The Meristem

DEPARTMENT OF BOTANY & PLANT PATHOLOGY 2000 Annual Newsletter

Purdue University

Welcome!

Welcome to another year in the life of the Department of Botany and Plant Pathology. We are pleased to provide you with a summary of some of the highlights of 2000. It was once again a very busy and productive year for us. Many of you may know that Purdue University has a new president, Dr. Martin Jischke. With a new president, one can expect changes. Dr. Jischke has an aggressive agenda for the university and is currently developing a bold strategic plan. In an effort to be on the leading edge of this agenda, the department also is developing a new strategic plan and we hope to have it in place later in 2001.

This past year we have been busy recruiting three new faculty members and are pleased to announce that Dr. Kevin Gibson, Dr. Steve Hallett, and Dr. Andreas Westphal are joining our faculty as assistant professors in 2001. Kevin is a weed ecologist, Steve is a weed biocontrol specialist, and Andreas is a plant pathologist. Kevin received his Ph.D. in plant/weed ecology in 1998 from the University of California, Davis, and Steve received his Ph.D. degree in weed science from Lancaster University in the United Kingdom in 1991. Steve has worked on the biological control of weeds with fungal pathogens at both McGill University in Canada and the University of Queensland in Australia. Andreas is from Germany and received his Ph.D. in plant pathology from the University of California, Riverside. Prior to joining our faculty, Andreas spent two years with the Texas Agricultural Extension Service in Weslaco, Texas. The addition of Kevin and Steve put the weed science component of our department back to full strength and among the best in the nation. Our goal now is to continue building strength in plant pathology and plant biology.

This past year we undertook a critical review of our undergraduate programs in the department and made some significant changes. Perhaps most significant was the development of a new undergraduate option called "Environmental Plant Studies," approved for fall 2001. This option bridges the disciplines of basic plant science, ecology, and environmental studies and policy. While it is still firmly rooted in the botanical sciences, students are exposed to the broader issues of agriculture and the environment and policy making. Additionally, students are strongly encouraged to take advantage of the many international opportunities and issues and declare a minor in International Agriculture. Perhaps no single issue is more tied to globalization than agriculture and the environment, and we believe this new undergraduate option will help prepare students to meet the many challenges that lay ahead. For more information about this option, please contact our office, and we will be happy to provide you with more details.

We also changed the name of our "Plant Science" undergraduate option to "Plant Biology." While this may not seem like much of a change, we believe the new name better reflects the current academic environment and parallels better with programs at the graduate level. Plant biology is leading the way in genomics and we wish to capture the interest of more students in this exciting area. This name change also goes into effect in the fall of 2001. While we made no changes to our third undergraduate option in the department, "Crop Protection," it remains a viable option for students interested in the many aspects of agriculture and crop production. Information about any of our undergraduate or graduate programs can be obtained from our department Web site http://www.btny.purdue.edu or by contacting us directly by phone or mail.

In December 2000, our department underwent an external CSREES review. A panel of six professional colleagues from around the country spent almost a week with us critically reviewing all aspects of our department: undergraduate and graduate teaching, research, and extension programs. A more detailed summary of this review can be found on the inside, but I am pleased to say that we received an overall very favorable report. Graduate student enrollment is up, external grants are up, undergraduate teaching is up, and we anticipate that our undergraduate enrollment will increase with the implementation of the changes in our undergraduate programs. We are very appreciative of the review team's time and effort on our behalf and we have already begun the process of addressing key issues raised in the report.

We finished up some additional renovations to a few more laboratories this year, as well as, completed a new laboratory designed specifically for the coordinator of our laboratory classes. The bulk of our remaining research and teaching space is scheduled for renovation within the next 5 years.

We continue with the faculty profiles in this issue that we began last year. This year we feature two faculty: Dr. Carole Lembi and Dr. Robert Pruitt. Carole is an aquatic plant specialist working in the area of aquatic plant pest management and Bob is a molecular plant biologist investigating basic aspects of plant growth and development and how that may ultimately help us mange weeds more effectively. I hope you enjoy learning more about two of our outstanding faculty.

Our faculty, students, and alumni continue to excel and be honored in many ways. Dr. Jody Banks has spent the last year on a sabbatical leave with a NSF Fellowship at the National Institute for Basic Biology in Okazkai, Japan. Four of our current faculty, Drs. Steve Goodwin, Don Huber, Keith Perry, and Greg Shaner, were honored this year as members of the "Small Grain Research Team" which received the Dean's Team Award for 2000. Dr. Larry Vanderhoef, Chancellor of the University of California, Davis and a 1969 Ph.D. graduate of our department was awarded an honorary doctorate degree (Doctor of Agriculture honoris causa) by Purdue at its May 2000 commencement, and three of our weed science alumni (Dr. Ed Beste, M.S. 1969, Ph.D. 1971; Dr. Robert Williams, Ph.D. 1973; and Dr. Ann Légère, Ph.D. 1986) were inducted into the Weed Science Society of America as "fellows" at the 2001 annual meeting in North Carolina I invite you to read more about these distinguished individuals on the inside.

I believe the Department of Botany and Plant Pathology is uniquely positioned to continue its leadership role in research, teaching, and extension. I hope you will help us in this effort. Please take a moment to update us about yourself on the enclosed information card. We value your comments and support.

As always,

Ray D. Martyn
Department Head

Purdue University

The Meristem

Department of Botany and Plant Pathology

2000 Annual Newsletter

Faculty/Staff

Programs

Academics

Miscellaneous

Department Information

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On the Back Cover

A new Web look.
The Department of Botany and Plant Pathology introduces a newly redesigned Web page.
Let us know what you think of it!

***The Meristem Editor*,** Ms. Pam Mow, Administrative Assistant, 765-494-4615, <mow@btny.purdue.edu>

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Dr. Carole Lembi, Professor of Botany

Carole Lembi is a professor of botany and weed science with research and teaching responsibilities. She received a B.A. in Biology from the University of California at Davis and a Ph.D. in Botany from the University of Tennessee. Her area of interest was in algal ultrastructure. She expanded on that expertise when she served two years as a postdoctoral assistant in Jim Morre's lab at Purdue, in which she helped develop procedures for the isolation of the plant plasma membrane. She joined the Department in 1971 as an assistant professor and aquatic weed specialist This turn of events took her from a laboratory-based research program to one in which she had to travel the state and initiate field work in order to learn about aquatic weed problems.

Dr. Lembi has been actively involved in the teaching program in the department. She has taught several different courses including Advanced Weed Science, Principles of Plant Classification and others, but her mainstay courses are Aquatic Botany and a 5-week course in Aquatic Plant Management. She also taught the first class in BTNY 210 (Introduction to Plant Science) in the fall of 1989. That first class consisted of only six students. Today, over 300 students take the course both semesters, and Dr. Lembi continues to teach BTNY 210 each spring semester. She also co-authored the textbook "Advanced Weed Science" with Merrill Ross. She was named Outstanding Teacher in the School of Agriculture in 1997 and is included in Purdue's Book of Great Teachers.

Dr. Lembi has been actively involved with national and regional societies. She is the founding "mother" of the Midwest Aquatic Plant Management Society, and was named a life member to the Phycological Society of America for her contributions to the society, including an 8-year tenure as editor of the Journal of Phycology. She also is a fellow of the American Association for the Advancement of Science.

Her research efforts have taken her in two directions. The first is a more basic study of the life history and ecology of filamentous mat-forming freshwater algae (Fig. 1). This little known group of algae is the major target for aquatic plant management methods, and yet little was known of their temporal distributions or requirements for growth. She has collected and maintains cultures of the dominant mat-formers in the Midwest, including two of the most important, *Pithophora* (horsehair algae) and *Spirogyra* (silk algae). With the assistance of colleagues at the University of Wisconsin, post docs, graduate students, and lab technicians, light, temperature, and nutrient requirements for the growth of these algae have been determined, and a computer-based growth model has been developed. Discovering the temporal distribution of various life stages and forms of these algae has been helpful in developing management approaches

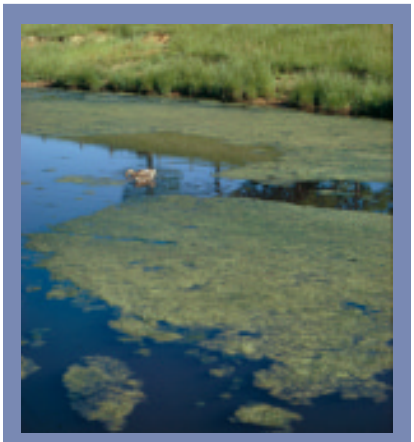

Fig. 1. Mat-forming filamentous green algae in an Indiana pond.

and understanding the strategies by which these organisms have adapted to static water environments. In the last few years, a new problem-causing mat-former has appeared in Indiana and is now the focus of research for Katie Wilkinson, a new graduate student. *Oscillatoria*, is a cyanobacterium that causes black, slimy mats on the water surface (Fig. 2). Katie's research has shown that actually two species appear to be the major problem-causing organisms, and she is now embarking on a cooperative effort with Dr. H. Lynn Walker of Louisiana Tech University to study a bacterium that appears to lyse *Oscillatoria* cells and has the potential to be an effective biological control.

The other aspect of Dr. Lembi's research is more applied, with the intent of developing alternative management strategies to traditional herbicides and algicides. A primary objective of this

study is the elucidation of tolerance patterns among mat-forming algae. For example, *Pithophora* was found to be considerably more tolerant to copper sulfate than *Spirogyra*, and it appears that *Oscillatoria* is the most tolerant of all the species so far studied. Continued use of herbicides and algicides (such as copper sulfate) that were once effective for algae control appear to be selecting for tolerant species. Over the years she and her students have studied control strategies as varied as the grass carp, plant growth regulators, and dyes. A current interest is the potential use of plant straws for the control of algae. Decomposing barley straw, for example, exudes toxins into the water that inhibit algal growth. Although this approach appears to work well in England and is used there routinely, similar studies in the U.S. have not been effective. Both alfalfa (Fig. 3, shown on page 11) and barley can control algae in laboratory tests, but field results have not been consistent.

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Fig. 2. Mats of the cyanobacterium *Oscillatori.*

Dr. Robert Pruitt, Associate Professor of Plant Molecular Biology

Robert Pruitt is an associate professor of plant molecular genetics with research and teaching interests in the areas of plant biology and weed science. Dr. Pruitt received a B.S. from the University of Minnesota in biochemistry, a Ph.D. from the California Institute of Technology in molecular biology, and was a postdoctoral fellow at the Plant Breeding Institute in Cambridge, England. Dr. Pruitt was a member of the faculties of the University of Minnesota and Harvard University before he joined the Department of Botany and Plant Pathology in 2000. His research program has been continuously supported through grants from the National Science Foundation.

Dr. Pruitt's research has been driven by a strong desire to combine the power of genetics with molecular biology to study questions in the plant sciences. A short stretch of time spent working on *Drosophila* (fruit flies) while in graduate school convinced him of the need for a model plant that could provide tools of similar power to those available in fruit flies. This led to his work characterizing the genome of *Arabidopsis thaliana*, a small member of the mustard family that has subsequently become a ubiquitous model throughout plant biology. With the completion of the sequencing of the genome of *Arabidopsis* in December 2000, this model organism now provides a level of utility previously unknown in the plant kingdom.

For the last ten years, Dr. Pruitt's work has focused on the genetics of how plant epidermal cells (those found on the surface of the plant) are able to communicate with other cells outside the plant that they come in contact with. This work has concentrated on two different questions. The first deals with how the male and female reproductive systems talk to one another when a pollen grain lands on the stigma of a receptive plant. The second question involves the kinds of communication that are possible when two separate layers of epidermal cells come into contact. To investigate each of these questions Dr. Pruitt's lab has conducted a genetic analysis, searching for mutations that alter the different types of communication of epidermal cells..

To analyze the interaction between a pollen grain and stigmatic cell, mutants were identified that produced normal amounts of pollen but where the pollen failed to germinate when placed on the stigma. Further investigation revealed that these mutant pollen grains failed to communicate properly with the stigmatic cells and molecular genetic analysis showed the defect in these pollen grains to be the absence of specific lipid molecules normally found on the outside of the pollen grains.

Epidermal cell interactions were analyzed by identifying mutants in which all of the plant's epidermal cells were capable of interacting in a way that is normally limited to a small, specialized group of epidermal cells found in the female reproductive system. This type of interaction normally leads to the fusion of cells within the ovary that come in contact with one another (post-genital organ fusion). In the mutants, it leads to widespread fusion of plant organs that develop in close proximity to one another. Genetic analysis identified 10 genes that appear to regulate this process. Mutations in nine of those genes result in increases in the permeability of the cuticle (a waxy layer found on the outside of the epidermal cell) to small water-soluble molecules. Cloning of one of those genes indicated that it probably plays a role in the biosynthesis of lipid molecules found in the cuticle, again indicating a possible direct link between lipids and the ability of epidermal cells to exchange signals with one another.

In both cases described above, it appears that the ability of epidermal cells to interact is dependent upon the presence of specific classes of lipid molecules. These lipids appear to regulate cellular communication by controlling the permeability of the cuticle, allowing some classes of molecules to pass through the cuticle while other classes cannot (see Fig. 1 below).

