

CURRICULUM VITA

Khidir W. Hilu
Professor of Biology
2019

PROFESSIONAL ADDRESS:

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EDUCATION:

Ph.D. in Botany (Biosystematics), 1976, University of Illinois, Champaign-Urbana; title, "Evolutionary Studies in *Eleusine* Gaertn. (Gramineae)"; J. M. J. de Wet, advisor.

M.S. in Botany (Taxonomy), 1971, University of Baghdad, Iraq; title, "Cytotaxonomy of Some Taxa of the Zygophyllaceae in Iraq"; Augustin Murin, advisor.

B.S. in Botany, 1966, University of Baghdad, Iraq.

PROFESSIONAL POSITIONS:

Professor Emeritus, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg (1995 - 2017); Positions held: Director of the Massey Herbarium at Virginia Tech (2008-present); member of Genetics, Bioinformatics and Computational Biology (GBCB), the Molecular Plant Sciences Inter-department, and member of the inter-department of Molecular Plant Sciences and the Fralin Center at Virginia Tech.

Associate Professor, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg (May, 1986 - 1995)

Assistant Professor, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg (September, 1981 - May, 1986)

Research Associate and Assistant Curator of the Crop Evolution Laboratory Herbarium, Department of Agronomy, University of Illinois, Urbana-Champaign (August, 1979-August, 1981)

Postgraduate Biosystematist, Department of Botany and Plant Sciences, University of California, Riverside (July, 1978 - August, 1979)

Assistant Professor, one year sabbatical replacement, Department of Biology, Oklahoma City University (August, 1977 - July, 1978)

Assistant Professor, Department of Biology, University of Sulaimaniya, Iraq (August, 1976 - January, 1977)

Postgraduate Teaching Assistant and Assistant Curator of College of Sciences Herbarium, Department of Botany, University of Baghdad, Iraq. Full time appointment (August, 1966 - January, 1968); part time appointment (February, 1968 - December, 1971)

ADDITIONAL PROFESSIONAL EXPERIENCE:

1995-current. Collaborative research on the evolution, biogeography and systematics of canary grasses with Dr. Riccardo Baldini, Dipartimento di Biologia Evoluzionistica, Università degli Studi.

2004-2012. Collaborative research with Dr. Diego Breviario of the Istituto Biologia e Biotecnologia Agraria IBBA-CNR, Milan, Italy, working on using the tubulins genes in molecular phylogenetics at the population and species levels.

December 15-22, 2010, served as an external examiner for a doctoral defense at the University of Gothenburg, Sweden.

Six weeks of Spring 1999 spent on a Fulbright scholarship to help establish a molecular biology laboratory at the department of biology, university of Bin Zuhor, Morocco, and to train students and faculty in techniques useful in DNA fingerprinting.

Fall 1986 to 1998, conducted collaborative, funded research with Egerton University, Kenya, on the molecular genetics of millet grasses to assess the genetic diversity and gene pool organization of domesticated and wild species. Conducted and supervised the research at both Virginia Tech and Egerton University.

Spring 1998, working toward establishing a molecular biology laboratory at Egerton University, Kenya, for use in the millet genetic and breeding research program.

November 1990-July 1991, spent in a sabbatical at the Plant Industry Division, CSIRO, Australia to study cloning and sequencing ribosomal RNA genes in grasses.

February 1990, invited scientist at the Department of Genetics, Cairo University.

March 1990, invited scientist at the Department of Genetics, Estaco Agronomica National, Oeiras, Portugal.

February-March 1986, led a field trip in Kenya to collect seeds of wild species of *Eleusine*, trip sponsored by The International Board of Plant Genetics Resources and included the Kenyan National Germplasm Center.

September 1985, spent in research at the Royal Botanic Gardens, Kew, England, and East African Herbarium, Nairobi, Kenya.

September-October 1984, spent as a consultant for The International Board for Plant Genetic Resources to study the germplasm resources and collect seed material in the Algerian oases.

HONORS, AWARDS AND RECOGNITIONS:

2018. Awarded the College of Science Award for Teaching Excellence

2017. Nominated by the college for the Wine Teaching Award

2017. Nominated by the College for the Alumni Teaching Award

2014. Nominated as Favored Teacher at Virginia Tech

- 2010 Served as external examiner (Opponent) for a doctoral defense at Gothenburg University, Sweden
- 2007 Outstanding Teaching Award, Department of Biological Sciences, Virginia Tech.
- 2003 Bailey Award nomination for a talk presented at the 2003 APRES meeting.
- 2001 Selected as member of the editorial board for the South American Journal Kurtziana.

1998 Fulbright Scholarship award to spend three months in Morocco to help establish a molecular laboratory and conduct molecular genetics work on the endemic tree Argan.

1996 The J. Shelton Horsley Research Award, the highest honor bestowed by the Virginia Academy of Sciences for original research.

1990 Research award of \$6000 from the CSIRO, Australia, to support my sabbatical in 1990-1991.

1991 William and Mary Baker Award of The Virginia Academy of Science for the best presentation in botanical work during the 1991 meeting.

Biological Society of Undergraduate Student Award for Botany Department Top Graduate in 1966.

Cited in Men of Achievement, The International Directory of Distinguished Leadership, American Men and Women in Science, The International Who is Who of Contemporary Achievement, Who's Who in the Frontiers of Science and Technology, and Who's Who in the South and Southeast.

SPECIFIC TOPICS OF CURRENT RESEARCH:

Biodiversity of flowering plants and land plants in general, and the Poaceae (grasses) in particular using molecular approaches. *Eleusine* (*finger millet genus*), *Oryza* (rice genus) and *Arachis* (peanut genus) are genera of special interest.

Molecular differentiation, structure and function of genes with a focus on the plastid gene *matK* and the seed storage prolamin protein gene families in grasses and cereal crops (Poaceae).

Origin, evolution and germplasm resources of crop plants with special interest in millets, rice, cowpea, and peanuts.

PUBLICATIONS: 120 peer-review articles, one popular article, one edited book, and 3 book reviews. Google Citation Index: 7260, h-index 45.

Book Chapters

1. Waines, J. G., K. W. Hilu and H. Sharma. 1982. Species Formation in *Aegilops* and *Triticum*. pp. 89-108. In J. Estes, R. Tyrl and J. Brunken. Grasses and Grasslands. Univ. of Oklahoma Press.

2. Hilu, K. W. 1987. Chloroplast DNA in the systematics and evolution of the Poaceae. pp. 65-72. In Soderstrom, T. R., K. W. Hilu, C. S. Campbell, and M. E. Barkworth. Systematics and Evolution of Grasses. Smithsonian Press.

