



*A bi-monthly newsletter to faculty/staff/retirees of WSU Long Beach, Mt. Vernon, Puyallup & Vancouver*

### *Message from the Director*

Washington State University President V. Lane Rawlins and CAHE Dean James Zuiches announced plans to build new research laboratories and other facilities at the WSU Mount Vernon Research and Extension Unit last month. Over \$6 million from WSU, Skagit County, and HUD will be invested in facilities and land acquisition. The project could begin as early as this year.

This announcement is consistent with the strategic vision for the Westside research and extension center and units that calls for new laboratories, offices, greenhouses, and basic infrastructure. The faculty and staff have done an outstanding job of working for years in inadequate facilities. The facility was built 55 years ago and scientists are using all available space.

Some of the research at the Mount Vernon REU has statewide application, such as late blight control on potatoes, development of a late blight-resistant potato variety, disease research on vegetable seed crops, and weed control work. However, the main research focus will be on supporting agriculture industries in western Washington, especially the five northwestern Washington counties. The area produces more tulip, daffodil, and iris bulbs than any other region in the nation, 85 percent of the nation's table beet and spinach seed, along with 50 percent of the world's supply of cabbage seed. Local growers produce about 300 million pounds of potatoes and 62 million pounds of raspberries, about 83 percent of the nation's production.

--Jim Kropf

### WEST PROFILE

#### Teaching About Plants—From the Westside

Thirty-two years ago, in February 1971, **Kurt Schekel** joined WSU's Horticulture and Landscape Architecture department in Pullman, and took over the "Greenhouse Construction and Management" class. Kurt has ended up teaching this useful course ever since, most recently from WSU Vancouver. As a longtime member of the department, he also has had many teaching responsibilities including classes focusing on ornamental plants, and the oversight of seminars, special topics like graduate research techniques, and student internships.

Kurt always strives to make his courses relevant to students. In the late 1970's he was assigned to teach "Greenhouse Production". To emphasize the greenhouse crops important for fall and spring production in the Pacific Northwest, Kurt expanded the course into two separate

classes for the fall and spring semesters. In order to teach “Landscape Plant Materials”, he found and catalogued the location of almost every plant growing on the Pullman campus so his students could make on-site observations about plants growing in landscape settings. Kurt moved to WSU Vancouver in 1999 where he currently teaches three different greenhouse courses, “Controlled Environments”, and “Ornamental Plant Production I and II”. He sends lectures over WHETS to students at Pullman as well as Spokane, Wenatchee and the University of Idaho.

Of particular interest to Kurt during his teaching career have been the changes in floral production both within Washington and the U.S. since the early 1970s. Although once grown mainly in the U.S., the majority of many cut flowers such as carnations, mums and roses are now produced out of the country in Central and South America, and in European, African, and Asian countries. These changes together with extensive breeding and selection programs have altered greenhouse production practices, and resulted in significant increases in the production of potted and bedding crops, especially for greenhouse growers in the northern U.S.

Kurt’s main area of research over the last several years has been on the use of growth-regulating chemicals for selected ornamental crops such as bedding plants, perennials and geraniums. There are about one half-dozen chemicals that growers use routinely in the production of many of these crops. The recommended levels of some growth regulators can vary from several parts per million to only a few parts per billion depending on the crop, method of application, timing, etc. His research has helped develop appropriate recommendations for application times and rates so that crop injury is prevented. He has also developed a bioassay technique to determine the presence of Bonzi in re-circulating irrigation water—this compound can affect the growth of geraniums at only a few parts per billion.