Moving to Purdue has given Dr. Pruitt the opportunity to explore new research areas, particularly those related to weed science. Initially this will involve exploiting the work described above to study how the plant cuticle acts as a barrier to water soluble molecules (some herbicides, for example) and trying to design strategies for improving penetration of these compounds into plants. Eventually, Dr. Pruitt would also like to use molecular genetics techniques to address more fundamental questions in weed science such as the genetic differences between perennial

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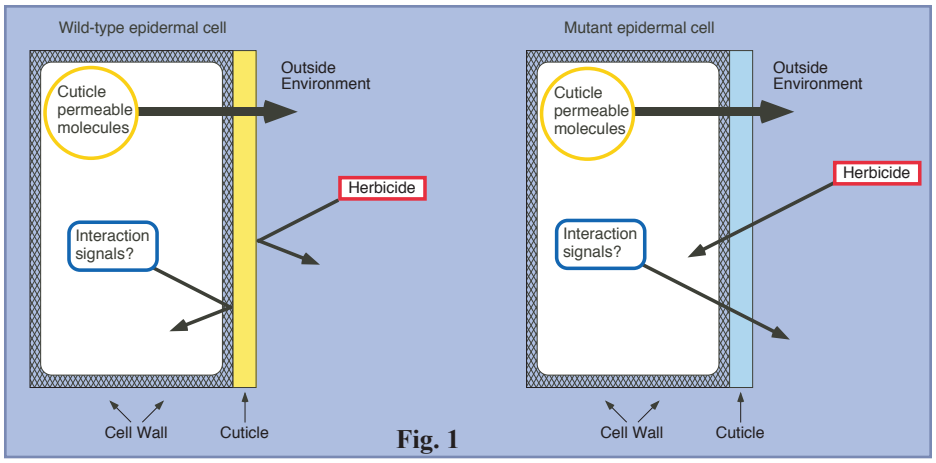


Fig. 1

Larry Vanderhoef, Doctor of Agriculture *honoris causa*

Saturday, May 13, 2000, Dr. Larry Vanderhoef was awarded the Honorary Doctorate degree from Purdue University for his outstanding contributions to science and higher education administration.

Dr. Vanderhoef earned his Ph.D. from Purdue University in 1969 from the Department of Botany and Plant Pathology in plant physiology under the direction of Dr. Joe Key. During his graduate and post-graduate career he received a David Ross Fellowship from Purdue University, and later earned fellowships from the National Research Council and the Carnegie Foundation.

After graduation from Purdue and a one-year post-doctoral position at the University of Wisconsin, Dr. Vanderhoef was appointed assistant professor of plant biology at the University of Illinois. Moving rapidly through the ranks, he advanced to professor and head of his department in only seven years. He joined the faculty of the University of Maryland at College Park in 1980, assuming the position of Provost of Agricultural and Life Sciences. Four years later he accepted the post of Executive Vice Chancellor and member of the Governing Board at the University of California Medical Center campus in Sacramento. Dr. Vanderhoef was a visiting lecturer at the National Taiwan University in 1984 and was awarded the Eisenhower Fellowship as a visiting scholar to the Republic of China in 1987. In 1994, he received the Distinguished Agriculture Alumnus Award from Purdue University.

Dr. Vanderhoef is the current Chancellor of the University of California at Davis. UC Davis is primarily noted for its strong programs and traditions in agriculture, veterinary medicine, and the biological sciences. While serving as chancellor, he has had overall responsibility for administration of programs serving 23,000 students and over 20,000 staff members with a budget exceeding $1.1 billion.

Ray and Carol Martyn served as hosts for Rosalie and Larry Vanderhoef (L to R) as they returned to campus for the 2000 Honorary Doctorate festivities.

Dr. Vanderhoef is an accomplished teacher and researcher. During his faculty years he taught courses at many different levels at both the University of Illinois and the University of Maryland. As a researcher, his publications include research on plant hormones, nitrogen fixation, and the effects of fungal toxins on plant growth. He received grants in support of his research from the National Science Foundation, NATO, the Carnegie Institute of Washington, and the Public Heath Service.

Dr. Vanderhoef has served innumerous professional organizations as an elected officer and committee chair, including, the American Association for the Advancement of Science, the American Society of Plant Physiologists, and the National Association of State Universities and Land Grant Colleges.

He is a valued consultant on academic and research issues. He has chaired program reviews and has been called upon to serve on major national review and advisory committees for such organizations as the National Science Foundation and the Department of Energy. He was also responsible for obtaining over $15 million in grant support for UC Davis from the Department of Energy, National Institute for Global Environmental Change.

Dr. Vanderhoef has accepted the challenge of leading a major agricultural university into the 21st century. He combines a distinguished record in teaching and research with an excellent understanding of the importance of the public service component of the university's mission. Under Dr. Vanderhoef's leadership, UC Davis has undertaken a highly consultative and successful ongoing process to restructure the campus's academic, administrative and student support programs. He clearly has established recruitment of outstanding faculty and students as a very high priority. He fosters outreach programs from the university in a variety of ways; as a member of the Kellogg Commission to bring reform to state and land grant universities; as a member of the UC Commission of the Future of Medical Education; and as a leader of a new program forming a partnership with local schools to better prepare educationally disadvantaged students for university enrollment.

Department Head, Dr. Ray Martyn presents Honorary Doctorate, Dr. Larry Vanderhoef, with the University Distinction Lapel Pin at a special dinner hosted by President and Mrs. Beering.

Alumni and friends of UC Davis showed their support for Dr. Vanderhoef's leadership and the university financially last year, setting a new record for private fund raising at nearly $60 million. The campus's endowment grew by $9.3 million in new gifts.

Dr. Vanderhoef has clearly distinguished himself as an alumnus of Purdue University and the Department of Botany and Plant Pathology. For his vision and dedication as a scientist and university administrator, we are pleased to honor him with this distinction.

Dr. and Mrs. Vanderhoef have two grown children, a daughter, Susan, and a son, Jonathan.

Weed Science Alumni Elected Fellows of Weed Science Society of America

Three weed science alumni were honored as Fellows of the Weed Science Society of America (WSSA) at its 2001 annual meeting in Greensboro, NC. The Fellow award is the highest honor bestowed upon a member by the society and recognizes the distinguished career and accomplishments of the awardee. We are extremely proud that of the six individuals inducted as Fellows this year, three of them were graduates of the Department of Botany and Plant Pathology.

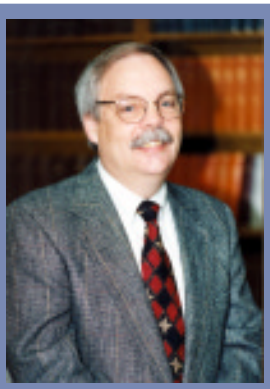
C. Edward Beste was reared on a farm near Mt. Vernon, Indiana. He obtained his B.S. from Purdue University after which he worked in industry for five years. Dr. Beste obtained his M.S. (1969) and Ph.D. (1971), both in weed science from the Department of Botany and Plant Pathology at Purdue University and then joined the Department of Horticulture at the University of Maryland. He currently is located at the Salisbury Facility, Lower Eastern Shore Research and Education Center and directs research and extension activities in vegetables, small fruits, and ornamentals. Other areas of research and extension include IPM activities, plastic mulch and cover crop mulches, and IR-4 projects. His extension program involves presentations to more that 600 Maryland and regional growers annually. Dr. Beste has been the author or coauthor of 150 articles on weed science and is the co-author of a chapter in the WSSA Monograph, *Weed Control with Limited Tillage*. He has served the NWSS as Editor and President and was Chairman of the *Herbicide Handbook* Committee for WSSA.

Anne Légère's early training at Laval University, Quebec, was in biology with emphasis on arctic/alpine plant ecology. She was then employed as a weed biologist with Agriculture Canada in Sainte-Foy, Quebec, with responsibilities for research on the biology, critical period of competition and thresholds of weeds in cereal/forage cropping systems of eastern Quebec. In 1986, Dr. Légère obtained her Ph.D. in weed science from the Department of Botany and Plant Pathology at Purdue University. She returned to Quebec to begin a research program related to sustainable cropping systems. Recent research activities have focused on the dynamics of weed communities in cereals and small grain under sustainable management practices. Dr. Légère was seconded to McGill University from 1993 to 1995; she is currently on leave at the Agriculture and Agri-Food Canada Research Centre in Saskatoon. She is actively involved in many regional, national, and international scientific organizations. From 1993 to 1995, Dr. Légère was Editor-In-Chief of the *Journal of Phytoprotection*, published by the Quebec Society for the Protection of Plants. In 1995, she was appointed Editor-in-Chief of WSSA Publications. Dr. Légère is a member of the Council of Biology Editors, the European Association of Science Editors, and the Crop Protection Programme Advisory Board of CAB International. Dr. Légère is currently Director of Publications for WSSA.

Robert Williams was born in San Diego, California and spent most of his childhood living on the East or West Coasts. He obtained his B.S. in biology and education from Midwestern State University, his M.S. from Western Kentucky University, and his Ph.D. in plant physiology from the Department of Botany and Plant Pathology at Purdue University in 1972. Dr. Williams was staff ecologist for an environmental consulting group in Austin, Texas and later as a Research Plant Physiologist at the Southern Weed Science Laboratory in Stoneville, Mississippi. In 1978 he transferred to the USDA-ARS Water Quality Laboratory in Durant, Oklahoma, which was later moved to El Reno, Oklahoma. In 1998, Dr. Williams was assigned the task of establishing a USDA-ARS research program at Langston University near Oklahoma City. Dr. Williams has published over 125 manuscripts and abstracts. He is active in SWSS and WSSA, serving on numerous committees, and as Associate Editor of *Weed Science*. Dr. Williams is a Regional Editor of the *Allelopathy Journal*. In 1996, he was selected as the Outstanding Reviewer for the Soil Physics Section of the *Soil Science Society of America Journal*, and in 1994 was selected as the Outstanding Alumnus by the Division of Sciences faculty of Midwestern State University.

Dr. C. Edward Beste

Dr. Anne Légère



Dr. Robert Williams

Awards and Promotions

Dean's Team Award for Research and Extension

The Small Grains Research Team is a multi-departmental, multidisciplinary team composed of faculty from three departments and USDA/ARS and has served the agriculture of the state and nation in an outstanding fashion for many years. It is truly a team whose combined product is clearly more that the sum of the individuals' work. They are very interdependent for their success. Their successes were acknowledged in 2000 by being named the winner of the Dean's Team Award for Research and Extension. Team members from the Department of Botany and Plant Pathology are; **Drs. Steve Goodwin, Don Huber, Keith Perry,** and **Greg Shaner**. Department of Agronomy members are Drs. Joe Anderson and Herb Ohm, Department of Entomology members are Drs. Roger Ratcliffe, Jeffrey Stuart, and Christie Williams. This team has been recognized among the leading research programs in the world in DNA marker development for genes of interest in wheat improvement, especially host resistance to disease and insect pests. The group's wheat research also expanded the potential for double cropping in the state. Production of soybeans after wheat harvest has been one of the most profitable cropping systems in Indiana. The award carried a prize of $10,000 to help further their research. Team members received the award from Dean of Agriculture, Dr. Victor Lechtenberg during a ceremony Friday, May 5, 2000. This team's accomplishments are an excellent example of the effect of interdepartmental and interdisciplinary effort when the contributors are unselfish in their efforts and generous in sharing the credit.

Dr. Keith Perry, Associate Professor, was recognized as the Department of Botany and Plant Pathology's Outstanding Teacher in 2000. Dr. Perry teaches the undergraduate class "The Microbial World: Food, Agriculture, and History, BTNY 207" and co-teaches the advanced plant virology course, "Plant Viruses and Transgenic Plant Resistance, BTNY 590V."

Dr. Jody Banks, Associate Professor, received the Center for Global Partnership International Research Fellow Award from the National Science Foundation.

Dr. Merrill Ross was presented with the 2000 Distinguished Service Award from the South East Purdue Agricultural Center in recognition of his years of research at the SEPAC in Butlerville, IN (1985-2000).

Dr. Dan Egel, Coordinator of Agricultural Programs at the Southwest Purdue Agricultural Center, was promoted to professional rank 5. Dr. Egel received his Ph.D. in 1991 from the University of Florida, Gainesville and joined the Department of Botany and Plant Pathology in 1995.

Ms. Pam Mow, Administrative Assistant, was promoted to professional rank 4. Ms. Mow is assistant to the department head, Dr. Ray Martyn, and serves as supervisor to the main office staff.

The annual Clerical and Service Staff Recognition Luncheon was held on Thursday, December 6, 2000, at the Purdue Memorial Union. Staff members celebrating 10, 15, 20, 25, 30, 35, and 40 years were honored. The Department of Botany and Plant Pathology had one honoree: **Debra Lubelski**, service technician for Dr. Carole Lembi (10 years).

CSREES On-Site Program Review

Every 5 years or so, most land grant universities, in cooperation with the USDA, Cooperative State Research, Education, and Extension Service (CSREES), authorize an on-site program review of their departments. This review consists of a detailed evaluation of the undergraduate and graduate instruction, research, and Extension programs of the department, as well as, its physical facilities and personnel. A review team selected by the host department, Dean of Agriculture, and CSREES Program Director spend almost a week on campus meeting with students, faculty, staff, and university administrators in an effort to critically assess the department's strengths and weaknesses and offer suggestions for helping it achieve its goals. The Review Team report prepared at the end of the review is a valuable document that can help guide the department in developing its future plans and prioritizing its objectives. The Department of Botany and Plant Pathology underwent such a review December 3-7, 2000. The department wishes to extend its appreciation to the entire Review Team for their hard work on our behalf. The team consisted of Dr. Robin Huettel, USDA, CSREES (Team leader), Dr. Thomas Zitter (plant pathologist), Cornell University; Dr. O. W. Barnett (plant pathologist), North Carolina State University; Dr. Charles Mims (plant pathologist), University of Georgia; Dr. Dave Mortensen (weed scientist), University of Nebraska; and Dr. Sarah Hake (plant molecular biologist), USDA, ARS, University of California, Berkeley.

We are pleased to say that our department received what we consider to be a very favorable report. The Review Team identified a number of areas in which we have improved over the last 5 years. To mention just a few, our graduate student enrollment is up significantly (see Table 1); extramural grant support has more than doubled (see Table 2 on next page); undergraduate student contact hours are up; a new undergraduate option in environmental plant studies has been approved for 2001; five outstanding

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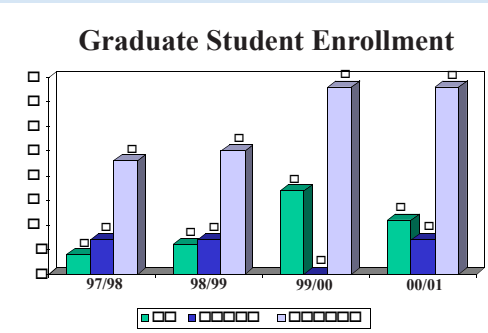
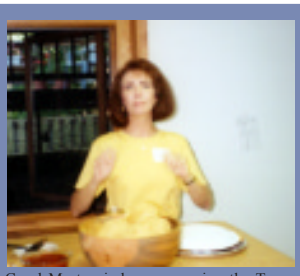
Table 1.



