

Breeding with Molecular Markers

February 10 & 11, 2004

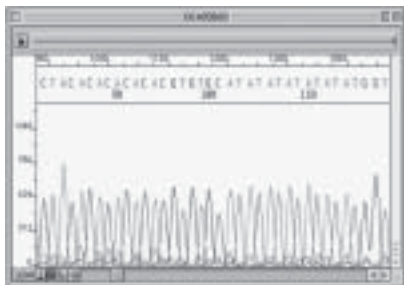
UC Davis



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PROFESSIONAL AND CONTINUING EDUCATION

Molecular geneticists have been developing DNA-based molecular markers in plants since the early 1980's. Although useful for research, initial technologies were too expensive and inconvenient to use in traditional breeding programs. In the past decade, technology has advanced so that these tools can be integrated in a cost-effective way to accelerate breeding programs for most crops. This course will focus on strategies for using molecular tools in different breeding schemes and crops. It is aimed at professionals who are directly or indirectly involved in plant breeding and germplasm improvement.



What you'll learn

Learn what technologies are currently available for different crops. Leading industry and university experts will guide participants on how, when and what types of molecular markers should be used in breeding programs, including marker-assisted selection, accelerated backcrossing, and quantitative trait loci. New methods will be described for mapping and introducing quantitative traits into germplasm and current software to manipulate data in breeding programs will be demonstrated in hands-on sessions. New high-throughput technologies and their implications in breeding will be discussed.

Who should attend

This course is aimed at professional plant breeders who want to learn when and how molecular tools can be integrated in their breeding programs. It is also an opportunity for breeders who are already using these tools to expand their knowledge of new strategies and technologies and for laboratory personnel to appreciate how the marker data that they generate are applied in breeding programs.

Date, time and location

February 10 & 11: Tues., 8:30 a.m.-6 p.m. & Wed., 8:30 a.m.-5 p.m.
AGR room, Buehler Alumni and Visitors Center, Old Davis Rd, UC Davis.

Enrollment fee

\$550 includes two lunches, one social and course materials. Enroll in section 033AGR100.

GENERAL INFORMATION

Tax deductibility of education expenses

Expenses of education — including registration fees, travel, meals and lodging — may be deductible if they maintain or improve professional skills or meet the express requirement of an individual's employer.

If your plans change

Refunds, less a \$20 processing fee, will be granted if requested at least one week prior to the course. At that time, you can also discuss transferring your enrollment to another program or sending a substitute.

Continuing education units

Continuing education units are a nationally recognized means of recording non-credit study. They are accepted by many employers as evidence of a serious commitment to career advancement and professional competence.

For more information

For more detailed information, call (530) 757-8899 or email aginfo@unexmail.ucdavis.edu.



UC Davis Extension reserves the right to cancel or reschedule courses and to change instructors. If a course is canceled or rescheduled, you may request an official transfer to another course or a refund. Every reasonable effort will be made to notify enrollees of changes or cancellations.

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Not produced at state expense. UC Davis Extension is a self-supporting, nonprofit organization funded by course fees, grants and contracts.

Program Agenda

Tuesday, February 10

- 8 a.m. Registration, coffee and refreshments
- 8:30 a.m. Welcome and course organization
A. Van Deynze, Seed Biotechnology Center, University of California, Davis
- 8:35 a.m. Types of DNA markers
A. Van Deynze
- 9:35 a.m. Quantitative trait loci
R. Doerge, Department of Statistics, Purdue University, West Lafayette, IN
- 10:35 a.m. **BREAK**
- 11 a.m. Marker-assisted backcrossing
G. Hookstra, Ricetec, Alvin, TX
- Noon **LUNCH**
- 1 p.m. Variety identification and hybridity
G. Hookstra
- 2 p.m. Marker-assisted selection
J. Dubcovsky, Department of Agronomy and Range Science, University of California, Davis
- 3 p.m. **BREAK**
- 3:30 p.m. Association studies with molecular markers
D. Neale, Institute of Forest Genetics, USDA Forest Service, Davis, CA
- 4:30 p.m. Q & As on today's topics
- 5 p.m. Social hour and light refreshments
- 6 p.m. **ADJOURN/Dinner on your own**

Wednesday, February 11

- 8 a.m. Coffee and refreshments
- 8:30 a.m. Announcements
- 8:35 a.m. Software for managing molecular markers
A. Van Deynze
E. Paul, Geneflow Inc., Alexandria, VA
M. Truco, Department of Vegetable Crops, University of California, Davis
- 9:45 a.m. **BREAK**/Group 2 returns from computer lab
- 10 a.m. **Breakout Sessions**—topics in breakout sessions are repeated so everyone can participate
Group 1 moves to computer lab
- 10:15 a.m. Group 1—Geneflow hands-on demonstration
E. Paul
Group 2—The effect of population structure on linkage/
Parental selection with molecular markers
D. Butruille, Monsanto Co., St. Louis, MO
- Noon **LUNCH**/Group 1 returns from computer lab
- 1 p.m. **Breakout Sessions**
Group 2 moves to computer lab
- 1:15 p.m. Group 1—The effect of population structure on linkage/ Parental selection with molecular markers
D. Butruille
Group 2— Geneflow hands-on demonstration
E. Paul
- 3 p.m. **BREAK**/Group 2 returns from computer lab
- 3:20 p.m. Intermicrosatellite Markers
B. Landry, DNALandmarks, St Jean-de-Richelieu, Canada
- 4:05 p.m. Q & As
- 4:15 p.m. **ADJOURN**

ENROLLING IS EASY!

BY MAIL complete this form and send it to the Registration Office, UC Davis Extension, University of California, 1333 Research Park Drive, Davis, CA 95616-4852.
BY PHONE call toll free (800) 752-0881. From Davis or Woodland call 757-8777.
Please have your Visa, MasterCard, American Express or Discover account number handy.

BY FAX to (530) 757-8558. Be sure to include a complete enrollment form along with credit card information or a company purchase order.
IN PERSON at our Registration Office, 8:30 a.m.-4:30 p.m., 1333 Research Park Drive, Davis.
ONLINE at www.extension.ucdavis.edu.

1. YES! Please enroll me in

Breeding with Molecular Markers/February 10 & 11/section 033AGR100/\$550

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3. Payment information:

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