3. Hilu, K. W. 1989. Taxonomy of domesticated plants. pp. 33-40. *In* H. T. Stalker and C. Chapman (eds.) Scientific Management of Germplasm: Characterization, Evaluation and Enhancement. International Board for Plant Genetic Resources, United Nations, Lecture Series 2.

4. Hilu, K. W. 1993. Application of restriction fragment length polymorphism to the characterization of small millets germplasm. *In* K. W. Riley, S. C. Gupta, A. Seetharam, and J. N. Mushonga (eds.). Advances in Small Millets. Oxford and IBH Press, New Delhi, India.

5. Hilu, K. W. 1994. Evolution of domesticated plants. *In* C. J. Arntzen (ed.), Encyclopedia of Agricultural Science. Vol. 2, pp. 117-127 Academic Press.

6. Hilu, K. W. 1994. The implication of DNA and protein variation in grass systematics. *In* Proceedings of the International Conference on the Systematics and Evolution of the Poaceae. pp. 92-93. Main Botanical Garden, Russian Academy, Moscow, Russia.

Papers in Refereed Journals

7. Hilu, K. W. and J. M. J. de Wet. 1976. Racial Evolution of *Eleusine coracana*. Amer. J. Bot. 63: 1311-1318.

8. Hilu, K. W. and J. M. J. de Wet. 1976. Domestication of *Eleusine coracana*. Econ. Bot. 30: 199-208.

9. Hilu, K. W., J. M. J. de Wet and D. Seigler. 1978. Flavonoids and the Systematics of *Eleusine*. Biochem. Syst. Ecol. 6: 247-249.

10. Hilu, K. W., J. M. J. de Wet and J. R. Harlan. 1979. Archaeobotany and the Origin of Finger Millet. Amer. J. Bot. 66: 330-333.

11. Hilu, K. W. 1979. Chromosome Counts in Zygophyllaceae, IOPB Chromosome Number Reports. Taxon 28: 395.

12. Hilu, K. W. and J. M. J. de Wet. 1980. The Effect of Artificial Selection on Grain Dormancy in *Eleusine*. Syst. Bot. 5: 54-60.

13. Hilu, K. W. 1980. *Eleusine tristachya*, Noteworthy Collections. Madrono 27: 177-178.

14. Hilu, K. W. 1981. Taxonomic status of the disputable *Eleusine compressa* (Gramineae) Kew Bull 36: 559-563.

15. Hilu, K. W. 1981. Cytotaxonomic studies in *Tribulus terrestris* and *T. alatus*. Nordic J. Bot. (Bot. Notiser) 1: 531-534.

16. de Wet, J. M. J., D. H. Timothy, K. W. Hilu and G. B. Fletcher. 1981. Systematics of South American *Tripsacum* (Gramineae). Amer. J. Bot. 68: 269-276.

17. Hilu, K. W. and K. Wright. 1982. Systematics of Poaceae: A Cluster Analysis Study. Taxon 31: 9-36.

18. Hilu, K. W., S. Boyd and P. Felker. 1982. Ecological and Taxonomical Study of California Mesquites (*Prosopis velutina* and *P. glandulosa*, Leguminosae). Madrono. 29: 237-254.

19. Hilu, K. W. 1983. The role of single-gene mutations in the evolution of flowering plants.

Evol. Biol. 16: 97-128.

20. de Wet, J. M. J., G. B. Fletcher, K. W. Hilu and J. R. Harlan. 1983. Origin of *Tripsacum andersonii* (Gramineae). Amer. J. Bot. 70: 706-711.
21. Neuman, P. R., J. G. Waines, K. W. Hilu, and D. Barnhart. 1983. Chromosomal location of genes controlling flavonoids production in hexaploid wheat. Genetics 103: 313-321.
22. Hilu, K. W. 1984. Leaf epidermis of *Andropogon* sect. *Leptopogon* in North America. Syst. Bot. 9: 247-257.
23. Hilu, K. W. and J. L. Randall. 1984. Convenient method for studying grass leaf epidermis. Taxon 33: 413-415.
24. Hilu, K. W. 1985. Trends of variation and systematics of the Poaceae. Taxon 34: 102-114.
25. Hilu, K. W. and T. R. Soderstrom. 1985. Biological basis of adaptation in grasses: An introduction. Ann. Missouri Bot. Gard. 72: 823.
26. Randall, J. L. and K. W. Hilu. 1986. Biosystematic studies of North American *Trisetum spicatum* (Poaceae). Syst. Bot. 11: 567-578.
27. Pehu, E., R. Veilleux and K. W. Hilu. 1987. Cluster analysis of anther-derived plants of *Solanum phureja* based on morphological characters. Amer. J. Bot. 74: 47-52.
28. Hilu, K. W. 1988. Identification of the "A" genome of finger millet using chloroplast DNA. Genetics 118: 163-167.
29. Hilu, K. W. and A. Esen. 1988. Prolamin size diversity in the Poaceae. Biochem. Syst. and Ecol. 16: 457-465.
30. Esen, A. and K. W. Hilu. 1989. Immunological affinities among subfamilies of the Poaceae. Amer. J. Bot. 76:196-203.
31. Randall, J. R. and K. W. Hilu. 1990. Interference through improper pollen transfer in mixed stands of *Impatiens capensis* and *I. pallida* (Balsaminaceae). Amer. J. Bot. 77: 939-944.
32. Pillay, M. and K. W. Hilu. 1990. Chloroplast DNA variation in diploid and polyploid species of *Bromus* subgenera *Festucaria* and *Ceratochloa* (Poaceae, grasses). Theor. Appl. Genet. 80:326-332.
33. Hilu, K. W. and A. Esen. 1990. Prolamin and immunological studies in the Poaceae: I. Subfamily Arundinoideae. Plant Syst. Evol. 173: 57-70.
34. Esen, A. and K. W. Hilu. 1991. Electrophoretic and immunological studies of prolamins in the Poaceae: II. Phylogenetic affinities of the Aristideae. Taxon 40: 5-17.
35. Hilu, K. W. and J. L. Johnson. 1991. Chloroplast DNA sequence variation in the Poaceae. Plant Syst. Evol. 176: 21-31.
36. Hilu, K. W. and J. L. Johnson. 1992. Ribosomal DNA variation in finger millet and wild species of *Eleusine* (Poaceae). Theor. Appl. Genet. 83:895-902.
37. Barbeau, W. E. and K. W. Hilu. 1993. Protein, calcium, iron, and amino acid contents of selected wild and domesticated cultivars of finger millet. Pl. Food for Human Nutrition 43:97-104.