2nd Annual "Down-Home Texas Barbecue"

James Ng concentrates on the "bullseye" during the "Killer Dart Tournament" as Fidel Mendez waits his turn.



Carol Martyn is busy preparing the Texas Barbecue for the hungry crowd!

Joerg Boellman shows his perfect dart throwing technique to the others.

The 2nd Annual "Down-Home Texas Barbecue" brought the Department of Botany and Plant Pathology graduate students and post-docs from all over the world together for an afternoon of tasty Texas treats and lively games of air hockey and the famous "Killer Dart Championship" on a warm Sunday afternoon in September.

Ray and Carol Martyn host this annual event and treat everyone to great Texas cooking. This is also a great time to introduce the new students and post-docs to the department and possibly to their first game of air hockey or darts.

Graduate students David Hillger and Wes Everman were crowned as the "2000 Killer Dart Champions" and challenge all teams to a rematch at the 3rd Annual "Down-Home Texas Barbecue" in the fall of 2001.

The 2000 Killer Dart Champions
David Hillger and Wes Everman

Wes Everman and David Hillger play a game of air hockey before they complete in the "Killer Dart Tournament". Graduate Student Joerg Boellman waits to take on the winner.

This group of graduate students are discussing their strategies for the "Killer Dart Tournament" with last year's winner LeeAnn Glomski (L to R: LeeAnn Glomski, Katie Wilkinson, Kelly Goedde, Carrie Lapaire and Josh Souweine).

Alex Cochran trying to invent a new game after getting beat in the dart tournament.

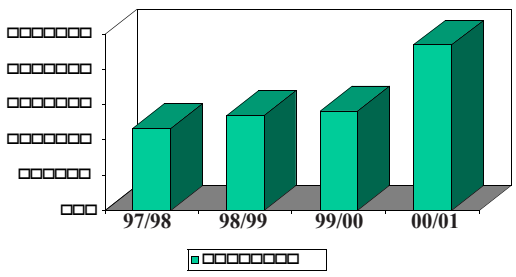
CSREES Review continued from page 8

new faculty have joined our department; our weed science and plant pathology Extension programs were noted among the best in the country; over $2 million in laboratory and greenhouse renovations have been completed; and we have an exceptional group of faculty, staff, and students. While we are extremely pleased with the overall report, there are things we can still do to improve.

As a result, the department will hold a working retreat this spring to develop a new strategic plan and undertake a critical review of our graduate curricula and course offerings. The Department of Botany and Plant Pathology continues to be a leader in teaching, research, and Extension and we are working hard to ensure that continues.

Table 2.

Yearly Extramural Research Dollars



Clare B. Kenaga
1927 – 2000

Dr. Clare B. Kenaga, Professor Emeritus of Plant Pathology, died on September 25, 2000, after a lengthy illness. A native of Michigan, Dr. Kenaga graduated from Western Michigan University (B.S.), and received graduate degrees from the University of Michigan (M.S. - Botany), and Michigan State University (Ph.D. - Plant Pathology). He joined the research staff of the Agricultural Chemicals Division, Morton International, in 1957, where he worked for 10 years.

Dr. Kenaga came to Purdue University and the Department of Botany and Plant Pathology first as a visiting professor in 1966. The following year he accepted an appointment as Associate Professor of Plant Pathology and began a long and productive career, primarily in teaching and student counseling.

Dr. Kenaga assumed responsibility for the class BTNY 301, "Introduction to Plant Pathology," which was taught both semesters and enrolled more than 120 students each year. He adapted the labs to the audio-tutorial system, and in 1970 published a new text entitled *Principles of Phytopathology*. The following year, he, along with Dr.'s E.B. Williams and Ralph Green, published a laboratory syllabus to accompany the text. The text and syllabus were adopted by more than 45 universities and colleges in the years following their publication.

In addition to teaching responsibilities in other undergraduate and graduate courses, Dr. Kenaga served as academic counselor to students both within the department and from across the campus. He was repeatedly recognized as the outstanding teacher and counselor in the department, and in 1979 was chosen as the outstanding teacher in the School of Agriculture. In the same year, he was elected a Fellow of the National Association of Colleges and Teachers of Agriculture.

Dr. Kenaga was an avid photographer, and brought this skill and enthusiasm to the photography course for graduate students, which he taught for many years. He and his wife Doris and family traveled throughout the United States, mainly to National Parks and other unique natural areas. He often shared these experiences with members of the department through his photography at "brown bag" lunch slide shows.

Dr. Kenaga retired from the Department of Botany and Plant Pathology in 1992, and he and Doris continued their passion for travel and the outdoors until health problems became limiting.

In April 1999, Dr. Kenaga was once again honored for his dedication to teaching by being one of 39 inaugural inductees into Purdue's Book of Great Teachers. He is listed among 225 of Purdue's best teachers, from the first six faculty members in 1874, to the current crop of professors dedicated to inspiring young minds.

Dr. Kenaga's enthusiasm and dedication, especially to his students, made a lasting impression on everyone who knew him, and few will forget his favorite response, "you betcha!"

Dan Hess
1946–2000

F. Dana "Dan" Hess, former associate professor in the department, passed away on August 4, 2000. Dan was a native of Washington. He received his B.S. from Michigan State University in Horticulture and his M.S. and Ph.D. from the University of California at Davis. He was an assistant professor at Colorado State for one year before coming to Purdue in January, 1977. Dan's research at Purdue was on the modes of action of several important groups of herbicides. He taught the "Advanced Weed Science" course (BTNY 504) and was an instructor in the "Herbicide Mode of Action" course for several years.

In 1985, Dan left Purdue and joined Zoecon Research Institute in Palo Alto, CA as the Director of Plant Science Research. After the company merged with Sandoz Agro, Inc., he rose to the position of Vice-President of the North American Research Division. In 1998, he left Sandoz and joined a new venture, AffyAgro within the Affymax Research Institute.

Dan returned to Purdue in the spring of 2000 to present a seminar on the high throughput technologies that he was involved with at AffyAgro.

Dan is survived by his wife Deborah.

Purdue Names New President

Dr. Martin C. Jischke, succeeds Dr. Steven C. Beering, who stepped down after 17 years as Purdue's president. Jischke, Purdue's 10th president, assumed the responsibilities of his new office on August 14, 2000.

Dr. Jischke comes to Purdue University after serving nine years as president of Iowa State University. During Dr. Jischke's nine years of leadership, the university made huge strides in improving undergraduate education, expanding research programs, increasing student diversity, and raising money for scholarships. Private fund-raising at Iowa State set records each year under Jischke's leadership, topping $100 million annually. He also served as chancellor of the University of Missouri-Rolla from 1986 to 1991, and his success in that role led him to the presidency of Iowa State University.

Jischke's leadership extends to national and international higher-education organizations. He has been the chairman of the National Association of State Universities and Land-Grant Colleges; the president of the Global Consortium of Higher Education and Research for Agriculture; and a board member of the National Merit Scholarship Corporation, American Council of Education, Kellogg Commission of the Future of State and Land-Grant Universities, the Association of American Universities, and the American Council on Competitiveness.

After receiving his doctoral degree in aeronautics and astronautics from the Massachusetts Institute of Technology in 1968, Jischke joined the faculty of the University of Oklahoma's School of Aerospace, Mechanical, and Nuclear Engineering. During his 17 years at Oklahoma, he served in multiple capacities. He became director of the School of Aerospace, Mechanical, and Nuclear Engineering in 1977. He was the principal advisor to 21 thesis students. He served as dean of the college of Engineering from 1981 to 1986. Finally, he was named interim president of the university in 1985.

On September 1, 2000, in a meeting with the Board of Trustees, Dr. Jischke outlined his agenda for his first year at Purdue University with much enthusiasm. He announced that he would prioritize learning about Purdue and the state of Indiana, fund raising, strategic planning, developing Purdue's role in the state, building alumni and donor support, and attending to personnel changes.

Continued from page 4 (Lembi)

In November 2000, Dr. Lembi was invited to speak at a symposium on the use of barley sponsored by the North American Lake Management Society, and she and colleagues from that meeting are in the process of trying to determine why research results have been so inconsistent. Will barley be in the aquatic plant management recommendations of the future? Stay tuned!

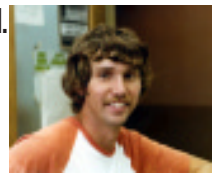
Fig. 3. Fresh-cut alfalfa can kill mat-forming algae in laboratory studies, but field tests have been inconclusive.

Continued from page 5 (Pruitt)

and annual weeds or the nature of allelopathic interactions between plants.

Dr. Pruitt is an instructor at the Cold Spring Harbor Laboratory's *Arabidopsis* Molecular Genetics course in the summer and has also taught in Purdue University's Herbicide Action Course. He will also be teaching undergraduate and graduate level courses beginning with Advanced Weed Science in the fall of 2001.

From the Archives....

1. 

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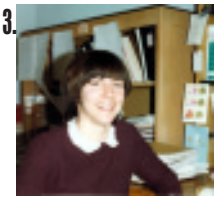
3. 

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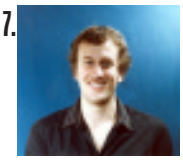
7. 

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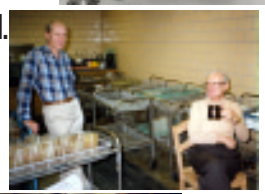
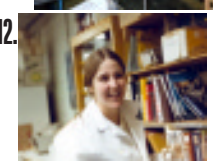
11. 

12. 

(answers on page 28)

http://www.btny.purdue.edu/faculty

T. Scott Abney: Soybean Pathology Disease of soybeans with emphasis on mycological and epidemiological aspects of fungal diseases.

Jo Ann Banks: Plant Molecular and Developmental Biology. Genetic and molecular basis of sex determination and differentiation in plants.

Thomas T. Bauman: Weed Science. Interaction between chemical and cultural methods of weed management systems.

Nicholas C. Carpita: Plant Cell Enlargement. Biochemical and molecular aspects of plant cell growth and development; structure and biosynthesis of the plant cell wall.

Ronald C. Coolbaugh: Plant Hormones. Biochemical and molecular studies on the biosynthesis of natural plant hormones such as gibberellins and abscisic acid.

Larry D. Dunkle: Host-Pathogen Interactions. Synthesis and action of fungal toxins and genetic variability in fungal pathogens.

Kevin D. Gibson: Weed Science. Ecology, biology, and management of invasive plant species and herbicide resistant weeds.

Stephen B. Goodwin: Plant Pathology. Molecular genetics of host-pathogen interactions; population genetics, evolution and speciation of plant pathogenic fungi; genetics and genomics of disease resistance in small grains.

Steven G. Hallett: Weed Science. Biological control of weeds with emphasis on the discovery and development of bioherbicides.

Michael V. Hickman: Weed Science. Weed control in field crops with emphasis on controlled-release formulations of herbicides.

Don M. Huber: Soilborne Cereal Diseases. Biological and cultural control of soilborne diseases emphasizing mechanisms, microbial and nutrient-disease interactions.

Thomas N. Jordan: Weed Science. Effect of the environment, solution additives, and plant growth on herbicide activity.

Richard Latin: Turfgrass and Vegetable Diseases. Etiology, epidemiology, and management of bacterial and fungal diseases of turfgrass and vegetables.

Carole A. Lembi: Aquatic Biology. Aquatic weed science and phycology with emphasis on ecology, physiology, and management of aquatic algae.

L. Sue Loesch-Fries: Molecular Virology. Function of viral genes in virus replication, disease development, and virus control.

Ray D. Martyn, Department Head: Plant Pathology, Soilborne Diseases. Molecular evolution of pathogenic formae speciales and races of *Fusarium oxysporum*, and the epidemiology and control of soilborne diseases of cucurbits.

Case R. Medlin: Weed Science. Remote sensing and site-specific technologies for assessing spatial distribution of weeds and providing optimum measures for their control.

Ralph L. Nicholson: Disease Physiology. Phenolic compound biochemistry and metabolism of secondary plant products in disease interactions. The fungal extracellular matrix, adhesion, and control of differentiation in the fungal infection process.

Paul C. Pecknold: Ornamental and Fruit Diseases. Epidemiology and management of apple scab, sooty blotch, and flyspeck.

Keith Perry: Plant Virology. Vector transmission of plant viruses and viral diseases of wheat.

Robert E. Pruitt: Plant Molecular Biology. Molecular and genetic regulation of growth and development of plants, fertilization and epidermal cell interactions.

Merrill A. Ross: Weed Science. Systems of control of johnsongrass, Canada thistle, and other perennial weeds.

Gregory E. Shaner: Plant Pathology. Field Crop Diseases. Epidemiology and management of diseases of corn, soybeans, and small grains. Disease resistance in small grains.

Mary Alice Webb: Plant Cell Biology. Plant cell and developmental biology; calcium oxalate accumulation in specialized cells.

Andreas Westphal: Plant Pathology. Soilborne diseases of agronomic and horticultural crops; Disease suppressive soils.

Charles P. Woloshuk: Corn/Mycotoxin Pathology. Genetics, biochemistry, and physiology of mycotoxin biosynthesis.

Jin-Rong Xu: Fungal Biology. Characterization of fungal pathogenicity genes and signal transduction pathways in *Magnaporthe grisea.*

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Continued on page 15

Grants Awarded in 2000

W.W. McFee, **T.S. Abney**, J.M. Ferris, and J.R. Wilcox, Indiana Soybean Board, $216,850, "Soybean Breeding and Genetics at Purdue University."

T. S. Abney, Indiana Soybean Board, $30,000, "Phytophthora Root Rot: Identify Dominant Races of Soybean Phytophthora."

T.S. Abney, Indiana Soybean Board, $30,000, "Sudden Death Syndrome: Root Infection/Foliar Response of Soybean Varieties (Including Roundup Ready Soybeans)."