One of Kurt’s major accomplishments over the last several years has been the development of the WSU Student Hort. Club. Student members come not only from horticulture, but agricultural education, agricultural economics, and even business. He became advisor in the late 1970’s when the major money-making activity was through apple cider sales. As a result of Kurt’s leadership, the club began to focus on plant sales, mainly poinsettias for Christmas and spring bedding fuchsias, etc. for Mom’s Weekend and Graduation. These sales have generated several thousands of dollars which have been used to provide scholarships to the members, purchase supplies and equipment for the department and college, encourage student travel to horticulture meetings, and support many other activities and projects. The best part of the plant sales is that students are very involved in production of plants throughout the year. This gives them a much more meaningful and practical education in horticulture. Dr. Larry Hiller and Jamie Holden were assigned as advisors when Kurt moved to Vancouver, and the club continues to increase its activities and importance on the WSU campus.

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## PRESENTATIONS/MEETINGS/TRAININGS/INVITATIONS

**Art Antonelli** taught “Basic Entomology and Landscape IPM” over WHETS for **Ray Maleike’s** Landscape Plant Management (Hort. 331) on Nov. 12, and 21. On Dec. 3, Art did Pre-license Training at Bellevue for **Carrie Foss’s** Pesticide Education Program,

and later that day presented “Landscape IPM” at Bellevue for Paul Backman’s Turf and Ornamental Show. Dr. Antonelli gave Pre-licensing Training and Re-certification Training at Vancouver, Jan. 8 for Carrie Foss’s Pesticide Education program, and

presented a similar program for Carrie's Pesticide Training in Tacoma Jan. 15 and Jan. 23. He also did a PCO workshop on "Nuisance Pests" in Kent. Dr. Antonelli presented an all day Master Gardener Workshop in Port Orchard on Jan. 24, and gave several presentations at Carrie's Integrated Plant Health Management Workshop at Puyallup Jan. 29 and 30.

**D. A. Glawe** gave an invited talk "The Powdery Mildew Fungi: Nature's Extreme Parasites," at the Pierce County Master Gardener Foundation Ann. Mtg., Puyallup, Nov. 2.

**Debbie Inglis** gave a presentation in Jan. on "Diseases of Hothouse Tomatoes: Identification and Management" at the 2003 Western Washington Horticultural Assoc. and Northwest Bulb Growers Assoc.'s Conv. in Seatac, WA. Also giving presentations during the meeting: **David Muehleisen**—"Pest Management of the Carrot Rust Fly"; **Brad Goalach**—"Research Update: Controlling Cole Crop Pests through Vegetative Management"; **Renee Prasad**—"Conservation Biological Control in Cole Crops"; **Craig Cogger**—"Cover Crops"; **Tim Miller**—"Weed Control in Peas, Cucumbers, Small Fruits, Vegetable Seed Crops", and "Effect of Postemergence Herbicide Timing on Ornamental Bulbs"; **Tom Wahl**—"China and the WSO: Implications for Pacific Northwest Horticulture"; **Pat Moore**—"Strawberry and Raspberry Varieties and Selections for the Maritime Northwest"; **Gary Chastagner**—"Update on New Fungicides and the Use of Chlorine Dioxide Gas to Control Diseases of Ornamental Bulb Crops"; **Lindsey du Toit and Mike Derie**—"Fungicidal Control of Alternaria Leaf/Pod Spot and White Mold on Cabbage Seed Crops", and "Leaf Spot of Spinach Seed Crops"; **Pete Bristow**—"Small Fruit Disease Update" **Curtis Beus**—"Agritourism - Cultivating Tourism on the Farm"; **Vance Corum**—"What Do Farmers' Market Customers Want?"; **Gary Moulton**—"Hard Cider, Russeted Pears, Cherries and Other Novel

Western Washington Tree Fruit Products"; and **Raymond Jussaume** "Role of Direct Marketing for Producers in Washington State".

**Debbie Inglis** gave two presentations at the 2003 Western Vegetable Disease Conf. in Portland, OR in Jan.: "Research Highlights in 2002 of the WSU Mount Vernon Vegetable Pathology Program" and "WSU Vegetable Pathology Team Report". She also gave a presentation on "Phostrol for Control of Potato Tuber Rots in Storage" at the NuFarm Americans mtg. in Pasco, WA in Dec., and a presentation called "Diseases on Cucurbits in Washington" at the PNW Vegetable Assoc. Ann. Conv. & Trade Show, in Pasco in Nov.