38. Sastri, D. C., K. W. Hilu, R. Appels, E. S. Lagudah, J. Playford, and B. Baum. 1992. An overview of evolution at the 5S RNA gene loci in plants. *Pl. Syst. Evol.* 183:169-181.
39. Esen, A. and K. W. 1993. Prolamin and immunological studies in the Poaceae: III. Subfamily Chloridoideae. *American Journal of Botany* 80:104-113.
40. Esen, A. and K. W. Hilu. 1993. Prolamin and immunological studies in the Poaceae: IV. Subfamily Panicoideae. *Can. J. Bot.* 71:315-322.
41. Werth, C., K. W. Hilu, C.A. Langner, and W. V. Baird. 1993. Duplicate gene expression for isocitrate dehydrogenase and 6-phosphogluconate dehydrogenase in diploid species of *Eleusine*. *Amer. J. Bot.* 80:705-710.
42. Hilu, K. W. 1993. Literature citations: Can there be a standardized format? *BioScience* 43:779-781.
43. Hilu, K. W. 1993. Polyploidy and the evolution of domesticated plants. *Amer. J. Bot.* 80:1494-1499 (**Special Paper**).
44. Hilu, K. W. 1994. Evidence from RAPD markers in the evolution of *Echinochloa* millets (Poaceae). *Pl. Syst. Evol.* 189:247-257.
45. M'Ribu, K. and K. W. Hilu. 1994. Detection of interspecific and intraspecific variation in *Panicum* millets through random amplified polymorphic DNA (RAPD). *Theor. Appl. Genet.* 88:412-416.
46. Werth, C. R., K. W. Hilu, and C. A. Langner. 1994. Isozymes of *Eleusine* (Gramineae) and the origin of finger millet. *Amer. J. Bot.*, 81:1186-1197.
47. Mandelbaum, C. I., W.E. Barbeau, and K.W. Hilu. 1995. Protein, calcium, and iron content of wild and cultivated species of *Echinochloa* millets. *Plant Foods for Human Nutrition* 47: 101-108.
48. Hilu, K. W. 1994. Validation of the combination *Eleusine coracana* subspecies *africana* (Kennedy-O'Byrne) Hilu and deWet. *Phytologia* 76:410-411.
49. Hilu, K. W. The genus *Eleusine*. Gaertn. *In* M. E. Barkworth and K. M. Cappels (eds.). *Manual of North American Grasses*. (Publisher to be Determined).
50. Pillay, M. and K. W. Hilu. 1995. Chloroplast DNA restriction site analysis in the genus *Bromus* L. (Poaceae). *Amer. J. Bot.* 82:239-249.
51. Hilu, K. W. 1995. Evolution of finger millet: evidence from random amplified polymorphic DNA. *Genome* 38: 232-238
52. Woodburn, M., A. A. Yousten and K. W. Hilu. 1995. Random amplified polymorphic DNA analysis of pathogenic and non-pathogenic strains of *Bacillus sphaericus*. *Internl. Jour. Syst. Bact.* 45: 212-217
53. Hilu, K. W. and H. T. Stalker. 1995. Genetic relationship between peanuts and wild species of *Arachis* Section *Arachis*: Evidence from RAPD. *Pl. Syst. Evol.* 198: 167-178.
54. M'Ribu, K. and K. W. Hilu. 1996. Application of random amplified polymorphic DNA to study genetic diversity in *Paspalum scrobiculatum* L. (Kodo millet, Poaceae). *Genetic Resources Crop Evol.* 43:203-210.

55. Liang, H. and K. W. Hilu. 1996. Application of *matK* gene sequences to grass systematics and evolution. *Can. J. Bot.* 74: 125-134.
56. Hilu, K. W. and H. Liang. 1997. The *Matk* gene: sequence variation and application in plant systematics. *Amer. J. Bot.* 84: 830-839.
57. Hilu, K. W., K. M'Ribu, H. Liang, and C. Mandelbaum. 1997. Fonio Millets: Ethnobotany, Genetic diversity and Evolution. *South. Afr. Jour. Bot.* 63: 185-190.
58. Hilu, K. W. and J. L. Johnson. 1997. Systematics of *Eleusine* Gaertn. (Poaceae, Chloridoideae): Chloroplast DNA and total evidence. *Annals Missouri Bot. Gard.* 84: 841-847.
59. Hilu, K. W. and L. Sharova. 1998. Characterization of 10kDa Prolamin Genes in *Phyllostachys aurea* Riv. (Bambusoideae, Poaceae). *Amer. J. Bot.* 85: 1033-1037.
60. Rippere, K. W. Tran, M., Yousten, A., Hilu, K., and Klein, M. 1998. *Bacillus popilliae* and *Bacillus lentimorbus*, bacteria causing milky disease in Japanese beetle and related scarab larvae. *Int. J. Syst. Bacteriol.* 48: 395-402
61. Speer, B., K. Hilu and C. Werth. 1999. Relationships Between Two Intraspecific Taxa of *Pteridium aquilinum* (Dennstaedtiaceae). I. Morphological Evidence. *Systematic Botany* 23: 305-312.
62. Speer, B., K. Hilu and C. Werth. 1999. Relationships Between Two Intraspecific Taxa of *Pteridium aquilinum* (Dennstaedtiaceae). II. Isozyme Evidence. *Systematic Botany* 23: 305-312.
63. Hilu, K. W. and L. A. Alice. 1999. Systematic and evolutionary implications of *matk* indels in Poaceae. *Amer. J. Bot.* 86: 1735-1741.
64. Hilu, K. W., L. A. Alice and H. Liang. 1999. Phylogeny of Poaceae inferred from *matK* sequences. *Annals of Missouri Bot. Gard.* 86: 835-851.
65. Hilu, K. W. and L. A. Alice. 2000. Phylogenetic relationships in subfamily Chloridoideae (Poaceae) based on *matK* sequences: A preliminary assessment. In *Grass Systematics and Evolution*. Vol. 2, Pp. 173-179. Proceedings of 2nd International Conference on the Comparative Biology of Monocotyledons, 1998, Sydney, Australia, eds. S. W. L. Jacobs and J. Everett. Melbourne: CSIRO Press.
66. Hilu, K. W. 2000. Contributions of Prolamin Size Diversity and Structure to the Sytematics of the Poaceae. In *Grass Systematics and Evolution*. Vol. 2, Pp. 241-247. Proceedings of 2nd International Conference on the Comparative Biology of Monocotyledons, 1998, Sydney, Australia, eds. S. W. L. Jacobs and J. Everett. Melbourne: CSIRO Press.
67. Hilu, K. W. and L. A. Alice. 2001. A phylogeny of Chloridoideae (Poaceae) based on *matK* Sequences. *Systematic Botany* 26: 386-405.
68. Hilu, K. W. and L. V. Sharova. 2002. Evolutionary implications of substitution patterns in prolamin genes of *Oryza glaberrima* (African rice, Poaceae) and related species. *American Journal of Botany.* 89: 211-219.
70. Mullins, I. M. and K. W. Hilu. 2002. Sequence variation in the gene encoding the 10 kDa prolamin in *Oryza* (Poaceae): I. Phylogenetic Implications. *Theoretical and Applied Genetics* 105: 841-846.