T. S. Abney and G.E. Shaner, North Central Soybean Research Program, $16,360, "Indiana White Mold Soybean Research Part of North Central Soybean White Mold Project."

T.S. Abney and **R.D. Martyn**, Agricultural Research Service, $66,780, "Soybean Pathogen Germplasm Collection: *Phytophthora sojae* and Northern Region Uniform Soybean Tests."

T.S. Abney, Southern Illinois University, $25,000, "North Central Regional Sudden Death Syndrome of Soybeans Research."

J.A. Banks, National Science Foundation, $135,405, "The Genetic and Molecular Basis of Sex Determination in *Ceratopteris*."

J.A. Banks, National Science Foundation, $5,000, "The Genetic and Molecular Basis of Sex Determination in *Ceratopteris*."

J.A. Banks, National Science Foundation, $145,000, "The Genetic and Molecular Basis of Sex Determination in *Ceratopteris*."

N.C. Carpita and **T.K. Hodges**, U.S. Department of Energy, $100,000, "Mechanisms Synthesis of Mixed Linkage ß-Glucan, and the CESA Gene Family of Rice."

N. C. Carpita, Dow AgroSciences, $91,050, "The 'Pollen Tube Pathway' for Transgenic Plant Production."

N.C. Carpita and W.E. Vermerris, National Science Foundation, $600,000, "A High through-put Screen to Identify and Clone Maige and Arabidopsis Cell-Wall Biogenesis-Related Genes."

B.A. Watkins, P.R. Brown, J.R. Burgess, **N.C. Carpita**, S.S. Donkin, B.R. Hamaker, K.T. McNamara, S.E. Mills, J.E. Simon, R.K. Singh, J.J. Turek, and D.J. Waters, 21st Century Research and Technology Fund, $2,000,000, "A Center of Excellence: Enhancing Foods to Protect Health."

N.C. Carpita, Cooperative State Research Service, $130,000, "Characterization of Arabidopsis Cell-Wall Mutants."

R.C. Coolbaugh, Embassy of the Arab Republic of Egypt, $1,500, "Visiting Scholar Research Expense."

D.S. Egel, America Food Processors Association, $5,192, "Bacterial Spot of Tomato with Actigard, a Bactericide with a New Mode of Action."

D.S. Egel, R.X. Latin, R.D. Martyn, and **K.K. Rane**, State of Indiana, Value Added Grant Fund, $120,000, "Etiology and Management of a Mature Watermelon Vine Decline Disease in Southern Indiana."

H. W. Ohm, and **S. B. Goodwin**, Agricultural Research Service, $7,995, "Identification and Analysis of Septoria Resistance Genes in Wheat."

J.M. Anderson, **S.B. Goodwin**, H.W. Ohm, F. E. Regnier, and C. E. Williams, Showalter Trust, $100,000, "New Analytical Tools for Studying Protein Biodynamics in Plants."

W.W. McFee, D.C. Flanagan, **M.V. Hickman**, C.H. Huang, M.A. Nearing, L. D. Norton, and D.E. Scott, Agricultural Research Service, $34,145, "Processes of Soil Erosion and Impacts on Soil and Water Quality."

D.M. Huber, Animal Plant Health Inspection Service, $2,300, "National Conference on Biological Control of Soilborne Plant Pathogens."

R.X. Latin and **D.S. Egel**, National Watermelon Promotion Board, $21,700, "Multi-State Evaluation of a Weather-Based Disease Warning System for Gummy Stem Blight Management."

J.M. Lowenberg-DeBoer, S.M. Brouder, J.F. Frankenberger, C.J. Johannsen, **C.R. Medlin**, G.E. Miles, M.T. Morgan, R.L. Nielsen, S.D. Parsons, and R.M. Strickland, New Holland North America, Inc., $97,763, "Development of Site-Specific Profitability of Training Materials."

C.R. Medlin and O.K. Ersoy, Cooperative State Research Service, $5,020, "Reducing Herbicide Input and Increasing Economic Output with Site-Specific Weed Management."

C.R. Medlin and O.K. Ersoy, Cooperative State Research Service, $59,980, "Reducing Herbicide Input and Increasing Economic Output with Site-Specific Weed Management."

C.R. Medlin and **T.T. Bauman**, University of Nebraska, $8,500, "Validation of Weedsoft for Use in Indiana."

C.R. Medlin, USDA, NRI Cooperative State Research Service, $100,000, "Site-Specific Weed Management in the Midwestern Corn and Soybean Belt."

K.L. Perry, Purdue Research Foundation, $11,666, "A Structure-Based Approach in the Analysis of Cucumber Mosaic Virus and its Aphid Vector Transmission."

R.E. Pruitt and **S.J. Lolle**, National Science Foundation, $280,000, "Molecular and Genetic Analysis of Organ Fusion in *Arabidopsis*."

R.E. Pruitt and **S.J. Lolle**, National Science Foundation, $22,796, "Molecular Genetic Characterization of Epidermal Cell Interaction Mutants of *Arabidopsis*."

M. Scholler, G. Deml, and G. Hagedorn, BMBF, Germany, $90,000, "Computerization of Important European Host-Pathogen Indices for Fungi."

M. Scholler, ATBI Foundation, $500, for field trips in the Great Smoky Mountains.

C.Y. Oseto and **P.R. Sellers**, Animal Plant Health Inspection Service, $6,300, "Survey for Karnal Bunt in Indiana Wheat and Plum Pox Virus Educational Campaign in Indiana."

P. Sellers, et al. 21st Century Extension Initiative, $88.760, "Digital Diagnostics: A New tool for Distance Education in Indiana."

G.E. Shaner, Agricultural Research Service, $90,743, "Fusarium Head Blight Research."

G.E. Shaner, Dow AgroSciences, $500, "Evaluation of Experimental Fungicides for Control of Fusarium Head Blight of Wheat."

G.E. Shaner and **K.L. Perry**, Agricultural Research Service, $12,000, "Comprehensive Oat Improvement through National Germplasm Enhancement at Purdue University."

T.J. Gibb, C.Y. Oseto, and **F. Whitford**, Indiana Department of Environmental Management, $99,838, "Integrated Pest Management Practices of Childcare Facilities and Schools."

H.A. Holt, R.L. McKenzie, and **F. Whitford**, Environmental Protection Agency, $50,000, "Model Certification Training Manual for Right-of-Way Pesticide Applicators."

C.P. Woloshuk, Agricultural Research Service, $22,912, "Characterization of Infection and Aflatoxin Biosynthesis in Maize Kernels by *Aspergillus flavus*."

C.P. Woloshuk, General Mills, Inc., $1,500, "Ozonation of Wheat."

Continued on page 20

Three Faculty Receive NSF Grants

Carpita lands $600,000 NSF grant to find cell wall mutants.

The plant cell wall is a highly organized composite that contains many different polysaccharides, proteins, and aromatic substances. These complex matrices are defining features of individual cells within the plant body. Ultimately, the plant wall functions as the determinant of plant morphology. The importance of the plant cell wall is revealed in the shear number of genes likely to be involved in cell wall biogenesis, assembly, and modification. For example, the arabidopsis genome sequencing project tells us that well over 2,000 genes are likely to participate in wall biogenesis during plant development, and we know the function of less than half of these genes.

Dr. Nick Carpita received a $600,000 grant from the NSF Genome Research Program to develop Fourier transform infrared spectra as a high through-put and specific method to identify mutations that affect plant cell wall polysaccharide components and wall architecture. These mutants provide the means to achieve their goal to identify all the genes involved in the formation of plant cell walls. Dr. Carpita leads an interdisciplinary team that includes Purdue scientists Wilfred Vermerris, also in Botany and Plant Pathology, Chris Staiger, Department of Biological Sciences, as well as scientists from the John Innes Centre, Norwich, U. K., University of Wisconsin, University of Connecticut, and University of Florida. Douglas Shoue, Department of Botany and Plant Pathology, supervises a team of undergraduate students who use this novel spectroscopic method to identify in mutagenized populations of maize and arabidopsis a broad range of genes involved in the biogenesis and dynamic alteration plant cell wall architecture during growth and development.

Banks receives $280,000 to study "The genetic and molecular basis of sex determination in the homosporous fern *Ceratopteris.*"

Gametophytes of the fern *Ceratopteris richardii* are sexually dimorphic, either hermaphroditic or male. The determinant of sex in this and other ferns is antheridiogen, a gibberellin-like pheromone that is secreted by the hermaphroditic gametophyte and promotes male development of other sexually undetermined gametophytes. The plant hormone abscisic acid blocks the antheridiogen response. The primary objective of this proposal by **Dr. Jody Banks,** which was funded by the National Science Foundation, is to understand how antheridiogen and abscisic acid govern the sex of the *Ceratopteris* gametophyte.

The genetic analysis of five phenotypic classes of sex-determining mutants (12 loci) has lead to a hypothetical sex-determining genetic pathway in this species. To understand how these genes regulate sex determination at the molecular level, it will be necessary to clone these genes. The objective of the proposed research isto continue the genetic analysis of sex determination and develop methods required to clone the sex-determining genes in *Ceratopteris*. These methods include transformation, which will allow us to incorporate reverse genetic approaches to study gene function, and endogenous transposable element identification, which will provide new options to clone the many genes that have been identified by mutation.

Pruitt receives $280,000 NSF award for "Molecular and Genetic Analysis of Organ Fusion in *Arabidopsis*."

Cell interactions can broadly be categorized into two types in plants: those that require cytoplasmic continuity between participating cells and those that do not. In this proposal, written by **Drs. Robert Pruitt** and **Susan Lolle** and funded by NSF, the focus is on the latter type which is typified by interactions at the plant epidermal surface. Under most conditions, the plant epidermis is developmentally inert. At maturity these cells serve multiple functions central to the health and growth of the plant, balancing both biotic and abiotic influences. However, two types of epidermal cell interactions that play important roles in plant reproduction, organ fusion, and the early stages in pollen growth, are notable exceptions to the otherwise immutable role played by the mature epidermis. From work we have completed using mutants of *Arabidopsis thaliana* that show contact-mediated organ fusion, it is becoming evident that the extra-cytoplasmic compartment (the cell wall and cuticle) can act as an important developmental regulator, promoting or attenuating signalling events between the epidermis and other contacting cells. This proposal has outlined experiments that will further advance our understanding of how these interactions are regulated using a variety of approaches.

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The Year in Pictures

The Year in Pictures

Introducing our Post-Doctoral Staff

Dr. Tika Adhikari received M.S. and Ph.D. degrees from the University of the Philippines, Los Banos while working at the International Rice Research Institute. Dr. Adhikari will be in the laboratory of Dr. Steve Goodwin where he will be working on finding molecular markers that are linked to resistance genes and studying the patterns of gene expression during the response of wheat to the fungal pathogen *Mycosphaerella graminicola*.

Dr. Alexander Franz is working in the laboratory of Dr. Keith Perry conducting experiments involving the evolutionary studies of cucumber mosaic virus. Dr. Franz received his Ph.D. from the University of Kiel, Germany in 1997. He arrived in April, 2000 from the Netherlands. Dr. Franz will continue this research in the Perry lab until April 0f 2002.

Dr. Gyung-Hye Huh transferred to the Department of Botany and Plant Pathology from the Horticulture and Landscape Architecture Department in July, 2000. She is working in the laboratory of Dr. Charles Woloshuk conducting research on the molecular biology of aflatoxin biosynthesis. The goal of this project is to determine the mechanism responsible for the dominant phenotype associated with *afl-1*. Dr. Huh received her Ph.D. from Kyoto University, Japan in 1995. She will be conducting research in the Woloshuk lab until September of 2002.

Dr. Mike Madson is a native of Iowa but has resided in West Lafayette for 12 years. Dr. Madson is working on the characterization of mur-2, mur-3, mur-5, and mur-6 *Arabidopsis thaliana* mutants in the laboratory of Dr. Nick Carpita. He received his Ph.D. in biochemistry from the University of Missouri in 1980. Dr. Madson began conducting research in the Carpita lab in October of 1999.

Dr. Gyungsoon Park arrived in the Department of Botany and Plant Pathology in July 1998 from Seoul, Korea. Dr. Park began conducting research in the laboratory of Dr. Keith Perry on two projects: viruses of wheat and evolutionary studies on cucumber mosaic virus. In October, 2000, Dr. Park moved to the laboratory of Dr. Jin-Rong Xu to conduct research on the function of Ste12 homolog, a transcription factor in *Magnaporthe grisea* and *Fusarium graminearum*. Dr. Park received her Ph.D. from Emory University in Atlanta, Georia in 1997.

Dr. María Jesus Peña has been a post-doctoral research assistant in the laboratory of Dr. Nick Carpita working on a project entitled "Pectin cross-linking dynamics and wall softening during fruit ripening" since January 1998. Dr. Peña received her Ph.D. in 1996 from the University of Santiago de Compostela, Spain. Dr. Peña recently returned from a trip to Spain for a visit with her family and will continue her research here until December of 2001.

Dr. Hari Ramasubramaniam joined the staff at the Southwest Purdue Agricultural Center in Vincennes, IN in December 2000. Dr. Ramasubramaniam will be working with Dr. Dan Egel on the mysterious mature watermelon vine decline problem that is affecting growers in southern Indiana. Dr. Ramasubramaniam arrived at Iowa State University in 1995 from India to pursue his M.S. and Ph.D. degrees.

Dr. Catherine Rayon is conducting research in the laboratory of Dr. Nick Carpita with a cell-wall biology group to characterize the *Cel*A gene family of grasses, which may encode ß glucan synthases as well as cellulose synthases. Dr. Rayon received her Ph.D. in Plant Cellular Biology from the University of Rouen in France. She came to Dr. Carpita's lab in September of 1999 and will continue her research until the fall of 2001.

Dr. Won-Bo Shim is a recent graduate from the Department of Botany and Plant Pathology. He received his Ph.D. in December, 2000 studying "The regulation of fumonisin biosynthesis in *Fusarium moniliforme*" in Dr. Charles Woloshuk's program. Dr. Shim accepted a USDA-ARS Post-Doctoral Research Associate position in Dr. Larry Dunkle's lab where he is investigating the molecular biology of *Cercospora zeae-maydis* and the role of cercosporin biosynthesis in gray leaf spot of corn.

