will discuss the challenges with coordinating livestock production from approximately 600 individual family farms in 21 states and Canada while maintaining a high level of quality and consistency. One way to manage consistency has been to focus on specific breeds and certain lines within each breed. CROPP Cooperative sale staff use this information to help promote the livestock products to our customers. Challenges for the future include managing breed stock for the future and improving livestock performance. As energy costs continue to increase the need for increased efficiencies in production will be a challenge while maintaining high quality end products.

John Navazio

Bio: John is the Director of Education and Research at the Organic Seed Alliance in Port Townsend, WA. He trains farmers in seed production and crop improvement techniques. John also breeds several vegetable crops for organic cropping challenges and regional markets. John is also currently teaching classes in Sustainable Agriculture and working with the student farm at The Evergreen State College in Olympia, Washington. He holds a doctoral degree in Plant Breeding and Plant Genetics from the University of Wisconsin.

Abstract: Improving Vegetable Seed Germplasm

As most vegetable seed crops are considered “minor crops”, with less of an economic impact than the commodities, there is less funding and therefore less time and effort spent in the genetic maintenance and improvement of vegetable varieties in both public and private sectors. Private sector consolidations in the seed industry have led to a loss of diversity in varietal choices and a decrease in the number of seed professionals and their knowledge base. Many vegetable producers are frustrated with the lack of field-trough varieties for low input systems. Regional seed distributors are also frustrated as they would like to have more diversity for the expanding regional fresh vegetable market. These regional seed brokers are interested in producing some of the seed for their markets and they are interested in varieties adapted to low input systems. This situation provides plant breeders and seed professionals with an opportunity.

There is a triple challenge in the vegetable seed sector of training people to improve our breeding and delivery systems. We need 1) a new generation of plant breeders - both formal and farmer, that will breed for sustainable systems, 2) farmers knowledgeable in vegetable seed production, and 3) seed company field personnel knowledgeable in genetic maintenance and organic production techniques of vegetable seeds. Through innovating public—private partnerships we can train farmers in sustainable seed production techniques and link professional plant breeders with seed companies and growers to cooperate in participatory plant breeding and genetic maintenance programs.

Ron Rosmann

Bio: Born 3/1/50. Bachelor of Science Degree in Biology, Iowa State University, 1973. Married to Maria Vakulskas Rosmann. Children: David (24-ISU graduate student in Rural Sociology); Daniel (21-ISU senior in Agronomy); and Mark (19-ISU sophomore in Agronomy and History). Operate a 600-acre diversified certified organic grain and livestock farm. Crops: corn, soybeans, flax, oats, barely, hay, and pasture. Livestock: 90-certified organic stock cows utilizing intensive grazing management practices; 40-sow farrow-to-finish hog operation. The grain farm has been certified organic since 1994; the beef has been certified since 1998. Hogs were certified since 1998. Hogs were certified in 2004. Rosmann is past president of the Organic Farming Research Foundation and Practical Farmers of Iowa.

Abstract: Farmer II Issues

Raising crops and livestock that will meet the criteria of environmental sustainability and efficient energy consumption will be one of the greatest challenges of Agriculture in the 21st century. Most crop and livestock genetics have been grown and selected under high-energy input agronomic systems. This would include fertilizers, crop protection chemicals, water and the energy to both produce and apply them to crops. For livestock, it has meant reliance on antibiotics, growth promotants, confinement of animals and the feeding of high-energy diets dependent on the high input model that produced it. This form of agriculture has replaced people, hands on farming systems management, and the entrepreneurial spirit of a land ethic that strives to leave the land in better “shape” for future generations. In the end, this farming system cannot sustain itself.

Michael Sligh

Bio: Michael Sligh is a Policy Director for Rural Advancement Foundation International (RAFI-USA), managing policy reforms, research and education addressing; agriculture practices, agro-biodiversity, organic integrity, agro-biotechnology and a range of value-added food labeling, and marketing issues. He has more than 30 years' experience in agricultural practices and policy analysis, including both domestic and international work. He travels, works and speaks in many parts of the world concerning agricultural issues. He is a family farmer and a trained anthropologist. He has spent the last five years working with a national coalition to promote seeds and breeds for the 21st Century, whose goals are to re-invigorate publicly- held plant and animal breeds for a more sustainable agriculture. He lives and works from North Carolina, USA

Dr. Phillip Sponenberg

Bio: Dr. Phillip Sponenberg received his DVM from Texas A&M University, and his PhD from Cornell University. He is Professor of Pathology and Genetics at the Virginia-Maryland Regional College of Veterinary Medicine. He teaches pathology, reproduction, genetic resource issues, and small ruminant medicine. His interest in coat color genetics includes horses, donkeys, sheep, goats, dogs, and other species, and has resulted in publications and peer-reviewed journals, book chapters, and books. He is active in rare breed conservation, and serves as the technical coordinator for the American Livestock Breeds Conservancy. He maintains a herd of Tennessee Myotonic Goats in a wide variety of colors and also owns a Choctaw stallion.