71. Sauquet, H., J. A. Doyle, T. Scharaschkin, T. Borsch, K. W. Hilu, L. W. Chatrou, and A. Le Thomas. 2003. Phylogenetic relationships in the Magnoliales and Myristicaceae: a multi-level approach based on morphology and molecules. *Bot. J. Linn. Soc.* 142: 125-186.
72. Hilu, K. W. 2003. The genus *Eleusine*. In: M. E. Barkworth and K. M. Capels (eds.). *Manual of North American Grasses*, vol. 25: 109-110. Oxford Univ. Press, Oxford, New York.
73. Borsch, Thomas, Khidir W. Hilu, Dietmar Quandt, Volker Wilde, Christoph Neinhuis, and Wilhelm Barthlott. 2003. Non-coding, fast evolving plastid *trnT-trnF* sequences reveal a well resolved phylogeny of basal angiosperms. *Journal of Evolutionary Biology* 16: 558-567.
74. Hilu, Khidir W., Thomas Borsch, Kai Müller, Douglas E. Soltis, Pamela S. Soltis, Vincent Savolainen, Mark W. Chase, Martyn Powell, Lawrence A. Alice, Rodger Evans, Hervé Sauquet, Christoph Neinhuis, Tracey A. Slotta, Jens G. Rohwer, Christopher S. Campbell, and Lars Chatrou. 2003. Angiosperm phylogeny based on *matK* sequence information. *American Journal of Botany* 90: 1758-1776. (selected for journal cover)
75. Hilu, K. W. 2004. Phylogenetics and chromosomal evolution in the Poaceae (grasses). *Australian Journal of Botany* 52: 13-22.
76. Mullins, I. M. and K. W. Hilu. 2004. Amino Acid Variation in the 10 kDa *Oryza* Prolamin Seed Storage Protein. *Journal of Agricultural Chemistry* 52: 2242-2246.
77. Quandt D, Müller K, Stech M, Hilu KW, Frey W, Frahm JP, Borsch T. Molecular evolution of the chloroplast *trnL-F* region in land plants. 2004. *Monographs in Systematic Botany from the Missouri Botanical Garden* 98: 13-37.
78. Soltis, Douglas E., Victor A. Albert, Vincent Savolainen, Khidir W. Hilu, Yin-Long Qiu, Mark W. Chase, James S. Farris, Jeffrey D. Palmer, Pamela S. Soltis. 2004. *Amborella*, genomic-scale data, and the limits of phylogenetics: a cautionary tale. *Trends in Plant Science* 9: 477-483.
79. Neinhuis, C., S. Wanke, K. W. Hilu, K. Müller, T. Borsch. 2004. Phylogeny of Aristolochiaceae based on Parsimony, likelihood, and Bayesian analyses of *trnL-trnF* sequences. *Plant Systematics and Evolution* 250:7-27.
80. Neves, S., Ginger Swire-Clark, K. W. Hilu, and Wm. Vance Baird. 2005. Phylogeny of *Eleusine* (Poaceae: Chloridoideae) based on nuclear ITS and plastid *trnT-trnF* sequences. *Molecular Phylogenetics and Evolution* 35: 395-419.
81. Chase, M. W., M. F. Fay, D. S. Devey, N. Rønsted, J. Davies, Y. Pillon, G. Petersen, O. Seberg, M. N. Tamura, C. B. Asmussen, K. Hilu, T. Borsch, J. I. Davis, D. W. Stevenson, J. C. Pires, T. J. Givnish, K. J. Sytsma, and S. W. Graham. 2005. Multigene analyses of monocot relationships: a summary. J. T. Columbus (ed.). *Proceedings of the Third International Conference on Monocots*.
82. Woods, Kristi, K. W. Hilu, J. H. Wiersema, T. B. Borsch. 2005. Pattern of Variation and Systematics of *Nymphaea odorata*: I. Evidence from Morphology and Inter-Simple Sequence Repeats (ISSR). *Systematic Botany* 30:471-480.
83. Woods, Kristi, K. W. Hilu, T. B. Borsch, J. H. Wiersema,. 2005. Pattern of Variation and Systematics of *Nymphaea odorata*: II. Sequence information from ITS and *trnL-trnF*. *Systematic Botany* 30: 481-493.
84. Diouf, Diaga and Khidir W. Hilu. 2005. Microsatellites and RAPD markers to study genetic relationship among cowpea breeding lines and local varieties in Senegal. *Journal of Genetic Resources*

and Crop Evolution 52: 1057-1067.