Dr. Wilfred Vermerris has been a post-doctoral research associate in the laboratory of Dr. Nick Carpita since October, 1999. Dr. Vermerris is studying the genetic control of cell wall biosynthesis in maize and sorghum, with a focus on the potential improvement of forage quality, and disease and insect resistance. He received his M.S. in bio-molecular engineering from Wageningen Agricultural University in The Netherlands and his Ph.D. in genetics from North Carolina State University.

Dr. Chaoyang Xue joined the laboratory of Dr. Jin-Rong Xu in July, 2000 to work on a variety of pathogens, plant genome structure, disease resistance, stress tolerance, development and transformation projects. Dr. Xue received his M.S. and Ph.D. degrees from the Biotechnology Institute at Zhejiang University in Hangzhou, China. He will continue this research until the summer of 2002.

Dr. Weidong Yong arrived from the Chinese Academy of Sciences, Beijing, China in July 2000. Dr. Yong is working on a collaborative project with scientists at Dow AgroSciences in Zionsville, IN and with Dr. Nick Carpita on the development of alternative methods for the genetic transformation of wheat. Dr. Yong received his Ph.D. from the Institute of Botany at the Chinese Academy of Sciences, Beijing, China. He will continue work on this collaborative project until December 2001.

2000 Departmental Seminar Series

In the first year of the new millenium the Department of Botany and Plant Pathology Seminar Series was highlighted by 26 speakers including 11 renowned scientists from other universities, two from private industry, five faculty and staff from Purdue University, and eight graduate students. The following is a list of guests who were invited to present seminars in our departmental seminar series:

Katie Clark, Purdue Life Science Library, Purdue University. *Let Your Fingers Do the Walking: Citation Databases and Research Articles at Your Fingertips!*

Thomas German, Department of Plant Pathology, University of Wisconsin. *Cloning and Characterization of the Insect Receptor of Tomato Spotted Wilt Tospovirus*.

Allison Snow, Department of Evolution, Ecology, and Organismal Biology, Ohio State University. *Gene Flow From Transgenic Crops to Weeds.*

Karen-Beth Scholthof, Department of Plant Pathology, Texas A & M University. *Interactions Between Panicum Mosaic Virus and Its Satellites.*

James Morre, Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University. *A Growth-Related and Time-Keeping Protein with Potential for Enhanced Plant Production.*

Mike Madson, Department of Botany and Plant Pathology, Purdue University. *Two Arabidopsis Wall Mutants: Missing Transferases?*

James Partridge, Department of Plant Pathology, University of Nebraska. *To Infinity and Beyond - Using Technology to Enhance Student Learning.*

Markus Scholler, Department of Botany and Plant Pathology, Purdue University. *Phylogeny and Taxonomic Delimitation of Predatory Orbiliaceous Fungi.*

James Birchler, Department of Biological Sciences, University of Missouri-Columbia. *Biological Consequences of Dosage Dependent Gene Regulation in Higher Eukaryotes.*

Dan Hess, Affymax Research Institute, Santa Clara, CA. *High Throughput Synthesis and Screening: Adapting a Pharmaceutic Discovery Process to Crop Protection.*

Claudia Vergara, Department of Botany and Plant Pathology, Purdue University. *The Cellulose Synthase Gene Family in Cereals - They're Not Just for Cellulose Anymore!* (Ph.D. research seminar).

Bruce Kohorn, Department of Botany, Duke University. *Cell Wall- and Membrane- Associated Receptor Protein Kinases and Their Possible Role in Plant-Microbe Interactions.*

Linda Nelson, Department of Botany and Plant Pathology, Purdue University. *Phytoremediation of TNT-Contaminated Water by the Submersed Aquatic Macrophyte, Potamogeton pectinatus L.* (Ph.D. research seminar).

Nick Carpita, Department of Botany and Plant Pathology, Purdue University. *Forward- and Reverse-Screens to Identify Cell Wall Mutants of Maize and Arabidopsis.*

Alison Fox, Department of Agronomy, University of Florida, Gainesville. *What's So Complicated About Dealing with Alien Invasions?*

Martin Dickman, Department of Plant Pathology, University of Nebraska. *Comparative Pathobiology: An Approach in Understanding Fungal Disease and Plant Resistance.*

Kerry O'Donnell, National Center for Agricultural Utilization Research, USDA-ARS, Peoria, IL. *Major Evolutionary Lineages with Fusarium: A Species-Rich Phytopathogenic Fungus.*

Jeff Bennetzen, Department of Biological Sciences, Purdue University. *Comparative Genetic Analysis of Grass Genome Structure, Function, and Evolution.*

Ahmad Fakhoury, Department of Botany and Plant Pathology, Purdue University. *Inhibiting the Amylase of Aspergillus flavus to Control Aflatoxin Production.* (Ph.D. research seminar).

Won-Bo Shim, Department of Botany and Plant Pathology, Purdue University. *Regulation of Fumonisin Biosynthesis in Gibberella fujikuroi*. (Ph.D. research seminar).

Arthur Hunt, Department of Agronomy, University of Kentucky-Lexington. *Polyadenylation of RNA in Plants - Multiple Functions for Poly (A) Polymerase?*

Kashchandra Raghothama, Department of Horticulture and Landscape Architecture, Purdue University. *Gene Expression: It's On, It's Off, the Bottom Line is Phosphorus.*

Lee Ann Glomski, Department of Botany and Plant Pathology, Purdue University. *The Search for Exudates from Eurasian Watermilfoil and Hydrilla.* (M.S. research seminar).

James Ng, Department of Botany and Plant Pathology, Purdue University. *Isolation and Characterization of Cucumber Mosaic Virus Mutants Defective in Aphid Transmission.* (Ph.D. research seminar).

Alexander Franz, Department of Botany and Plant Pathology, Purdue University. *The Insect Transmission of Faba Bean Necrotic Yellow Virus, a Member of a Novel Virus Genus*.

Po-Yen Tung, Department of Botany and Plant Pathology, Purdue University. *Modification of a Rice Seed Storage Protein Gene: Expression in Arabidopsis*. (Ph.D. research seminar).

Plant and Pest Diagnostic Laboratory

Dr. Peggy Sellers, Director

The Plant and Pest Diagnostic Lab (P&PDL) had another eventful year. During 2000, the departmental staff of the P&PDL (**Peggy Sellers**, Director, **Gail Ruhl** and **Karen Rane**,plant disease diagnosticians, and **Case Medlin**, weed scientist), along with a team of others from the School of Agriculture, diagnosed 2,139 samples, an increase of 251 from the previous year.

The most common commodities submitted to the P&PDL were woody ornamentals (31%), followed by flowers (22%), and agronomic crops (20%); the remaining 27% were distributed among various commodity groups. Noninfectious disorders (40%), infectious diseases (32%) and arthropod-related problems (13%) were the most common primary diagnoses in 2000. While the P&PDL staff continues to participate in a cavalcade of extension activities throughout the state, the most noteworthy addition has been the digital diagnostics project, funded by Purdue's 21st Century Extension Initiative. A pilot project, *Digital Diagnostics: A New Tool for Distance Education in Indiana*, is underway to enhance the diagnostic capabilities of the P&PDL. The goal of the project is to provide a means of collecting and transmitting digital images from county Extension Educators and other clients throughout the state so the staff of the P&PDL can respond to the needs of the citizens of Indiana more efficiently. As part of this project, 15 digital imaging test sites have been established throughout the state and a prototype Web site has been developed and is available to Purdue Extension personnel. While one objective of the project is to provide a standard Web-based method of submitting digital samples to the P&PDL, another is to provide continuing on-line education through a digital library which is steadily expanding to include select digital images, diagnostic data, and management information. We anticipate that digital diagnostics capabilities will be made available to the general public during 2002. The P&PDL Web site <www.ppdl.purdue.edu> continues to be a source of information for plant and pest-related problems.

The Plant and Pest Diagnostic Lab joined forces with the Department of Horticulture and Landscape Architecture and the Indiana Master Gardeners with Plant Info to Go during the Indiana Flower and Patio Show.

Gail Ruhl and Karen Rane examine plants in the Plant and Pest Diagnostic Lab.

Grants continued from page 14

C.P. Woloshuk, Agricultural Research Service, $22,912, "Characterization of Infection and Aflatoxin Biosynthesis in Maize Kernels by *Aspergillus flavus*."

D.E. Maier and **C.P. Woloshuk**, Kansas State University, $250,486, "Consortium for Integrated Management of Stored Product Insect Pests."

J.R. Xu, Purdue Research Foundation, $11,666, "Development Efficient Functional Analysis Approaches for Filamentous Fungi."

J.R. Xu, Agricultural Research Service, $48,780, "Genomics of *Gibberella zeae*, the Head Scab Fungus."

J.R. Xu, Novartis Agribusiness Biotech Research, Inc., $120,000, "Identifying Pathogenicity Factors and Fungicide Targets in the Gray Fungus *Botytis cinenerea*."

J.R. Xu, Cooperative State Research Service, $300,000, "Characterizing the Pmk1 Pathway Regulating Fungal Pathogenesis in *Magnaporthe grisea*."

Southwest Purdue Agricultural Center

Dr. Daniel Egel, Coordinator, Agricultural Programs

Located in Vincennes, IN, the Southwest Purdue Agricultural Center (SWPAC) is a center for applied research in vegetable and agronomic crops. SWPAC is the only Purdue farm staffed by full-time Extension specialists. **Dr. Dan Egel** is an IPM specialist located at SWPAC and has been a member of the Botany and Plant Pathology Department since 1995.

In 2000, Dr. Egel's time was devoted largely to the new disease "mature watermelon vine decline" (MWVD). MWVD, previously known as sudden wilt, was estimated to have caused a 20% yield loss to watermelon growers in southwest Indiana last year. This new disease problem received the attention of Lt. Gov. Joe Kernan, when in August he toured several watermelon fields affected with this disease.

This fall, Dr. Egel and colleagues received a joint grant from the Indiana Value Added Grants Program in the Lt. Governor's office and from the Purdue University School of Agriculture to investigate possible causes and management options. Co-authors on the grant are Drs. Karen Rane, Ray Martyn, and Rick Latin.

As part of the grant, a post-doctoral associate was hired to work on mature watermelon vine decline full time. Dr. Harikrishnan (Hari) Ramasubramaniam has filled this position and recently moved to Vincennes with his family from Ames, Iowa where he was a graduate student in the laboratory of X. B. Yang at Iowa State University.

2000 has been a year for staffing additions at SWPAC. In October, Dr. Chris Gunter joined the staff of the SWPAC as a Horticultural Specialist. Dr. Gunter is part of the Department of Horticulture and Landscape Architecture. Dr. Gunter, Dr. Ramasubramaniam, and Dr. Egel will be a part of the team that will tackle the mature watermelon vine decline problem. The Department of Entomology is currently searching for an entomology specialist to join SWPAC.

For several years muskmelon and watermelon growers in southwest Indiana have been able to use the disease-forecasting program MELCAST to apply protective fungicides when they are most needed. In most years, MELCAST, originally developed by Dr. Latin, could save growers 2 to 3 fungicide applications per year. In 2001, the National Watermelon Promotion Board awarded Dr. Egel and Dr. Latin a grant to validate the MELCAST system in 10 different sites around the country.

Commissioner of Agriculture Joe Kernan listens as producer James Deem tells about the effect of MWVD on watermelon plants.

Producer James Deem displays watermelon roots affected by MWVD to Commissioner of Agriculture Joe Kernan and Dean Vic Lechtenberg, and State Representative John Frenz.

Watermelon producer Robert Ellerman talks with Commissioner of Agriculture Joe Kernan and State Representative John Frenz about the damage MWVD has caused his operations in 2000.

Richard Latin discusses the root symptoms of MWVD with Dan Egel, IPM Specialist; Vic Lechtenberg, Dean of the School of Agriculture; and Robert Ellerman, watermelon producer.

The Purdue University Herbarium

Dr. Markus Scholler, Curator

During 2000, the herbarium was a very busy place. In addition to two student volunteers, several visiting scientists and students from Germany (K. Wohlfahrt, Dr. A. Rubner), Iran (M. Abbasi), and the U.S.A. (Dr. J. McCain) worked in the herbarium on numerous projects.

Several hundred persons visited the Purdue herbaria, including students and amateur botanists. Special lectures and tours of the herbaria were given to students in several classes, including Plant Science Lectures, Introduction to Plant Sciences, Plant Classification and Autumn Flora of Indiana.

The herbarium is gaining increasing importance to the public. In addition to requests for rust fungi identification from all over the world, numerous people from the Greater Lafayette area have requested the identification of molds, mushrooms, and higher plants. In 2000, 146 different species were identified. The most exciting were mushrooms eaten by a dog, who according to Purdue veterinarians, later displayed signs of a severe pneumonitis. A puffball species, *Lycoperdon pyriforme*, turned out to be the causal agent. This disease, called lycoperdonosis, is (rarely) documented for humans, but this may well be the first time for a dog. Additional public activities conducted by the herbaria included botanical excursions, lectures, displays and exhibitions. A display case honoring Dr. J. C. Arthur, also was prepared. The Purdue herbaria and former curator, Dr. G. B. Cummins, were highlighted in *Inoculum*, the newsletter of the Mycological Society of America.

During 2000 the herbarium underwent some minor renovations. A small lab was built and equipped with two microscopes, and part of the furniture was replaced. A new computer and printer, a photocopy machine, and a security system were also added.

About 9,000 specimens and 2,000 books and reprints were donated to the herbaria in 2000, a great part of which came from the New York Botanical Garden and former Purdue student Dr. John McCain. In addition, the plant rust host index, more than 700 rust specimens, and almost 1,800 reprints were returned to the herbaria.

The scientific importance of a herbarium is reflected by the number of loans. In 2000, 2,362 specimens were sent on loan to countries on four continents. This loan frequency is, at least proportionally, the highest among the Midwest herbaria. A considerable number of specimens were requested not for morphological, but for molecular studies.

