

Name: Katrien M. Devos

Rank: Associate Professor

% Salary Budgeted: Instr. 0.25 Res. 0.50 Ext. Outreach



Program Overview:

The overall theme of my research is comparative genomics with specific applications to the cereal crops wheat and millets (particularly pearl millet and finger millet). Until recently, most efforts have been focused on determining the structural relationship between diverse genomes. Whole-genome structural analyses have demonstrated that gene orders are highly conserved between species within the grass family. However, these studies have also raised new questions on the precise organization of genes and repeats in large-genome species such as wheat, the mechanisms that drive genome evolution and the functional conservation of genes. Each of these areas is being addressed in my lab, using either wheat or pearl millet as primary study objects.

Education:

BSc. State University Ghent, Belgium 1984
(Obtained with Great Distinction)
LicSc. State University Ghent, Belgium 1986
(Obtained with The Greatest Distinction)
PhD. State University Ghent, Belgium 1992
(Obtained with The Greatest Distinction and Congratulations of the Jury)

Employment:

1986-1987 Bursar IWONL, Dept. of Physiological Chemistry,
State University Ghent, Belgium
1987-1989 Research Assistant, Dept. of Physiological Chemistry,
State University Ghent, Belgium
1989-1992 SO, IPSR/Cambridge Laboratory, Cambridge/Norwich
1992-1994 HSO, Post-doc, Cambridge Laboratory, Norwich
1994-1996 HSO/Band 6 Leader of pearl millet project, John Innes Centre, Norwich
1996-2001 Project Leader (BBSRC fellow; Band 5-4), Leading research programs on wheat,
millet and cereal comparative genetics, John Innes Centre, Norwich
2001-2002 Project Leader (Band 4), Leading research programs on wheat, millet and cereal
comparative genetics, John Innes Centre, Norwich
2003-current Associate Professor, Dept. of Crop and Soil Sciences and Dept. of Plant Biology,
University of Georgia, Athens

Membership in Professional Societies:

The Belgian Biochemical and Molecular Biology Society
The British Genetical Society
Crop Science Society of America

Awards:

BBSRC Fellowship (1996-2001)
STAFF Visiting Research Fellowship, Japan (Jan - March 1998)
ISIS Fellowship (Dec. 2000 - March 2001)

Contributions to Teaching:

(1) Undergraduate

| Course | Title | Semester | Year | Avg. # of Students | |
|-----------------------|-------|-----------------|------|--------------------|--|
| Credit hours | | | | | |
| PBIO/BIO/((CRSS) 3020 | | Genomic Biology | Fall | Starting | |
| 2005 | 21 | 3 | | | |

(2) Graduate

| Course | Title | Semester | Year | Avg. # of Students | |
|--------------|--|----------|---------------|--------------------|---|
| Credit hours | | | | | |
| PBIO 8820 | Plant Physiology Seminar* | Spring | starting 2005 | 10 | 1 |
| CRSS 8210 | Special Problems in Crop and Soil Sciences | Fall | 2005 | 3 | 1 |
| PBIO 8970 | Special Topics in Research (25%) | Fall | 2005 | 3 | 1 |

* 2005 Topic: Genome analysis and Comparative Genomics

2006 Topic: Genes and their impact

(3) Service on Graduate Advisory Committees

Major Professor:

- Srinivasachary (PhD, University of East Anglia, UK); Graduated Fall 2005
- Vinod Jakkula (PhD, Dept. of Crop and Soil Sciences); Expected graduation year: 2009
- Chris Papadopoulos (PhD, Dept. of Crop and Soil Sciences); Expected graduation year: 2010

Committee member:

- Renyi Liu (PhD, Dept. of Genetics); Graduated Fall 2005
- Jennifer Yates (PhD, Dept. of Crop and Soil Sciences); Graduated Summer 2006
- Dawn Holligan (PhD, Dept. of Plant Biology); Expected graduation year: 2008
- Heqiang Huo (PhD, Dept. of Horticulture); Expected graduation year: 2009
- Jinghua Shi (PhD, Dept. of Plant Biology); Expected graduation year: 2009
- Adam Heesacker (MSc, Dept. of Crop and Soil Sciences); Expected graduation: Fall 2006

Contributions to Research and Other Creative Activities (since 2003):

No. of books: -

No. of book chapters: 5

No. of refereed papers/by journal:

- Annals of Botany: 1
- Current Opinion in Plant Biology: 1
- Euphytica: 1
- Genetics: 1
- Genome Research: 1
- Planta: 1
- Plant Molecular Biology: 1
- Proceedings of the National Academy of Sciences: 2
- Theoretical and Applied Genetics: 3

No. of proceedings papers: 1

No. of abstracts: 10

No. of Patents/PVPs

Other activities: Number of seminars/presentations given: 14

Sources of Grants/amounts (since 2003):

| Period | Title | Organization |
|---------------------|--|---|
| Amount | | |
| 03/01/02 – 02/28/03 | No-cost extension until 09/30/04 diversity in finger millet (<i>Eleusine coracana</i>). | Assessment of genetic USAID |
| \$93,366(PI) | | |
| 05/01/02 – 04/30/06 | No-cost extension until 04/30/07 yielding disease resistant and drought tolerant genotypes of finger millet (<i>Eleusine coracana</i> Gaertn). | Development of high \$199,938(Co-PI) |
| 01/01/05 – 12/31/05 | Training of a developing country scientist in the generation and mapping of microsatellite markers in finger millet. | Kirkhouse Trust |
| \$18,000(PI) | | |
| 06/01/05 – 05/31/08 | Characterizing the wheat genome by random BAC and sample sequencing. NSF – Plant Genome | \$269,432(Co-PI) |
| 08/16/05 – 07/15/09 | Comparative and functional analysis of genes affecting plant height Hi-Bred International, Inc. (Generation Challenge Program) | Pioneer \$74,000(PI) |
| 01/01/06 – 12/31/06 | Training of a developing country scientist in the application of SSR markers to assess the biodiversity in a sample of cultivated and wild finger millet accessions | Kirkhouse Trust |
| \$18,000(PI) | | |
| 08/01/06 – 07/31/08 | A physical map and sample sequencing of the homoeologous group-3 chromosomes of wheat | USDA-NRI \$89,411(Co-PI) |

Contributions to Professional Service:

University/College/Department:

2003 – current: Advisory Committee, Plant Center

2004 – current: Greenhouse Committee (Dept. of Crop & Soil Sciences)

2004 – current: Curriculum Committee (Dept. of Crop & Soil Sciences)

2004 – current: Graduate Student Admissions Committee (Dept. of Plant Biology)

2004 – current: Steering Committee Applied Biotech Major (CAES)

Other Professional Societies:

- Associate Editor: The Plant Genome (2006 – current)

- Curator: Wheat Gene Catalogue (1998 – current)

- Administrator (selection of awardees and fund allocation) of funds (\$10,000) donated by the Rockefeller Foundation for students and scientists from developing countries to attend the yearly Plant and Animal Genome Meeting (2004 – current)

Goals for the Next Five Years:

Research over the next five years will be focused on enhancing our understanding on how genomes evolve. This will be done in part by sequence analysis of the wheat genome, the detailed study of chromosomal rearrangements in cereals and comparative functional analysis of genes involved in plant height. I will also initiate a research program in either turfgrass or switchgrass, depending on funding, which will foster collaborations with other faculty in CAES.