85. Tallury, S.P., Hilu, K.W., Milla, S.R., Friend, S.A., Alsaghir, M., Stalker, H.T., and Quandt, D. 2005. Genomic affinities in *Arachis* section *Arachis* (Fabaceae): molecular and cytogenetic evidence. *Theor. Appl. Genet.* 105: 841-846.
86. Borsch, Thomas, Khidir W. Hilu, Cornelia Löhne, Kai Müller, Stefan Wanke, Christoph Neinhuis, Wilhelm Barthlott, Dietmar Quandt. 2005. Towards understanding basal angiosperm diversification: recent insights using fast evolving genomic regions. *Nova Acta Leopoldina* 342: 85-110
87. Chase, M. W., M. F. Fay, D. S. Devey, N. Rønsted, J. Davies, Y. Pillon, G. Petersen, O. Seberg, M. N. Tamura, C. B. Asmussen, K. Hilu, T. Borsch, J. I. Davis, D. W. Stevenson, J. C. Pires, T. J. Givnish, K. J. Sytsma, and S. W. Graham. 2005. Multi-gene analyses of monocot relationships: a summary. J. T. Columbus (ed.). *Proceedings of the Third International Conference on Monocots*.
88. Qiu, Yin-Long, Olena Dombrovskaya, Jungho Lee, Libo Li, Barbara A. Whitlock, Fabiana Bernasconi-Quadroni, Joshua S. Rest, Thomas Borsch, **Khidir W. Hilu**, Susanne S. Renner, Douglas E. Soltis, Pamela S. Soltis, Michael J. Zanis, Jamie J. Cannone, Robin R. Gutell, Martyn Powell, Vincent Savolainen, Lars W. Chatrou, Mark W. Chase. 2005. Phylogenetic analyses of basal angiosperms based on nine plastid, mitochondrial, and nuclear genes. *International Journal of Plant Science* 166: 815-842.
89. Müller, Kai F., Khidir W. Hilu and Thomas Borsch. 2006. Phylogenetic utility of rapidly evolving DNA at high taxonomical levels: contrasting *matK*, *trnT-F* and *rbcL* in basal angiosperms. *Molecular Phylogenetics and Evolution*. *Molecular Phylogenetics and Evolution* 41: 99-117.
90. Hilu, K. W. 2006. Skewed distribution of species number in grass genera: is it a taxonomic artifact? In: Trevor Hodkinson, John Parnell and Steve Waldren (eds.), *Towards the Tree of Life: the taxonomy and systematics of large and species rich groups*. Pp. 165-176, CRC Press.
91. Hilu, K. W. 2007. A Century of Progress in Grass Systematics. *Kew Bulletin* 62: 355–373.
92. Döring, Elke, Khidir W. Hilu, Martin Röser. 2007. Phylogenetic relationships in the *Aveneae/Poeae* complex (*Pooideae*, *Poaceae*). *Kew Bulletin* 62: 355–373.
93. Worberg, Andreas, Dietmar Quandt, Anna-Magdalena Barniske, Cornelia Löhne, Khidir W. Hilu, and Thomas Borsch. 2007. Phylogeny of basal eudicots: insights from non-coding and rapidly evolving DNA. *Organisms, Diversity and Evolution* 7: 55–77.
94. Borsch, Thomas, Khidir W. Hilu, John H. Wiersema, Cornelia Löhne, Wilhelm Barthlott, and Volker Wilde. 2007. Phylogeny of *Nymphaea* (Nymphaeaceae): Evidence from substitutions and microstructural changes in the chloroplast *trnT-trnF* region. *International Journal of Plant Science* 168(5): 639–671.
95. Breviario, Diego, Wm. Vance Baird, Shail Sangoi, Khidir Hilu, Pietro Blumetti, and Silvia Giani. 2007. High polymorphism and resolution in targeted fingerprinting with combined beta-tubulin introns. *Molecular Breeding* 20: 249-259.
96. Barthelet, Michelle and Khidir Hilu. 2007. Expression of *matK*: functional and systematic implications. *American J. Botany* 94: 1402–1412.

97. Barthelet, Michelle and Khidir Hilu. 2008. Evaluating evolutionary constraint on the rapidly evolving gene *matK* using protein composition. *Journal of Molecular Evolution* 66: 185-196. **(selected fort journal cover)**
98. Hilu, Khidir and Michelle Barthelet. 2008. Mode and Tempo of *matK*: Gene Evolution and Phylogenetic Implications. In *Evolutionary biology from concepts to applications*, pp 165-180, ed. Pierre Pontarotti. Springer, Germany.
99. Hilu, K. W., C. Black, D. Diouf, G. Burleigh, 2008. Phylogenetic signal in *matK* vs. *trnK*: A case study in early-diverging eudicots (Angiosperms). *Molecular Phylogenetics and Evolution* 48: 1120-1130.
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95. Quandt, D., K. Muller, K. W. Hilu, and T. Borsch. 2005. Inversions and length mutations in chloroplast DNA and their phylogenetic utility. **Symposium:** Molecular phylogenetic approach to the evolution of bryophytes. XVII International Botanical Congress, 2005, Vienna, Austria.

96. Hilu K. W. A century of progress in grass systematics. 2005. The opening talk at a special symposium: A celebration of grasses. Linnaean Society of London and the Royal Botanic Gardens Kew, England.

97. Döring, Elke, Khidir W. Hilu, Martin Röser. 2005. Molecular phylogeny of the Poaceae tribe Aveneae. Symposium: A celebration of grasses. Linnaean Society of London and the Royal Botanic Gardens Kew, England.

98. Mishler B. D. and K. W. Hilu. 2006. Land plants evolution: Phylogenetics and beyond- Introduction. "Botany 2006", Botanical Society of America Annual Meeting, Chico, California. abstracts p. 46.

99. Hilu, K. W., S. Magallon, and D. Quandt. 2006. Gene tempo, phylogeny and dating of land plants. "Botany 2006", Botanical Society of America Annual Meeting, Chico, California. **Symposium** . Land plants evolution: Phylogenetics and beyond. abstracts p. 46.

100. Quandt D, Borsch T, Wicke S, Won H, Renner S. S., Hilu K.W. Land plant evolution: a perspective from fast evolving chloroplast regions. "Botany 2006", Botanical Society of America Annual Meeting, Chico, California. . Land plants evolution: Phylogenetics and beyond. abstracts p. 48.

101. Woberg A, Quandt D, Barniske AM, Löhne C, Hilu KW, Borsch T. 2006. Towards understanding early Eudicot diversification: insights from rapidly evolving and non-coding DNA. "Botany 2006", Botanical Society of America Annual Meeting, Chico, California; – abstracts p. 268.

102. Barthett, Michelle and K. W. Hilu. 2006. *matK*: molecular evolution and functional constraints. "Botany 2006", Botanical Society of America Annual Meeting, Chico, California.

103. Black, C.M., Friend S.A., and Hilu K.W. 2006 Molecular study of peanut allergen Ara h 2 across wild peanut species. Virginia Academy of Science Annual Meeting. Blacksburg, VA.

104. Friend, S. and K. W. Hilu. 2006. Resolving inconsistencies in *Arachis* (Fabaceae, legumes) using molecular information. Virginia Academy of Science Annual Meeting. Blacksburg, VA. (**Received best student paper award**)

105. Worberg A, Quandt D, Barniske AM, Löhne C, Hilu KW, Borsch T. Phylogeny of basal eudicots: Insights from non-coding and rapidly evolving DNA. 2006. 17th International Symposium on "Biodiversity and Evolutionary Biology", Bonn/Germany; abstracts p. 87.

106. Quandt D, Borsch T, Wicke S, Renner S. S., Hilu KW, Neinhuis C. 2006. Seed plant evolution: sequence based cladistics vs microstructural changes. 17th International Symposium on "Biodiversity and Evolutionary Biology, Bonn/Germany; abstracts p. 69.