Two scientific papers were published by the curator in 2000 on the ecology and taxonomy of rust fungi and nematode-trapping fungi in collaboration with colleagues in Berlin, Germany. During a one-week field trip to the Great Smoky Mountains National Park, approximately 150 specimens of plant parasitic fungi were collected and then deposited in the Purdue Herbaria. These records will contribute to the ATBI (All Taxa Biodiversity Inventory) project in the Great Smoky Mountains. Research on a rust disease of ground-ivy has been initiated by J. Boellmann, a new graduate student, and M. Abbasi is studying the taxonomy of grass rust species, using traditional morphological and molecular methods.

Finally, former studies on the Australian rust fungus, *Puccinia lagenophorae* ("groundsel rust") were re-activated because of the identification of this invasive species in North America in November 2000 (see Fig. 2).

Fig. 1: Herbarium personnel, November 2000 (from left to right): Dr. Annemarthe Rubner (visiting scientist), Joerg Boellmann (graduate student), Mehrdad Abbasi (visiting scientist), Joan Mohr-Samuels (student volunteer), Dr. John McCain (visiting scientist), Leilah Thiel (herbarium assistant), Dr. Markus Scholler (curator). The picture in the showcase on the left is Dr. J. C. Arthur.

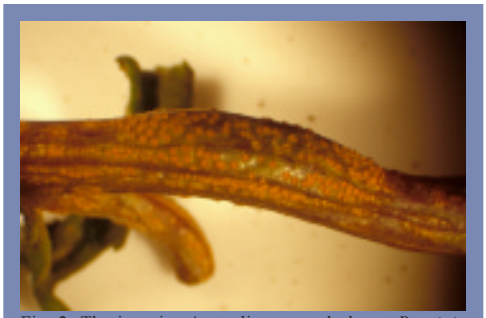

Fig. 2: The invasive Australian groundsel rust *Puccinia lagenophorae,* which was found for the first time in North America (California) in 2000.

Weed Science Faculty Attend International Weed Science Congress

Drs. Tom Bauman, Carole Lembi, and **Merrill Ross** attended the 3rd International Weed Science Congress in Foz do Iguassu, Brazil on June 4-10, 2000. While there, they were hosted by four former Ph.D. graduate students; **Dr. "John" Baptista da Silva** was the chairman of the organizing committee for the congress and is currently vice-president of the Brazilian Weed Science Society. **Dr. Ribas Vidal** is a professor at the Universidade Federal do Rio Grande do Sul in Porto Allegre, and his hospitality really helped make the trip special. **Dr. Itamar Souza** is a professor at the Universidade Federal de Lavras, and **Dr. Roberto Pereira**, who chaired many sessions, lives in Brasilia and is retired but does consulting work. The major focus of the meetings was on the seriousness of invasive weed species on a global scale, and the controversies surrounding herbicide resistant crops. Foz do Iguassu is noted for its magnificent waterfalls. Seeing those and their Brazilian friends made the trip an exciting experience.

Purdue Pesticide Programs

Dr. Fred Whitford, Coordinator

Purdue Pesticide Programs works hard to be important to Purdue University; to be a top national player in pesticide education; and to take their interaction with the public seriously as the first step in achieving impact. Quite simply, Purdue Pesticide Programs has an impact by producing the best products possible. Their influence is widened by interaction with diverse sectors and organizations, and their importance is expanded through educating the people they serve. Purdue Pesticide Programs consists of Dr. Fred Whitford (Coordinator), Andrew Martin (Pesticide Training Specialist), Cheri Janssen (Program Specialist), Arlene Blessing (Developmental Editor), and Cindy Myers (Webmaster and Program Assistant).

Purdue Pesticide Programs was very active in their outreach efforts in 2000. They presented nearly 160 programs throughout the United States including three international presentations in Mexico. Examples of topics presented include residues on food, the science behind the label, farm wells and buildings, international pesticide standards, pesticide use in public schools, the future of farming, and termite control. These presentations were given to organizations such as Cargill Ag Horizons, Northeast Indiana Chapter of the Indiana Environmental Health Association, U.S./Mexico Pesticide Information Exchange, Hangzhou China Delegation, Golf Course Superintendents Association of America, Michigan Department of Transportation, and Indiana Mastergardener. Purdue Pesticide Programs also provided educational outreach for those seeking commercial pesticide applicator certification.

In 2000, Purdue Pesticide Programs conducted 22 commercial pesticide applicator programs attended by 1,141 individuals. The teaching of commercial pesticide applicators was greatly enhanced by 34 university, industry, and government trainers.

Purdue Pesticide Programs has been very active in the development of pesticide publications. Their Extension publications, training manuals, and a quarterly newsletter represent one of the best sources of pesticide information available nationwide. A total of 15,000 publications were distributed from the Purdue University Media Distribution Center during 2000. Their newest publications include those topics dealing with human health risk assessment, the insurance policy, managing farm chemicals, drift, and wellhead protection.

More information about Purdue Pesticide Programs can be found on their Web site at:

http://www.btny.purdue.edu/PPP/

Dr. Fred Whitford assists a young participant in the Pesticide Safety Booth at the annual Spring Fest event.

What's New With You?

We would like to hear from you. Please send us any updated information, comments, and news (interests, achievements, memberships, promotions, honors, career activities, family additions) you care to share to Ms. Pam Mow at the Department of Botany and Plant Pathology, 1155 Lilly Hall, West Lafayette, IN 47907-1155, Phone: (765) 494-4615, or by email <mow@btny.purdue.edu>. Keep in touch!

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2000 North Central Collegiate Weed Science Contest

The 2000 North Central Collegiate Weed Science Contest was held July 20th at the Bayer Corporation Research Station near Oxford, Indiana. Graduate and undergraduate teams from 10 Midwestern states competed. Participating universities included Kansas State University, Iowa State University, Michigan State University, North Dakota State University, Ohio State University, Purdue University, Southern Illinois University, University of Illinois, University of Missouri, University of Nebraska, University of Wisconsin, Madison, University of Wisconsin, Platteville, University of Wisconsin, River Falls, and Western Illinois University. Over 150 participants, coaches, judges, and company representatives were involved in the day-long contest. The top three graduate teams were; 1st place University of Missouri, 2nd place University of Nebraska, and 3rd place Kansas State University. Brent Sellers, a former graduate student of Mike Hickman, was a member of the University of Missouri team.

The contest consists of four major parts (i.e. weed identification, herbicide identification, team and individual sprayer calibration, and problem solving) that tests every aspect of the contestants' agronomic knowledge. The contest is designed to give the contestants practical experience at many typical day-to-day activities in the field of weed science.

After being absent from the contest for the past four years, Purdue University participated in the contest by taking one graduate team. Team members included Jamie Bultimeier (Tom Jordan's graduate student in Agronomy), **Wesley Everman** (Case Medlin's graduate student), **Dave Hillger** (Tom Bauman's graduate student), and **Loree Johnston** (Case Medlin's graduate student). Jamie won 1st place individual in weed identification and herbicide identification, while Loree won 1st place individual in sprayer calibration. Although our team did not place high in the team competition, they gained valuable knowledge and experience and are anxious to begin practicing for next summer's contest. We congratulate these students for all their hard work and effort.

Weed Science Team representing Purdue University at the 2000 North Central Collegiate Weed Scienct Contest in Oxford, IN. (L to R) Loree Johston, David Hillger, Wes Everman, Jamie Bultimeier and Dr. Case Medlin.

Farm Progress Show 2001 comes to Purdue Country

The Farm Progress Show 2001, sponsored by Indiana Prairie Farmer, will be staged in Tippecanoe County. It's the first time America's premier farm show has traveled to the home county of the Purdue Boilermakers. The Alan Kemper and Jerry Smit families will serve as the primary hosts. Neighbors Steve Gamble, John Rice, and Forrest Johnson have all joined to assist the Kemper & Smit Farms in providing contiguous farmland for the event. The show site is located off U.S. 52 just south of Lafayette.

The hosts have assembled 2,500 acres for use by Farm Progress in presenting the 2001 event. Tippecanoe County is consistently among the highest corn and soybean producing counties in Indiana.

"We believe this will be a tremendous site for the 2001 Farm Progress Show," says Mark Randal, Farm Progress' National Shows Director. "Our host farmers have patiently worked through the screening process with us and I know will be a tremendous asset as we go about putting together the program for 2001. It also is definitely a plus to be so close to Purdue which has always provided tremendous educational exhibits at the Farm Progress Show."

Recognized as the "Super Bowl" for agriculture, the substantial economic activity generated by the Farm Progress Show and its hundreds of thousands of visitors makes it a highly sought prize for rural areas. Randal says the decision to locate in Tippecanoe County followed several years of very active work on the part of local community leaders and the Greater Lafayette Convention & Visitors Bureau.

Purdue's involvement is expected to be considerable. **Dr. Peggy Sellers** and **Dr. Case Medlin**, are serving as the Department of Botany and Plant Pathology coordinators. Dr. Sellers may be contacted by e-mail (sellers@btny.purdue.edu) with any questions regarding the department's involvement.

More information on the 2001 Farm Progress Shows can be obtained from the official Web site at: <http://www.farmprogressshow.com/Farm_Main.htm>.

New Undergraduate Option Announced

At the December 5, 2000 meeting, School of Agriculture faculty approved a new undergraduate option developed by the Department of Botany and Plant Pathology. The new Environmental Plant Studies (EPS) option, is appropriate for students who have a strong interest in environmental issues and wish to have a plant emphasis in their program of study. It will provide students with a firm grounding in plant biology and focus on present and impending environmental issues of the world.

Paul Pecknold, chair of the Undergraduate Curriculum Committee said: "It is the plant emphasis that sets this program apart from similar programs in other departments. The environmental plant studies option, unlike the natural resources and environmental science (NRES) program, does not emphasize air, water quality, or land resources as areas of specialization. But rather, emphasis is place on plants, their ecology, and the diverse environments in which they grow."

Students with a strong desire to work for nature organizations, herbaria or environmental consulting firms will find the new EPS option especially appealing.

The new major has been in development for over two years," said **Ray Martyn**. "We wanted to go slow and get it right. The final curriculum is the product of discussions with faculty in several departments. We are very excited about our new option and believe it will provide students with the necessary training to handle real-world environmental plant problems when they're ready to enter the job market."

"Environmental issues continue to be of growing concern at both a national and global level. Global warming, acid rain, and endangered plant species are among many environmental problems that will need solutions as we enter the 21st century. A need exists to train plant science students with the expertise to help solve these increasing environmental problem", says Martyn.

The EPS option requires 130 semester credit hours, including a set of core requirements for the school of Agriculture (70 credits) and the department (39 credits). Of the remaining 21 credits, 12 are for specialization electives and nine are unrestricted electives. In addition, EPS

Continued on page 28

Current Graduate Students

Mitchell Alix, Michigan City, Indiana - Major professor(s): Carole Lembi and Robin Scribailo

Maurico Antunes, Sete Lagoas, Brazil - Major professor: Nick Carpita

Travis Bainbridge, Merrillville, Indiana - Major professor: Sue Loesch-Fries

Muthukumar Balasubramaniam, Chennai, India - Major professor: Sue Loesch-Fries

Burton Bluhm, Norman, Oklahoma - Major professor: Jody Banks

Joerg Boellman, Greifswald, Germany - Major professor(s): Greg Shaner and Markus Scholler

Lauren Brownback, Champaign, Illinois - Major professor: Rick Latin

Alex Cochran, Akron, Ohio - Major professor: Scott Abney

Keri Colvin, Moscow, Idaho - Major professor: Ray Martyn

Richard Dirks, Michigan City, Indiana - Major professor: Case Medlin

Darrin Dodds, Urbana, Illinois - Major professor: Mike Hickman

Wesley Everman, Castalia, Iowa - Major professor: Case Medlin

Joseph Flaherty, Lebanon, Indiana - Major professor: Charles Woloshuk

Amanda Gevens, Southold, New York - Major professor: Ralph Nicholson

Kelly Goedde, Wadesville, Indiana - Major professor: Case Medlin

Phil Harmon, Owensville, Indiana - Major professor: Rick Latin

Barbara Hass, Bad Axe, Michigan - Major professor: Jody Banks

David Hillger, Peebles, Ohio - Major professor: Tom Bauman

Amr Ibrahim, Giza, Egypt - Major professor: Bob Pruitt

Loree Johnston, Aurora, Indiana - Major professor: Case Medlin

Stephen Jordan, Francesville, Indiana - Major professor: Ralph Nicholson

Bong-Suk Kim, Seoul, Korea - Major professor: Sue Loesch-Fries

Yangseon Kim, Suwon, South Korea - Major professor: Jin-Rong Xu

Preekamol Klanrit, Udonthaini, Thailand - Major professor: Mary Alice Webb

Carrie Lapaire, Hadley, Massachusetts - Major professor: Larry Dunkle

Ryan Lee, Bedford, Indiana - Major professor: Bob Pruitt

Lei Li, Beijing, China - Major professor: Jin-Rong Xu

Fidel Mendez, San Salvador, El Salvador - Major professor: Charles Woloshuk

Iris Perez, Los Altos, Venezuela - Major professor: Nick Carpita

Ana Saballos, Managua, Nicaragua - Major professor: Sue Loesch-Fries

Ian Thompson, Fullerton, California - Major professor: Don Huber

Yang Tian, Wuhan, China - Major professor: Steve Goodwin

Michael VanOosten, Fort Collins, Colorado - Major professor: Ron Coolbaugh

Katie Wilkinson, East Lansing, Michigan - Major professor: Carole Lembi

Claudia Vergara
Ph.D. Student in Molecular Cell Biology

Claudia Elena Vergara received her B.S. in Microbiology at University of the Andes in Columbia, and after a brief internship at Harvard in human genetics, she accepted a position at the prestigious International Center for Tropical Agriculture (CIAT) in Calí, Colombia. Claudia came to Purdue as part of a collaboration between CIAT and Dr. Stan Gelvin's laboratory in the Department of Biological Sciences to work on improvements in the transformation efficiency of cassava. During her stay, she decided that Purdue would be the place to realize her dream of achieving a doctorate degree. She transferred to Dr. Nick Carpita's laboratory, and combining her skills in biochemistry and molecular biology, she made significant advances in our understanding of polysaccharide synthesis in the Golgi apparatus of plants. She was the first to demonstrate the enzyme sucrose synthase to be associated with the Golgi apparatus of maize, adding further evidence that the synthase gene of mixed-linkage ß-glucan unique to the cereals derived from an ancestral cellulose synthase (CesA) gene. However, her major achievement was to show that the CesA gene family possesses a distinct sub-class structure. Further, the distinguishing feature of the plant CesA is a so-called "hypervariable region." Claudia demonstrated that the "hypervariable region" is a misnomer because it contains several conserved motifs that probably participate in catalysis. Her work has opened the door to the possibility that some of the CesAs make polymers other than cellulose.