**Debbie Inglis and Babette Gundersen** prepared a poster "Managing Late Blight on Tomato in Western Washington by Organic Practices" for the 2002 Northwest Symposium on Organic and Biologically Intensive Farming: Advances in Research and Education mtg. in Yakima, WA in Oct.

**Lindsey du Toit and Mike Derie** presented research reports: "Fungicidal Control of Alternaria Leaf/Pod Spot and White Mold on Cabbage Seed Crops", and "Leaf Spot of Spinach Seed Crops", at the Western Vegetable Disease Conf. They also presented research updates: "Gray Mold on Onion Seed Crops", and "Bacterial Blight of Carrot Seed Crops", at the 2003 Ann. Mtg. of the Columbia Basin Vegetable Seed Assoc. in Moses Lake, WA on Jan. 14.

**Lindsey du Toit and Tim Miller** gave research presentations on various pathology and weed science research projects at the Ann. Mtg. of the Puget Sound Seed Growers' Assoc. in Mount Vernon, WA on Nov. 20.

**Lindsey du Toit** gave two workshops at the Ann. Mtg. of the Washington Tilth Producers' Assoc. in Yakima, WA on Nov. 9-11: "Management of Vegetable Diseases Prevalent in the Pacific Northwest", and "Systematic Approach to Diagnosis of Plant Problems". On Nov. 4, Lindsey was invited

to present a seminar to the Dept. of Plant Path. at Michigan State Univ. in Lansing, MI. The seminar was titled "Washington's Small-Seeded Vegetable Seed Industry: Seeds Sown and Harvests Reaped". She also gave two presentations at the Ann. Short Course of the Columbia Basin Crop Consultants' Assoc. in Moses Lake on Jan. 16. The presentations were titled: "Diagnosing Plant Ailments", and "Columbia Basin Vegetable Seed Diseases".

On Jan. 10 the first mtg. of the Pacific Northwest Fungi Project was held. This effort, currently being organized by the

Mycology Program at the Puyallup REC and collaborators throughout the region, is a new project to inventory the fungi of the PNW. Attendees included mycologists from the WSU Pullman Campus, the University of Washington, Western Washington University, and the Pacific Forestry Centre of the Canadian Forest Service. **Dean Glawe** would like to thank **Vernene Scheurer** for her excellent technical assistance, which enabled the Puyallup Center's Chicon Room to be the primary location in this multi-institutional video conf.

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## PUBLICATIONS

Burrows, Colleen and **Patrick P. Moore**. 2002. Genotype X Environment Effects on Raspberry Fruit Quality. *Acta Hort.* 585:467-474.

**du Toit, L.J., and Derie, M.L.** 2003. Cabbage seed crop: Evaluation of fungicides for control of black spot and ring spot of cabbage, 2000-01. *Fungicide & Nematicide Tests* 58: *in press*.

**du Toit, L.J., and Derie, M.L.** 2003. Cabbage seed crop: Evaluation of fungicides for control of black spot and ring spot of cabbage, 2001-02. *Fungicide & Nematicide Tests* 58: *in press*.

**du Toit, L.J., and Derie, M.L.** 2003. Cabbage seed crop: Evaluation of fungicides for control of white mold and black spot of cabbage, 2001-02. *Fungicide & Nematicide Tests* 58: *in press*.

Costanigro, M., **du Toit, L.J.**, Folwell, R.J., and Pelter, G.Q. 2002. Economic implications of a molecular seed assay for detection of seedborne *Botrytis* spp. of onion. Pages 127-130, In: Proc. National Allium Research Conf., 12-14 Dec. 2002, Pasco, WA.