107. Döring, Elke, Julia Albrecht, Khidir W. Hilu, Martin Röser. 2006. Delineation of the grass subfamily Pooideae and its major groups based on chloroplast gene *matK* sequences. Conference: Problems of botany in southern Siberia and Mongolia, held in Barnaul, Russia.

108. Hilu, Khidir. 2007. Flowering plants: a rearranged branch in the tree of life (ATOL). Virginia Academy of Science Annual Meeting. *Invited Special Speaker for the Botany Section.*

109. Hilu, Khidir W., Susana A. Magallón and Dietmar Quandt. 2007. When different genes tell the same story: Diversification of land plants. 11th Evolutionary Biology Meeting 2007, September 19-21, Marseilles (**opening talk to the conference**) <http://www.evolutionary-biology.org>

110. Hilu, K. W. and M. Barthet. Molecular Evolution of the Rapidly Evolving and Signal Rich *matK* gene. Evolution 2008, Annual Meeting of the American Society for the Study of Evolution and the Systematic Biology Society, Minneapolis July 2008.

111. Martin Röser, Julia Schneider, Elke Döring, & Khidir W. Hilu. Major lineages of Pooideae: a comparison of plastid with nuclear ITS DNA sequences. International Conference on Monocots/Grasses, Copenhagen, Denmark.

112. Riccardo M. Baldini, Rohit Kumar, Khidir W. Hilu. . Monocots 4 International Conference, Stockholm, August 2009.
113. Medicine and Land Reclamation. Conference on Scientific Research Role in Iraq National Development, Baghdad, Iraq.
114. Friend, Sheena A., Dietmar Quandt, and Khidir W. Hilu. 2009. Species, genomes and sections relationships in peanut genus *Arachis* (Fabaceae): a molecular phylogeny. Annual Meeting of the Botanical Society of America.
115. Crawley, Sunny. S., Newman, Shelly A., and Hilu Khidir W. 2009. Caryophyllales: gene choices, taxon sampling, and phylogenetic structure. Botanical Society of America Annual Meeting. Snowbird, UT – Assembling the Tree of Life Colloquium
116. Hilu, Khidir, Chelsea Black, Sunny Crawley, and Dipan Oza. Phylogenetic signal, gene tempo and depth of resolution: the rosids. 2009 Annual Meeting of the Botanical Society of America.
117. Brockington, S. F., Alexandre, R., Ramdial, J., Moore, M. J., Crawley, S. S., Hilu, K. W., Dhingra, A., Soltis, D. E., and Soltis, P. S. 2009. Phylogeny of the Caryophyllales and the Evolution of Differentiated Perianth. Botanical Society of America Annual Meeting, Snowbird, UT.
118. Oza, D., Black, C. M., Crawley, S., and Hilu, K. W. 2009. Diversification of rosid clade (angiosperms) using genomic regions differing in mode of evolution. 2009. Virginia Academy of Sciences Annual Meeting. Richmond, VA.
119. Khidir W. Hilu. 2009. Polyploidy and Biodiversity: Evaluating Underlying Associations. International Conference on Polyploidy, Hybridization and Biodiversity, Sant Malo, France.
120. Friend, Sheena A., Dietmar Quandt, and Khidir W. Hilu. 2009. Species, genomes and sections relationships in peanut genus *Arachis* (Fabaceae): a molecular phylogeny. Annual Meeting of the Botanical Society of America.
121. Crawley, Sunny. S., Newman, *Shelly A., and Hilu Khidir W. 2009. Caryophyllales: gene choices, taxon sampling, and phylogenetic structure. Botanical Society of America Annual Meeting. Snowbird, UT – Assembling the Tree of Life Colloquium.
122. Hilu, Khidir, *Chelsea Black, Sunny Crawley, and *Dipan Oza. Phylogenetic signal, gene tempo and depth of resolution: the rosids. 2009 Annual Meeting of the Botanical Society of America.
123. Brockington, S. F., Alexandre, R., Ramdial, J., Moore, M. J., Crawley, S. S., Hilu, K. W., Dhingra, A., Soltis, D. E., and Soltis, P. S. 2009. Phylogeny of the Caryophyllales and the Evolution of Differentiated Perianth. Botanical Society of America Annual Meeting, Snowbird, UT.
124. Oza, D., *Black, C. M., Crawley, S., and Hilu, K. W. 2009. Diversification of rosid clade (angiosperms) using genomic regions differing in mode of evolution. 2009. Virginia Academy of Sciences Annual Meeting. Richmond, VA.
125. Hilu, K. W. 2010. Botanizing the Alps Summer Course: A Valuable Exposure to Botany and Culture. Annual Botanical Society of America meetings in Providence RI, August 2010.
126. Crawley, Sunny S., J. Gordon Burleigh, and Khidir W. Hilu. Ideal Dataset Shape in Molecular Phylogenetics: Vertical, Horizontal, or Combined? Annual Botanical Society of America meetings in Providence RI, August 2010.
127. Crawley, Sunny S. and Khidir Hilu, Missing data, sampling density, and gene choice for Assembling the Tree of Life. Department of Biology Sciences Department Research Day, February 2010.
128. Friend, Sheena A., Dietmar Quandt, S. P. Tallury, H. Thomas Stalker, K. W. Hilu. (2010). Species and Genome Relationships in *Arachis*: a Molecular Phylogeny. American Peanut Research and Education Society (APRES) annual conference, Marianna, Florida.
129. Soltis , Douglas E. , Smith , Stephen A. , Cellinese , Nico, Moore , Michael , Refulio-Rodriguez , Nancy F. , Olmstead , Richard , Crawley , Sunny S , Black , Chelsae , Diouf , Diaga, Hilu , Khidir W., Qiu , Yin-Long, Sytsma , Kenneth J. , Wurdack , Kenneth, Xi , Zhenxiang, Davis , III , Charles C., Tank , David , Sanderson , Michael, Donoghue , Michael J. and Soltis , Pamela S. (2010). Inferring angiosperm phylogeny: 17-gene 642-taxon analyses. Annual Botanical Society of America meetings in Providence RI, August 2010.

130. Crawley, S. D. and K. W. Hilu. 2011. Rapidly evolving plastid *matk* gene and *trnK* intron sequences inferring phylogeny of the order Caryophyllales (angiosperms). Journal of Systematics and Evolution meeting, Tibet, China.