Claudia finished her career at Purdue with seven publications, including a Perspective in Science entitled "A recipe for cellulose." She received three invitations to speak about her work in an international arena. Claudia was awarded a prestigious A. H. Ismail Interdisciplinary travel award in 1998 to present an invited talk at the International Cell Wall meeting in Norwich, U.K. She was invited to participate in a symposium presentation at the joint annual meetings of the American and Canadian Societies of Plant Physiologists, and later at a Gordon Conference on Cell Walls.

Claudia was voted the outstanding Ph.D. student in the department in September 2000. She received her Ph.D. in December 2000, and will stay in the Dr. Carpita's lab as a post-doctoral researcher until June when she will travel to Australia to assume a post-doctoral appointment with Dr. Antony Bacic, at the University of Melbourne.

Degrees Awarded in 2000

Master of Science

Lee Ann Glomski, "The Search for Exudates From *Eurasian watermilfoil* and Hydrilla: and "The Effects of Fluridone on Three Species of Watermeal." Major professor: Dr. Carole Lembi.

Doctor of Philosophy

Won-Bo Shim, "Regulation of Fumonisin Biosynthesis in *Gibberella fujikuroi."* Major professor: Dr. Charles Woloshuk.

Po-Yen Tung, "Modification of Rice Glutelin 1 Gene: Expression in *Arabidopsis,*" Major professor: Dr. Tom Hodges.

Claudia Vergara. "The ß(1→4)- linked polysaccharide synthase gene family in cereals: Towards identifying the mixed-linkage (1→3), (1→4)ß-D-glucan synthase," Major professor: Dr. Nick Carpita.

APS Travel Grants

Ian Thompson and **Alex Cochran** were chosen by the American Phytopathological Society (APS) Foundation Travel Grant Selection Committee to receive a travel grant to attend the national APS meeting in New Orleans, Louisiana in August of 2000. Each received a $400 travel award. The committee received 47 applications and awarded 23. Congratulations!

Graduate Student Wins Paper Contest

LeeAnn Glomski won the graduate student paper contest at the Aquatic Plant management Society Meetings in San Diego in July, 2000. The title of her talk was "The Search for Exudates from *Eurasian Watermilfoil* and Hydrilla." LeeAnn competed against nine other Ph.D. and M.S. students.

Outstanding Graduate Student Awards

LeeAnn Glomski and **Claudia Vergara** were selected as the 2000 Outstanding Graduate Students in the Botany and Plant Pathology Department. Each student's major professor submitted a nomination to the awards committee. The award is based on their academic and research performance and their professional activities.

LeeAnn Glomski received a $200 cash award for being selected as the outstanding master's student. LeeAnn completed her master's degree in December 2000 and she will continue working in the lab of her major professor, Dr. Carole Lembi, until May when she will take a position as research scientist at the Waterways Experiment Station of the Army corps of Engineers in Vicksburg, MS.

Claudia Vergera was awarded a $300 cash award for her selection as the outstanding doctoral student. Claudia completed her doctoral degree in December 2000 also. She is working as a post-doctoral research associate in Dr. Carpita's lab. In late May she will begin post-doc work in the laboratory of Dr. Antony Bacic in Australia.

Dr. Ray Martyn presenting Claudia Vergara with the 2000 Outstanding Ph.D. Student Award.

LeeAnn Glomski accepting her 2000 Outstanding M.S. Student Award from Dr. Ray Martyn.

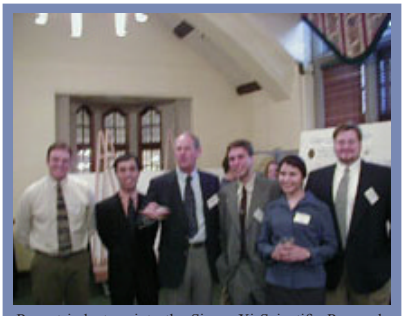
Sigma Xi

Sigma Xi is an international honor society of science and engineering. World wide, its membership has included over 150 Nobel Prize Winners. At the annual initiation and awards banquet our local chapter recognized high school science fair winners, an outstanding high school science teacher, excellent graduate student research on this campus, and the best faculty research program on campus. The Department of Botany and Plant Pathology is well represented in this society. **Dr. Ron Coolbaugh** was installed as the new President of the Purdue Chapter, and among those initiated into the society were **Dr. Susan Lolle**, and graduate students **Travis, Bainbridge, Muthukumar Balasubramaniam, Alex Cochran, Amanda Gevens, Stephen Jordan, Bong-Suk Kim** and **Ana Saballos.**

Picture taken at the Aquatic Plant Management Society Meetings, San Diego, CA in July 2000. LeeAnn Glomski (second from left) took 1st place for her talk. Graduate Student, Linda Nelson (far right) was the student contest coordinator.

Graduate Student Teaching Award

Annually the Committee on the Education of Teaching Assistants and the Office of the Executive Vice President of Academic Affairs honors outstanding graduate students who have teaching assignments in an academic department. The Department of Botany and Plant Pathology selected **Ms. LeeAnn Glomski** as this years honoree. LeeAnn is a master's student under the direction of Dr. Carole Lembi and has been a teaching assistant in the BTNY 210 course for two semesters. The honorees and guests were invited to a banquet in April and each presented with a plaque in recognition of their student teaching. Our congratulations to LeeAnn for her dedication to teaching.



Recent inductees into the Sigma Xi Scientific Research Society. (L to R) - Alex Cochran, Bong-Suk Kim, newly elected president, Dr. Ron Coolbaugh, Travis Bainbridge, Ana Saballos, and Steven Jordan.

2000 Departmental Travel Awards

Amanda Gevens, James Ng, LeeAnn Glomski, Ahmad Fakhoury, and **Bong-Suk Kim** received departmental travel grants in 2000. The Department of Botany and Plant Pathology awarded travel grants to these graduate students so that they could attend regional, national, or international meetings and present results of their research in either poster or oral communication format. Below is a list of the meetings where these students made presentations:

Amanda Gevens, Institute of Grassland and Environmental Research in Aberystwyth, Wales, June 1-15, 2000. Conduct research using SEM with micromanipulater.

Bong-Suk Kim, American Society for Virology Meeting, July 8-12, 2000, Fort Collins, CO. "AMV CP - Correlation Between Affinity for RNA and Activity in Replication."

LeeAnn Glomski, Aquatic Plant Management Society Meeting, July 16-20, 2000, San Diego, CA. "The Search for Exudates from *Eurasian Watermilfoil* and *Mydrilla*."

James Ng, American Phytopathological Society Meeting, August 12-16, 2000, New Orleans, LA. "Cucumber Mosaic Virus Mutants with Altered Physical Properties and Defective in Aphid Transmission."

2000 Gamma Sigma Delta Inductions

Annually, the Membership Committee invites nominations from among faculty and graduate students for induction into this nationally recognized Honor Society of Agriculture, Consumer and Family Sciences, and Veterinary Medicine. Dr. Scott Abney is the department representative on this committee.

The following graduate students were honored at a banquet on Sunday, March 26, 2000: master student, **Lee Ann Glomski** and doctoral students, **Mauricio Antunes, Bong Suk Kim,** and **Iris Perez Aldemita**.

Degrees Awarded in 2000

Bachelor of Science

Mark Kinsey
Joseph Knoll
Ryan Lee
Heather Myers
Quintin Wade
Kurt Wilhelm
Stephen Jordan

2000 Scholarship Recipients

Botany and Plant Pathology Junior Scholarship

Matthew Eckerle

David Smith

Botany and Plant Pathology Senior Scholarship

Amelia Hammond

Leonard B. Clore Scholarship
Lewis Runkle Scholarship
Hillis & Esther Wickizer Scholarship

David Smith

Mauri Williamson Scholarship for Excellence in Agriculture
Charles O. McGaughey Leadership Award

Amelia Hammond

Honors Research Grant

Matthew Eckerle

Outstanding Undergraduates

Each year the School of Agriculture calls for outstanding undergraduate nominations from each department. For the academic year of 2000/2001 two exceptional students were nominated by their counselors as the departments outstanding students and their nominations were forwarded to the Office of Academic Programs for possible selection as the School of Agricultures competition. The Department of Botany and Plant Pathology is extremely pleased to announce that senior, **Amelia Hammond**, and junior, **Matthew Eckerle**, were selected based on their outstanding academic records, leadership abilities, values, and community service. Congratulations to both of these exceptional students.

Continued from page 25

majors are encouraged to participate in the School of Agriculture's international studies minor program. While the new major is approved for spring 2001, we will be accepting students for the fall of 2001.

We have also made a name change to our "plant science" option. The new name is "**Plant Biology**" and also goes into effect in the fall of 2001. Plant Biology is leading the way in genomics and we wish to capture the interest of more students in this exciting area. This option parallels better with programs at the graduate level.

Our third option in crop protection remains a viable option for students interested in the many aspects of agriculture crop production.

From the Archives....

Here are the names of those individuals featured in this year's archive photos:

1. Mike White

2. Mark Shotwell

3. Ann Légère

4. Charles Tsai

5. Coffee Group: front row - John Bancroft, Richard Lister, John Tuite, and Hannes Schuepp; back row - Matthew Nadakavukaren, Arny Ulstrup, and Roy Curtis

6. Ralph Green, Sue Tolin, Bob Wichmann, and Lynn Martin

7. David Koetje

8. Bob Mitchell

9. Don Scott, Rick Latin, and Paul Pecknold

10. George Cummins

11. Bruce Ashman and Clare Kenaga

12. Janis McFarland

HASTI

Each year, approximately 2,500 Indiana science teachers, administrators, and student teachers attend the Hoosier Association of Science Teachers, Inc. (HASTI) Convention in Indianapolis. The Office of Academic Programs within the School of Agriculture coordinates a display at this convention and the Department of Botany and Plant Pathology is invited to participate in this outreach opportunity.

Teachers are eager for new labs and demos that might be easily incorporated into their existing science curriculum. Our department has demonstrated various computer programs, such as one program developed by Dr. Carole Lembi and Bob Mitchell entitled Chromosome Capers. Discs of the computer software were given away to interested teachers. We have incorporated the use of microscopes and LCD panels into our displays to present labs that teachers can incorporate into their biology curriculum. Gail Ruhl presented the watermolds exercises (now posted in the K-12 educational site on APS net) and for several years Dr. Jody Banks and her graduate student, Ms. Barbara Hass, presented the ever popular "Sex In a Dish" experiment with fern gametophytes (now distributed by Carolina Biological).

Each year we provide new materials for the teachers to take back and incorporate into their classes.

Spring Fest 2000

20,000 people were on campus for this year's Spring Fest activities. Warm temperatures enhanced the fun-filled April weekend highlighting the School of Agriculture's 12 departments with many outreach activities. The Department of Botany and Plant Pathology hosted 10 displays such as "Beautiful Fungi, Detect-A-Weed, Roots R Us, Mushrooms and the Microbial World" plus face painting provided by the Plant and Pest Diagnostic Lab and an area where the clerical staff gave away thousands of helium balloons. The graduate students also hosted a food tent to raise money for travel awards and graduate student activities during the year.

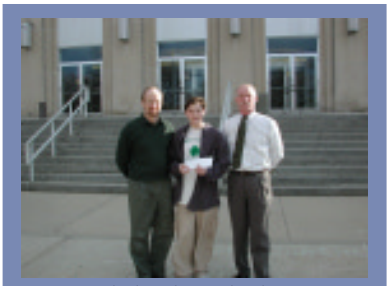
Spring Fest is a weekend of hands-on educational outreach. Coordinator **Gail Ruhl** relies on volunteers to help this event run smoothly. A lot of preparation and behind the scenes work is done before the actual weekend commences. Faculty, staff, and students all worked together for another successful outreach event.

Lafayette Regional Science and Engineering Fair

Purdue University and Eli Lilly and Company Foundation invite science teachers and students in grades 6 through 12 from area counties to attend and participate in the Lafayette Regional Science and Engineering Fair in March each year.

This year two students from West Lafayette High School received the Department of Botany and Plant Pathology's 1st and 2nd place honors in the Plant Science Division and were awarded a cash prize and T-shirts from the department.

Alexander Hertel was awarded first place honors for his project entitled "The Physical Consequences of Standard Unleaded Motor Oil on *Lemna sp.'s* Frond Number, Chloroplast Number, and General Health" and received a $50 cash award.



Dr. Tom Hertel, Alexander Hertel, and Dr. Ray Martyn pose for photo outside of Lilly Hall after Dr. Martyn presented Alexander with his $50 prize.

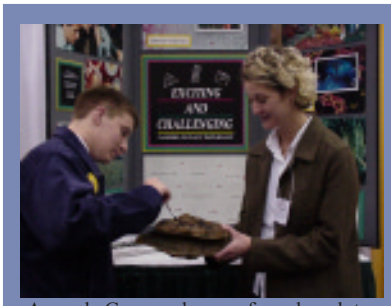
Aya Satoh received second place honors for her project entitled "The Effect of Detergent on the Ability of *Lemna sp* (Duckweed) to Float" and received a $25 cash award.

Dr. Ray Martyn presenting Aya Satoh her $25 prize for her 2nd place project.

Both projects were displayed at Spring Fest. Congratulations to these two outstanding science students and to their teacher, Mr. Marshall Overley.

FFA Convention

The APS Youth Programs Committee, working through the Office of Public Affairs and Education, hosted a booth at the 72nd Annual National FFA Convention and Agricultural Career Show held at the Kentucky Fair and Exposition Center in Louisville, KY, October 25-27, 2000. The booth was represented by a display staffed by **Gail Ruhl, Peggy Sellers,** and graduate student **Amanda Gevens** of Purdue University and Julie Beale of the University of Kentucky.