Abstract: Modern Breeding Programs for Animals

Modern breeding programs for animals have diverged considerably over the last fifty years. An increasing number of large corporate or land grant, breeding programs involve a heavily statistical method that selects animals for production by measuring performance. In the private sector this has also become more common, especially in main-stream breeds that are selected for commercial utility. In contrast to these are some programs that are generally in the private sector and involve more the “eye of the breeder” methods. Some of these are based on conformation and eye appeal, others are characterized by an “enlightened detachment” that notices and values disease resistance and environmental adaptation. Yet other programs are targeted to conservation and expansion of rare genetic resources with little current selection for either fancier or production traits. A few programs are targeted at discovering and then characterizing rare, adapted genetic resources.

Gene S. Takle

Bio: Gene is a native of southwestern Minnesota and has a BA degree in physics and math from Luther College. His PhD is from the Iowa State University Department of Physics in 1971. Since 1971 he has served a dual appointment on the faculty in the Department of Geological and Atmospheric Sciences and the Department of Agronomy. He is coordinator of the Regional Climate Modeling Laboratory at Iowa State and serves on numerous national and international boards and committees, including Atmospheric Science Editor of Earth Science Reviews and Chair of the Transferability Working Group of the Hydrometeorology Panel of the World Climate Research Programme. He has over 200 publications and research presentations on topics such as climate change, turbulent flow through agricultural shelterbelts, and roadway weather. His online course entitled Global Change was introduced in 1995 as Iowa State's first and longest running internet course. Hobbies include restoring old British sports cars and restoring a barn and prairie landscape on an acreage in Wisconsin.

Abstract: Climate Change and Possible Impacts on US Plant and Animal Agriculture

Climate change is one of many drivers of change in food production. Changes in costs of production and transportation are critical to food production. And consumer choices (i.e., amounts of meat, poultry, fish in the diet) and consumer attitudes (i.e., acceptance of foods linked to genetically modified organisms) will be dominant factors driving food production. But as we consider both climate change and sustainable use of food-production resources (i.e., soil, water, and nutrients) other questions come to mind: How will the climate of the US change what we can and should raise? How will the climate in other countries change their food production systems and possibly create opportunities for US agriculture? While we do not have answers to these questions now, we are establishing the framework for addressing these issues. This presentation will discuss current knowledge of regional climate change, some possible impacts on plant and animal agriculture.

William F. Tracy

Bio: William F. Tracy received his B.S. and M.S. in Plant Science at U Mass-Amherst and earned his Ph.D. in Plant Breeding at Cornell University. He was a corn breeder for the international Plant Research Institute in San Carlos, CA and Cargill Inc. at Grinnell, Iowa. In 1984 Bill was appointed assistant professor and sweet corn breeder in the Department of Agronomy, University of Wisconsin-Madison. He is currently Professor and Chairman of Agronomy. Current research includes the role of plant development in resistance to pests, novel endosperm mutants and their effects on seed and table quality, phylogenetics of sweet corn and the origin of the sugary 1 allele, and the development of improved sweet corn inbreds, hybrids, and populations. Bill leads one of the few remaining public sector sweet corn breeding programs in the US.

Donald L. Wyse

Bio: Dr. Donald Wyse is a professor in the Department of Agronomy and Plant Genetics at the University of Minnesota, Co-Director of the Center for Integrated Natural Resource and Agricultural Management, founding Executive Director of the Minnesota Regional Agricultural and Natural Resources Sustainable Development Partnership Program. He currently leads a multi-college integrated research approach to landscape, human, and animal health issues. The University faculty members that have organized themselves around this program believe that agriculture can contribute greatly to our commonwealth by providing for the health of landscapes and their inhabitants. Dr. Wyse is the leader of a research program that focuses on the development of diversified agriculture systems that are productive and also produce ecosystem services. His project has provided leadership on perennial crop breeding and selection, management of invasive species, biological weed management, native plant seed production, plant biochemistry, and perennial cropping systems.

Abstract: Farming System Induced Ecosystem Services: Renewable Energy, and Human Health Connections

Agriculture is the dominant form of human land use and the most powerful force determining the environmental quality of the world's major ecosystems. Of equal importance, agriculture is fundamental to the quality, safety and health-giving properties of our food system. For these reasons, the nature of agriculture is critically important to the well being of society. Ultimately, our food system is shaped by the interplay of culture--embodied by the attitudes and actions of individuals and institutions--and the encompassing environment. Public health and equity, environmental quality, food safety, animal well-being and agriculture are woven together in a tight and intricate fabric. There is increasing recognition that this fabric is in need of much mending. Sound and lasting repairs can lead to an agriculture that produces safe and wholesome food, enhances environmental quality through production of ecosystem services, and improves human and animal health. Only by addressing the cultural, environmental and economic foundations of the agriculture system can we make the necessary profound changes that are required to foster sustainable and diverse biological and human communities.

Steve Zwinger

Bio: My name is Steve Zwinger; I grew up on the family farm in Central ND. I attended NDSU to receive a B.S. in Agronomy. Since 1982 I have lived in Carrington ND and worked at the NDSU: Carrington Research Extension Center assisting and conducting research relative to crops and cropping systems in Central ND. My main focus of research has been assisting NDSU plant breeders and other public and private breeders in varietal evaluation and development. I have worked on alternative crop development, and have a recent emphasis on annual forages for both grazing and haying. I have been involved with the Northern Plains Sustainable Agriculture Society's Farmer Breeder Club over the past six years and have conducted variety research during the past five years in a certified organic environment with the expectations of future research tying NDSU and NPSAS in collaborative efforts to better serve the organic community.