**du Toit, L.J., Derie, M.L.,** and Pelter, G.Q. 2002. *Botrytis* spp. associated with onion seed crops in Washington State. Pages 47-56, In: Proc. National Allium Research Conf., 12-14 Dec. 2002, Pasco, WA.

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of seed carrots. Proc. 2002 Ann. Conv. Pacific Northwest Veg. Assoc., 21-22 Nov. 2002, Pasco, WA.

**du Toit, L.J., Derie, M.L.,** and Pelter, G.Q. 2002. Gray mold and onion seed ... A research update. Proc. 2002 Ann. Conv. Pacific Northwest Veg. Assoc., 21-22 Nov. 2002, Pasco, WA.

Finn, C., H. Swartz, **P.P. Moore**, J.R. Ballington and C. Kempler. 2002. Use of 58 *Rubus* Species in Four North American Breeding Programs-Breeders Notes. *Acta Hort.* 585:113-120.

**Inglis, D., and Gundersen, B.** 2003. Evaluation of seed, in-furrow and foliar treatments for control of *Rhizoctonia* on potato, 2002. *Fungicide and Nematicide Tests* 58: V00302.

**Inglis, D., Gundersen, B.,** Novy, R., and Corsini, D. 2003. Evaluation of potato germplasm for resistance to late blight, 2002. *Biological and Cultural Tests for Control of Plant Diseases* 18:PT00602.

**Inglis, D. A., Gundersen, B.,** and Myers, J. 2003. Using improved host resistance to control late blight on tomato, *Fungicide and Nematicide Tests* 58:V00202.

**Miller, T.W.** 2002. Diquat used as a preharvest desiccant affects seed germination of spinach, table beet, and coriander. *HortScience* 37(7):1032-1034.

**Moore, P. P.,** C. Burrows, J. Fellman and D.S. Mattinson. 2002. Genotype X

- Environment Variation in Raspberry Fruit Aroma Volatiles. *Acta Hort.* 585:511-516.
- Okubara, P.A. **Inglis, D.A.** Muehlbauer, F.J. Coyne, C.J. 2002. A novel RAPD marker linked to the Fusarium wilt race 5 resistance gene (*Fwf*) in *Pisum sativum*. *Pisum Genetics* 34:6-8.
- Stark, J.D.** and Banks, J.E. 2003. Population-level effects of pesticides and other toxicants on arthropods. *Ann. Rev. Entomol.* 48:505-19.
- Stark, J.D.** 2002. Neem, Surfactants, and Pirimor: Increasing the effectiveness of Neem for aphid control. Pp. 119-122. *Proc. of the World Neem Conf.* (May 19-21 May 1999), University of British Columbia Vancouver, Canada (ed. H.M. Behl), Publisher: Neem Fdn., Mumbai, India, 2002.
- Stark J.D.** 2002. Demography of sublethal insecticide effects and their impact on biological control efficacy. *Proc. of the Third California Conference on Biological Control.* Davis, California, Aug. 2002. Ed. Mark Hoddle.3: 95-99.
- Stark J.D, Bamfo, S.** 2002. Population-level outcomes of differential susceptibility among life stages of the aphid parasitoid, *Diaeretiella rapae* to pesticides. *Proc. of the First International Symposium of Biological Control of Arthropods.* Jan. 2002.
- Vargas, R.I., M. Ramadan, T. Hussain, N. Mochizuki, R. Bautista and **J.D. Stark.** 2002. Comparisons of demographic parameters: Six parasitoids (Hymenoptera: Braconidae) and their fruit fly (Diptera: Tephritidae) hosts. *Biological Control* 25: 30-40.
- Wood, B. and **Stark, J.D.** 2002. Acute toxicity of drainage ditch water from Washington State cranberry growing region to *Daphnia pulex* in laboratory bioassays. *Ecotoxicology and Environmental Safety* 53:273-280.

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## PEOPLE

**Carol Miles** serves as the 1st Vice President of the Western Washington Horticulture Association for 2003 (2004 annual meeting).