Amanda Gevens shows a fungal conk to an FFA student

Nearly 60,000 students and instructors attended the convention and many of them stopped to examine the "Yeast at Work" display at the APS booth. The booth also featured display panels that depict the exciting and challenging careers available in the field of plant pathology. Another table featured a variety of eye-catching plant disease specimens.

Summer Research Program

The School of Agriculture sponsors a Summer Research Program each year as a means of recruiting minority undergraduate students across the nation into our graduate education programs. For the past three years **Dr. Ron Coolbaugh** has been the faculty director of this program.

Ron Coolbaugh with three of the students as they prepare for a poster session displaying their research.

In 2000, eight students from different universities participated in the eight-week program. They conducted laboratory and field research with professors and graduate students. At the end of the summer each of these students turned in a written report, gave an oral presentation, and presented their research results at a poster session in the lobby of Lilly Hall. Through the years a number of the participants in this program have chosen Purdue for their graduate program. Perhaps some day we will be able to recruit some of them into faculty positions. The dates for the 2001 Summer Research Program will be June 4 through July 27.

Agriculture Tailgate

The first annual Ag Tailgate brought all the departments in the School of Agriculture together for a wonderful meal, an exciting pep rally, and a time to reflect about Purdue Agriculture. Hundreds of ag alumni had a chance to network with other alumni and current faculty and students. New University President Dr. Martin Jischke and Dean Victor Lechtenberg were the two speakers at this festive homecoming weekend. **Drs. Ray Martyn, Ron Coolbaugh, Carole Lembi,** and **Merrill Ross** represented the Department of Botany and Plant Pathology and spoke with everyone as they mingled through the displays of all the School of Agriculture departments. It was a very successful start to what may become a great tradition.

Ray Martyn, Carole Lembi, and Merrill Ross take a minute to pose for the camera in front of the Botany and Plant Pathology display at the Ag. Tailgate festivities.

What's New With You?

Sarah Wyatt (Ph.D. '95/Major Professor, Nick Carpita): This year I got a faculty position at Ohio University in the Department of Environmental and Plant Biology.

E. Neil Pelletier (Ph.D. '56/Major Professor, Eric Sharvelle): Retired from U.S. Environmental Protection Agency after 17 years in 1997.

Suzanne Canada (Ph.D. '96/Major Professor, Larry Dunkle): Senior Scientist, List Biological Laboratories in the research development/production dept. I purify toxins for use in research and some pharmaceutical applications. I would be willing to talk to graduate students about the transition from academia to industry.

H. Randolph Richards (Ph.D. '60/Major Professors, Jack Shafer and Fred Patterson): Retired from University of Kentucky Cooperative Extension Service, April 30, 2000, after serving as Allen County, KY Extension for Agriculture for 33 years.

Sam Phillips (M.S. 98/Major Professor, Tom Bauman): Thanks for sending me "The Meristem." I really enjoyed the time I spent in Botany and Plant Pathology at Purdue and it is good to keep up on what is going on in the department. I thought I would accept your invitation for updates and fill you in on what I've been doing the past couple of years. After I left Purdue I moved to Evansville, IN and worked for almost two years at the Monsanto corn breeding station. Then in February of 2000, I got the opportunity to transfer to the trait development group of Monsanto in Chesterfield, MO. I am currently working as a research biologist on *Lepidoptera* protected corn and the Yield Guard II gene. It is very exciting work and the knowledge I gained at Purdue is invaluable. Tell Dr. Bauman I said "hello" if you see him.

Edward Schweizer (Ph.D. 62): Just finished reading "The Meristem". Even thought I graduated from the Department in 1961, I still enjoy seeing who's who and what's going on. Also, enjoyed "Alumni News - From Around the Land." I found the info about Marvin and Phyllis Schreiber interesting. Both Dr. Schreiber and I worked for ARS until we retired. I haven't seen him since he retired. Tommy Jordan used to wash pots for me when we were both at Stoneville, MS many years ago. Thanks.

Beginning, January 18, 2000, **Nathan Kemp** was appointed as the Jennings County Extension Educator in Ag and Natural Resources, Leadership and Community Development. Nathan is a 1997 graduate of our undergraduate crop protection program.

I, too, am a Purdue graduate (1965) and my great uncle was Ralph Krieble. I lived in Shoemaker House from 1960-1965, but my Aunt Mary Krieble lived on Grant Street where I would go to study when tests were looming. I never knew Ralph Krieble, but I must have inherited his love of plants. I live in Houston and have a greenhouse 90 feet long where I am constantly propogating plants experimentally. I have seven Montessori Schools so the students really use the greenhouse for their botany and science experiments. Aunt Mary died this past year at 98. She worked at the University Book Store well into her 70's as a salesperson helping new students find what they needed. The next time I am at Purdue, I would definitely like to see the Herbarium. Thanks, **Margaret Grafton Ellison.**

Update on **Dr. Charles Tsai** from Dr. Don Huber.

After Charles retirement from Purdue, he became Head of the Department of Botany at the National Taiwan University in Taipei and an advisor to **Dr. Paul Sun,** Minister of Agriculture (Purdue alumnus and Honorary Doctorate recipient) and advisor to the President. Charles oversaw the design and construction of a new botany building and almost doubling of the professional staff in the Department of Botany. Although heavily committed to his role as a National Advisor, he maintained an active research program on biochemical genetics at the University. He has been recovering from a serious health problem the past year, but visits his son and daughter and family in California over the Christmas break. Charles is back at work at the University now where he is continuing the biochemical genetics research he initiated at Purdue on grain yield predictability systems.

Dear Purdue Alumni and Friends:

On Monday, April 23, 2001, a special informal discussion/seminar session was held at the Department of Botany and Plant Pathology in the Lilly Hall of Life Sciences. Mr. Mezgebou G. Amlak, a former schoolmate, work associate and lifelong friend of Dr. Dagnatchew Yirgou, shared information with those who attended the session. A 1964 graduate of Purdue University with a Ph.D. in plant pathology, Dr. Dan Yirgou, had previously done both his B.S. and M.S. at Purdue University in plant pathology. During his residency at Purdue, he made many friends among the faculty and students in the Purdue community and is fondly remembered by all. He was a distinguished scholar and a very respected person.

Upon returning to his native Ethiopia in 1964, Dan divided his time for several years between lecturing at the Alemaya College of Agriculture and conducting research at the Debre-Zeit research station. He moved on to become the resident research scientist and head of the seed production department of a successful Integrated Rural Development Project (CADU) in Ethiopia. Building on his reputation and commitment to the development of agriculture in the country, Dan assumed the position of National Director of Agricultural Research Institute and served in that position until 1974 when he became the Minister of Agriculture. He was the first person in the history of the country to occupy the post after qualifying in the science of agriculture.

Dr. Dagnatchew "Dan" Yirgou

(photo courtesy of H. Linder)

After such distinguished service to his country and the East Africa region, Dr. Dagantchew Yirgou perished in 1975 in the hands of the Communist regime that came to power in Ethiopia, the details of those last days will appear in the forthcoming biography expected to be published soon.

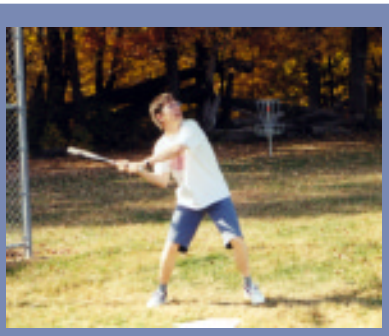
We would like to inform alumni and friends that an endowment is in the process of being established at Purdue by Dan's friends and some alumni from the Departments of Botany and Plant Pathology and Agronomy to honor the memory of Dr. Yirgou. In the near future, a fundraising effort will be launched after the first limited edition of the biography is published here in the U.S. Part of the proceeds from the sale of the book would go the **Dr. Dagnatchew Yiryou Scholarship Fund**. Contributions and donations can be made right away by those who desire to do so. Checks should be made out to Purdue University specifying that the money is intended for the Dr. Dagnatchew Yirgou Scholarship Fund and addressed to the attention of Ms. Linda S. Young, Purdue University, Development Office, 1139 Hovde Hall, Room 130, West Lafayette, IN 47907-1139. For further information please contact Ms. Young at 1-800-677-8780 or fax 1-765-494-7035.

Annual Faculty/Staff vs. Graduate Students Softball Outing Revived

On a beautiful October day, about 60 faculty, staff, students, and spouses met at the Ross Hill's Park in West Lafayette to revive the annual faculty/staff vs. graduate students softball game. It was a very competitive game. The score went back and forth with the graduate students prevailing 22-20. We all took time out for a potluck lunch and a time to recooperate and socialize. Then two teams, comprised of a mixture of students and staff, played four games of volleyball. The weather was perfect and everyone had a great time. Don't tell the graduate students, but the faculty/staff team has been practicing for a rematch in October 2001.

Ray Martyn, Bob Pruitt, Loree Johnston, and **Susan Lolle** talk and relax before getting in line for lunch.

Group of tired softball and volleyball players at the end of the day.



Markus Scholler is up at bat for the faculty/staff team. This was his first time playing softball (ever).

Holiday Party and Giving Heart Angel Tree

The 2000 Annual "Chili Cook-off and Holiday Party" was a huge success. Over 70 people attended this festive luncheon. We had 11 cooks share a pot of their very own special chili. This year each pot of chili was given a number and the cooks remained anonymous until the hungry crowd was finished tasting each chili and sampling all of the holiday treats. After the ballots were counted, the name of each cook was revealed, and Nick Carpita was awarded 1st prize for his "Chipotle Pepper Chili". Once again the winner received the coveted "Botany Mug" filled with chocolates. Thank you to Don Huber, Ruth Brown, Ian Thompson, Gary Nowling, Brett Roberts, Bob Mitchell, Susan Lolle, Merrill Ross, and Ray Martyn for sharing their favorite chili recipe with us. Better luck next year!

The annual "Chili Cook-off" is another opportunity for everyone to gather and get better acquainted and share some holiday cheer.

In the spirit of giving, we once again picked a charitable group to sponsor during the holiday season. This year, the "Giving Heart Angel Tree" was our choice. The Giving Heart Angel Tree has the names of children whose parent(s) are in prison. Most of the time these children do not receive any gifts during the holidays, except from programs such as this. We picked eight children to sponsor. Each child listed just a few things they would like. The Department of Botany and Plant Pathology responded very generously. So much so, that we were able to sponsor three additional children. On Friday, December 15th, Cathrine Pace, enlisted the help of four graduate students, Carrie Lapaire, Joe Flaherty, Fidel Mendez and Claudia Vergara to help deliver these gifts to the very appreciative Boiler Volunteer Network. This organization works with the Salvation Army in distributing the gifts to the children.

Joe Flaherty, Cathrine Pace, Carrie Lapaire, and Fidel Mendez are ready to deliver all the gifts collected for the 11 children the department sponsored through the Giving Heart Angel Tree Holiday Project.

A special thank you to Kathy Anderson, Sheri Akridge, Cathrine Pace, and Pam Mow for coordinating these holiday events and to all those who contributed to help make the holidays more specials for these children.

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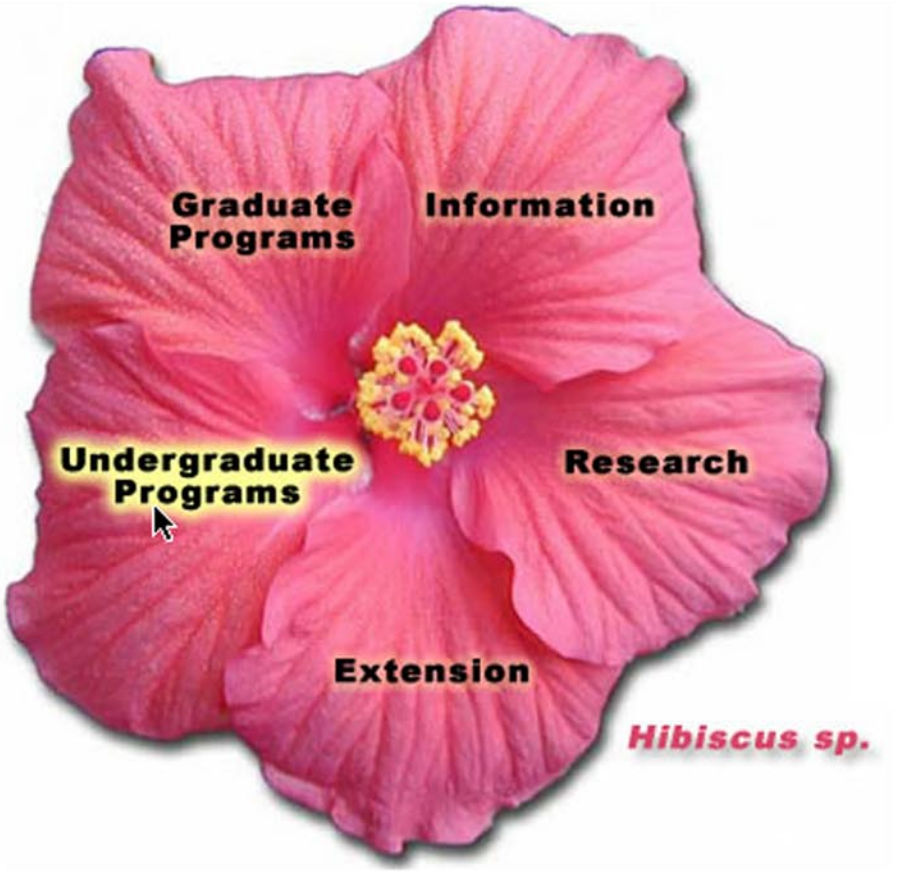
- Plant Pathology
- Weed Science

Research
- Plant Biology
- Plant Pathology
- Weed Science

Special Interest Areas
- Aquatic Plant Management
- Cytochrome P450 Symposium
- Educational Outreach
- Herbaria
- NC-129 Mycotoxins
- USDA-ARS



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