131. Magallón, S., K. W. Hilu, and D. Quandt. 2011. The age and rate of molecular evolution of major land plant lineages: the influence of differential substitution rates and of fossil constraints. To be presented at the 2011 International Botanical Congress in Melbourne, Australia, in a symposium entitled "Dating the Plant Tree of Life: Biological and Methodological Questions"

132. Voshell Baldini, R.M., Kumar, R., Tatalovich, N. & Hilu, K.W. 2011. *Phalaris* (Canary Grasses, Poaceae): Molecular phylogenetics, polyploidy and floret evolution. Botanical Society of America 2011 Annual Meeting, St. Louis Missouri.

133. Hilu, Khidir W. and Keenan Moukarzel. 2011. MatK is a pseudogene in many angiosperms – IS IT REALLY? Botanical Society of America 2011 Annual Meeting, St. Louis Missouri.

134. GPWG II. 2011. Relationships among the subfamilies of the grasses (Poaceae). Botanical Society of America 2011 Annual Meeting, St. Louis Missouri.

135. Atia, A. M and K. W. Hilu. 2011. Phylogeny of *Phleum* L. (Poaceae, timothy grass): species and polyploid evolution. Botanical Society of America 2011 Annual Meeting, St. Louis Missouri.

136. Hilu, K. W. and Jeffery Townsend. 2012. Gene/genome data and the limits to "knowing" the evolutionary history of present-day biodiversity. Symposium to be held at the 2012 Annual Meeting of the Society of Molecular Biology and Evolution, Dublin, Ireland.

137. Hilu, K. W. and Sunny S. Crawley. 2012. Genes, genomes and efficacy in discerning dimensionalities of the tree of life. The 2012 Annual Meeting of the Society of Molecular Biology and Evolution, Dublin, Ireland.

138. Hosen, Alyssa, Stephanie Voshell and Khidir Hilu. Correlation between Chromosome Loss, Genome Size and Diversification in Canary Grasses. Annual Undergraduate Research Conference, Virginia Tech. 2012.

139. Hilu, K. W., C. M. Black* and D. Oza*. 2013. Molecular Evolution, Gene Informativeness and Phylogenetic Reconstruction. BSA 2013 New Orleans, U.S.A.

140. Voshell, S. M. and K. W. Hilu. 2013. Phylogeography of Canary Grasses (*Phalaris*): Impact of chromosome and floret evolution. BSA 2013 New Orleans, U.S.A.

141. Hilu, K. W. 2013. Genes vs. genomes in resolving the dimensionality of the tree of life: Caryophyllales as a case study. The Virginia Academy of Science meeting, Blacksburg, VA, U.S.A.

142. Voshell, S. M. and K. W. Hilu. 2013. Evolutionary history of canary grasses: phylogeography, cytology and floret structure The Virginia Academy of Science meeting, Blacksburg, VA, U.S.A.

143. Sackenheim*, J. and K. W. Hilu. 2013. A phylogenetic tree of the peanut genus *Arachis* (Fabaceae) based on *trnT-F/ITS* vs. Allergen genes. The Virginia Academy of Science meeting, Blacksburg, VA, U.S.A.

144. Hilu, K. W., C. M. Black and D. Oza. 2014. Fossil calibration, gene informativeness and phylogenetic utility: a case study in angiosperms. In a symposium entitled "Time: Fossils and phylogenetic reconstruction" which was part of the XXXIII Congress of the Willi Hennig Society held in Trento, Italy.

145. Hilu, K., J. Townsend, and Arindam RoyChoudhury. Untangling information, noise, and phylogenetic reconstruction in genome scale data. An abstract for a symposium selected for the Society of Molecular Biology and Evolution 2015 meeting to be held In Vienna, Austria.

146. Hilu, K.W. Gene mode of evolution, phylogenetic informativeness and tree structure: A study in land plants. An abstract for a symposium selected for the Society of Molecular Biology and Evolution 2015 meeting to be held In Vienna, Austria.

147. Voshell, Stephanie and Khidir Hilu. Submitted 2017. Conflicting role of polyploidy in speciation: Canary Grasses. 2017 Gordon Research Conference: Speciation, held in location near Barga, Italy.

148. Hilu, K. W. A comparative study of phylogenetic reconstruction based on mode and tempo of gene evolution. Presented at Evolution 2018, an international conference on evolution. Montpellier, France.

POSTERS PRESENTED

1. Rippere, K.W., Tran, M., Yousten, A., Hilu, K., and Klein, M. 1997. Molecular systematics of *Bacillus popilliae* and *Bacillus lentimorbus*, causative agents of milky disease in scarab larvae. Presented at the meeting of the Society of Invertebrate Pathology, August 1997 at Banff, Alberta
2. Irene Boyle and K. W. Hilu. 1999. Phylogeny of *Oryza*, Poaceae, inferred from a prolamin (seed storage protein) gene. XVI International Botanical Congress Meeting, St. Louis, MO, August 1999. Abstract P. 424.
3. Neinhuis, C., T. Borsch and K. W. Hilu. 1999. Phylogenetic relationship within Aristolochiaceae based on TrnT-TrnF sequences. XVI International Botanical Congress Meeting, St. Louis, MO, August 1999. Abstract P. 351.
4. Borsch, T. and K. W. Hilu. 1999. Phylogenetic utility of TrnT-TrnF: A case study in *Nymphaea* and putative outgroups. XVI International Botanical Congress Meeting, St. Louis, MO, August 1999. Abstract P. 415.
5. Baird, Vance, Susana S. Neves And Khidir W. Hilu. 2001. Evolution in *Eleusine* with emphasis on polyploid species using ITS and trnT-F sequence information. Presented at the 2001 meeting of the Botanical Society of America.
6. Niehaus, Kristi, Khidir Hilu, John H. Wiersema, and Thomas Borsch. 2002. Patterns of variation and evolution of *Nymphaea odorata* (Nymphaeaceae) assessed by molecular and morphological information. Annual Meeting of the Botanical Society of America
<http://www.botany2002.org/section12/abstracts/159.shtml>
7. Cynthia Gibas, A. Kaluszka, K. W. Hilu. An Interactive Web Resource for Comparative Analysis of Chloroplast Genomes. Genomes and Evolution Conference, Penn State University, 2004.
8. Döring, Elke, Khidir W. Hilu, Martin Röser. 2005. Molecular phylogeny of the Poaceae tribe Aveneae. XVII International Botanical Congress, 2005, Vienna, Austria.
9. ATOL Group. Assembling the tree of life for angiosperms. 2005. XVII International Botanical Congress, 2005, Vienna, Austria.
10. Black, C.M., Friend, S.A., and Hilu, K.W. 2005. Molecular study of peanut allergen Ara h 2 across wild peanut species. Virginia Academy of Science Undergraduate Conference, Richmond, VA.S
11. Döring, Elke, Julia Albrecht, Khidir W. Hilu, Martin Röser. 2006. Outline of the grass subfamily pooideae. 17th International Symposium Biodiversity and Evolutionary Biology of the German Botanical Society, Bonn, Germany.