**Rick Olexick**, Nursery Worker, was recognized as this year's *Classified Staff Employee* of the year at WSU Puyallup. Rick was chosen for his outstanding work as groundskeeper at the Puyallup campus. The evidence of Rick's dedication and effort draws many compliments from visitors, and gives employees a beautiful work environment as well as an educational one. With the assistance of the horticulture faculty, Rick identified all of the shrubs and trees on the campus and put identification markers with their botanical and common names into place. Congratulations and thank you, Rick.

The WSU Pullman Horticulture Club presented **Dr. Kurt Schekel** with an award for all the hard work that he did as the club's advisor before moving to Vancouver. It was because of his dedication and insight

that the club is so successful. Kurt was instrumental in laying the groundwork for plant sales, which led to scholarships for active members. Last year's awards totaled about \$10,000. As a token of their thanks, the club presented Kurt with a drawing of a living grape vine bonsai that depicted one that they ordered; it will be delivered to him at a later date. They also gave him a bottle of dry red champagne from Camas Wineries located in Moscow, ID. This winery is one of only six in the nation that produces this particular champagne.

**Shirley Graves** has joined the Mycology Program at the Puyallup Research and Extension Center as a volunteer. Shirley is familiar to many at the Center because she is a long-time member and former President of the Pierce County Master Gardeners. She is providing much-appreciated assistance in cataloging the 300+ powdery mildew specimens contributed to the Program during 2002 by Master Gardeners throughout the state.

Welcome to **Pablo Hernandez-Perez**, a new MS student in the Department of Plant Pathology, who is doing his thesis research on seedborne aspects of two leaf spot fungi of spinach, *Stemphylium botryosum* and *Cladosporium variabile*. Lindsey du Toit is the chair of Pablo's thesis committee, and Dean Glawe is also serving on Pablo's thesis

committee. Pablo received a 1/4-time graduate research assistantship and tuition waiver from the Department of Plant Pathology for spring semester of 2003, to match the partial funding Pablo has received for his thesis project from the Robert MacDonald Vegetable Seed Memorial Fund.

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## GRANTS

The following grants were received from the Washington State Commission for Pesticide Registration:

**L.J. du Toit and M.L. Derie:** 1) Biology and management of leaf spot of spinach seed crops in western Washington. \$12,920; 2) Fungicidal control of neck rot of onion seed crops in Washington. \$7,500; 3) The importance and management of seedborne *Botrytis* causing neck rot of onion. \$7,312.

**L.J. du Toit and T.W. Miller.** Efficacy of mustard biofumigants for management of weeds and Fusarium wilt in spinach seed crops in western Washington. \$10,530.

The following grants were received from the Columbia Basin Vegetable Seed Association:

**L.J. du Toit and M.L. Derie.** Continued evaluation of the biology, epidemiology, and management of *Botrytis* neck rot/scape blight of onion seed crops. \$10,500; **H. Pappu and L.J. du Toit.** Survey of Washington onion and onion seed crops for *Iris yellow spot virus*, a new and potentially devastating disease of onion in the Pacific Northwest. \$3,600.

**L. M. Carris, J. D. Rogers, and D. A. Glawe.** \$24,000. "Pilot project to develop an online database for specimens in the Mycological Herbarium at Washington State University," National Fungus Collection, USDA-ARS.

**H. Pappu and L.J. du Toit.** Survey of Washington onion and onion seed crops for *Iris yellow spot virus*, a new and potentially devastating disease of onion in the Pacific Northwest. \$4,500.

**Patrick P. Moore** received the following grants: Genetic Improvement of Strawberry. Washington Strawberry Commission. \$36,000; Red Raspberry Breeding, Genetics, and Clone Evaluation. Washington Red Raspberry Commission. \$48,000; **Martin Nicholson.** Advanced testing of WSU Raspberry Selections, Vancouver, Washington Red Raspberry Commission. \$1,000.

