

Short course -Programming and computer algorithms with focus on genomic selection in animal breeding

May 15-June 5, Athens, GA

Schedule

Week 1. May 15-18

Introduction to programming in Fortran 95/2003

Week 2. May 21-25

Advance Programming in Fortran 95/2005

Computer algorithms useful in animal breeding

Efficient creation and solving of mixed model equations

Week 3. May 28-June 1

Monday

Introduction to BLUPF90 family of programs

Properties of different algorithms for parameter estimation

Tuesday

Data simulation (including genomics)

Methods based on SNP estimation (BLUP_SNP and BayesA etc.)

Efficient solving of equations with SNP effects

Wednesday

Creation and handling of genomic relationship matrices with preGSf90

GBLUP using blupf90

Genetic parameter estimation from genomic relationships (GREML) using remlf90 or gibbs1f90

Thursday

Single-step methodology for joint analyses of phenotypic, pedigree and genomic data using the BLUPF90 suite of programs

Friday

Advanced topics in genomic evaluation (Quality control, Approximate accuracies, Genome wide associations, Multibreed analyzes)

Week 4. May-4-5

Finish for students taking credit

Instructors

Ignacy Misztal

Shogo Tsuruta

Week 3 will also include guest speakers:

Ignacio Aguilar – INIA, Uruguay

Andres Legarra, INRA, France

Bill Muir, Purdue

Zulma Vitezica, ENSAT, France

Attendance

The course can be attended in full or partially. Those familiar with basic of Fortran 95 can skip Week 1. Weeks 3 will involve very limited programming and can thus be attended only by those interested in application programs. The attendance in Weeks 1-2 is limited to 20 and in Week 3-4 is limited to 24. Those attending for 3 weeks will have priority.

As of March 16, Course is overbooked for Weeks 1-2. Space is still available for week 3, when the attendance limit has been increased to 50.

Fees

The fees will be the same regardless of the number of weeks attended.

Industry - \$1000

Academic - \$600

Graduate student - \$300

No fee for US students sponsored by distance education grant AG*IDEA

Fees for current academic collaborators (joint paper with UGA) optional

Fees for sponsors optional

Course location and times

The course will be taught at the Animal Science Complex, 425 River Road, Athens, GA, 30602. See www.ads.uga.edu.

Lectures will be from 9 to 12 and the lab from 13 to 17. The lab may be shortened during the Memorial day (May 28).

Computers

Local computers are available to those enrolled during weeks 1-2. Those who participate during week 3 will require own laptops.

Credit

Formal credit can be obtained by graduate students from the Southern Teaching Consortium. Please ask for details.

Logistics

The closest airport to Athens is in Atlanta. A local hotel provides accommodation at < \$200/week.

The sign-up material will be available in February. For more information please contact Susan Bradley (susanb@uga.edu)