**Patrick P. Moore, Gary Moulton.** Evaluation of Blueberries at WSU Mount Vernon, Washington Blueberry Commission. \$8,000.

**R. Boydston, J. Yenish, T.W. Miller.** Efficacy and crop tolerance of flumioxazin and sulfentrazone for weed control in green (succulent) pea and dry pea, lentil, and chickpea production, \$19,000.

**T.W. Miller:** 1) Testing of halosulfuron, dimethenamid-p, s-metolachlor, and clomazone in cucurbits, \$4,500; 2) Perennial Weed Control in blueberry, \$3,500; 3) Testing of postemergence herbicides for use in Apiaceae seed crops, \$1,500.

The WSU Small Farm Program has received a one-year, \$14,195 grant from WSDA's Small Farm & Direct Marketing Program to conduct four Rapid Market Assessments, host two farmers' market training seminars, and develop sessions for the Washington State Farmers Market Assoc (WSFMA) Ann Conf. The PI is **Vance Corum**, with support from **Marcy Ostrom** and collaboration from the WSFMA and the Food and Farm Connections Team, which provided a \$1,500 match.

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## GENERAL ANNOUNCEMENTS

The 5<sup>th</sup> Annual Small Fruit Grower's Workshop sponsored by the WSU Vancouver REU will be held on Wednesday, March 19, 2003 at the Vancouver campus in room SS129-130 from 8:00am to 3:00pm. Preceding the workshop will be the Washington Red Raspberry Commission meeting held in the same location. Notices and registration forms will be mailed out soon. Contact **Vicki Darnell**, [vdarnell@wsu.edu](mailto:vdarnell@wsu.edu), with any questions.

**Dr. Richard Carkner** is a co-author of *Ag Help Wanted*, a new unique book designed to help farmers, ranchers and others in agriculture production understand and address the human complexities and regulatory requirements of managing a work force. *Ag Help Wanted* is a collaborative effort by land grant university educators from seven states and one Canadian province. The Western Farm Management Extension Committee in Laramie, WY is the publisher. Single copy price is \$25, with discounts for order of ten or more. Order information is available at [www.AgHelpWanted.org](http://www.AgHelpWanted.org).

Six WSU Puyallup scientists spoke about their research to students at Emerald Ridge High School on Wednesday, January 29, as part of the school's newly developed Science and Technology Week. This event involves all students working on science or technology projects and experiments, including learning about diseases, energy development, and transportation issues. Among those participating were **Rita Hummel**, "Horticulture, Scientific Method"; **Jon Johnson**, "Forestry for the 21st

Century"; **John Stark**, "Ecotoxicology"; **Gary Chastagner**, "Cloning in Trees and Plants"; **Craig Cogger**, "Soil Types and Additives for Improved Growing"; and **Vernene Scheurer**, "Computer Viruses, Worms and Hoaxes".

**Vernene Scheurer**, along with retirees such as **Darrell and Betty Barstow**, and **Mary Crandal** spent three days serving as community mentors in the classroom, helping with various projects for the week. This was a wonderful opportunity for WSU to be involved in the community and to share research projects at WSU Puyallup with students as they try to decide what careers they may want to explore.

The WSU Puyallup Plant and Insect Diagnostic Laboratory Annual Report was recently completed. This report details activity conducted at the Puyallup laboratory in 2002 including information on the number and type (insect identification or plant problems) of samples submitted, a list of specialists assisting with diagnosis of the samples (THANK YOU!!), as well as other data on the origin, quality, submission method of the samples. A Host Pathogen Index for all samples infected with a pathogenic disease is also included with the report. If you would like a copy, please call or email **Jenny Glass** (253-445-4582 or [glass@puyallup.wsu.edu](mailto:glass@puyallup.wsu.edu)). We also hope to post a copy of the report on our Plant Diagnostic Laboratory web page that, with **Ron Perrine's** help, we are currently working to improve and upgrade (more on this later).

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