12. Rohit, Kumar, R. Baldini, and K. W. Hilu. 2006. Evolution of the canary grasses: a study of polyploidy. The VAS Undergraduate Research.
13. Khidir W. Hilu and Angiosperm Tree of Life Research Group. 2007. Progress in Assembling the Angiosperm Tree of Life. 11th Evolutionary Biology Meeting 2007, September 19-21, **Marseilles, France** (also presented at the department of Biological Sciences Alumni Tailgate Party)
14. Drysdale, Sunny S, Newman, Shelli, Hilu, Khidir W. Phylogenetic Utility of the trnK intron in Caryophyllales. Plant Biology and Botany 2007 Systematics Section, Chicago. (also presented at the department of Biological Sciences Alumni Tailgate Party)
15. Friend S.A., Quandt D., Volpe D.S. and Hilu K.W. 2007 Systematics of *Arachis*(Fabaceae): information from morphology versus DNA sequences. Botany and Plant Biology Joint Conference. Chicago IL. Poster presentation.
16. Friend S.A. and Hilu K.W. 2007 Phylogeny of the Peanut Genus *Arachis* Based on Nuclear and Plastid Sequence Data. Department of Biological Sciences Research Day. Blacksburg, VA. Poster presentation.
17. Riccardo M. Baldini, Rohit Kumar*, Khidir W. Hilu. 2008. Monocots 4 International Conference, Stockholm, August 2008.
18. Crawley, S. S. and Hilu, K.W. 2009. Carnations, Cacti, and Carnivorous Plants and the Flowering Plants (Angiosperms) Tree of Life. VT - Department of Biological Sciences Research Day, Blacksburg, VA.
19. Crawley, S. S., *Black, C. M., *Oza, D., and Hilu, K. W. 2009. The Power of Genes in Understanding Biodiversity: The rosids. Virginia Tech Department of Biological Sciences Research Day, Blacksburg, VA.
20. Borza*, Meridith Khidir Hilu, and Dorothea Tholl. 2009. Analysis of Induced Volatile Terpene Formation in Lower Land Plants. Virginia Tech Department of Biological Sciences Research Day, Blacksburg, VA.
21. Voshell, S., R. Baldini, R. Kumar, N. Tatalovich, and K. Hilu. Canary Grasses (*Phalaris*, Poaceae): Biogeography and Evolution Bridging Five Continents. Annual Botanical Society of America meetings in Providence RI, August 2010.
22. Voshell, Stephanie, R. Baldini, R. Kumar, N. Tatalovich, and K. Hilu. Canary Grasses (*Phalaris*, Poaceae): Biogeography and Evolution Bridging Five Continents. Presented at Botany 2010 conference in July.
23. Diaga Diouf, Sheena A. Friend, Khidir W. Hilu, 2010, *Phaseolus-Vigna* complex analysis by using genomic and bioinformatic tools. 5th Cowpea World Conference, Saly, Senegal.
24. Friend, Sheena, Dave Bevan, Khidir Hilu. 2010. In search of a hypoallergenic peanut in the wild species. Department of Biology Sciences Department Research Day, February 2010.
25. Houston, B., D. Oza and K. Hilu. 2010. Recombinant Expression of Maturase K in *Pichia pastoris*. Poster presentation at the Virginia Academy of Science, Undergraduate Meeting, Richmond, VA.
26. Voshell, S., R. Baldini, R. Kumar, N. Tatalovich, and K. Hilu. Canary Grasses (*Phalaris*, Poaceae): Biogeography and Evolution Bridging Five Continents. Annual Botanical Society of America meetings in Providence RI, August 2010.
27. Voshell, Stephanie, R. Baldini, R. Kumar, N. Tatalovich, and K. Hilu. Canary Grasses (*Phalaris*, Poaceae): Biogeography and Evolution Bridging Five Continents. Presented at Botany 2010 conference in July.
28. Diaga Diouf, Sheena A. Friend, Khidir W. Hilu, 2010, *Phaseolus-Vigna* complex analysis by using genomic and bioinformatic tools. 5th Cowpea World Conference, Saly, Senegal.
29. Friend, Sheena, Dave Bevan, Khidir Hilu. 2010. In search of a hypoallergenic peanut in the wild species. Department of Biology Sciences Department Research Day, February 2010.
30. Houston, B., D. Oza and K. Hilu. 2010. Recombinant Expression of Maturase matK. in *Pichia pastoris*. Poster presentation at the Virginia Academy of Science, Undergraduate Meeting, Richmond, VA.
31. Hosey, Alyssa, Stephanie Voshell and Khidir Hilu. Correlation between Chromosome Loss, Genome Size and Diversification in Canary Grasses. Annual Undergraduate Research Conference, Virginia Tech. 2012.
32. Sackenheim, J. and K. W. Hilu. 2013. A phylogenetic tree of the peanut genus *Arachis*

(Fabaceae) based on *trnT-F/ITS* vs. Allergen genes. Poster presented at given at the Junior Virginia Academy of Science 2013 meeting, Blacksburg. May 2013.

33. Voshell, Stephanie and Khidir Hilu. 2017. Conflicting role of polyploidy in speciation: Canary Grasses. 2017 Gordon Research Conference: Speciation, held in location near Barga, Italy.
34. Khidir Hilu. 2018. A comparative study of phylogenetic reconstruction based on mode and tempo of gene evolution. Poster presented at the 2018 International Conference on Evolution. Conference held August 2018 in Montpellier, France.

Grants Received:

National Science Foundation – MRI program. W-C Fung, K. W. Hilu, S. King. 2010. Acquisition of A Heterogeneous Supercomputing Instrument for Transformative Interdisciplinary Research. Amount: \$1,992,527.

SCEV- Commonwealth of Virginia, VT and others. Fung, Wu, et al. Transforming Interdisciplinary Research and Education with Video Cards. Amount: \$853,000

National Science Foundation, REU Supplemental Grant to Assembling the Tree of Life Project. 2007. Amount: \$5000.

National Science Foundation, Assembling the Tree of Life Project. 2004. Investigator: Douglas Soltis, Pamela Soltis, K. W. Hilu, W. S. Judd, K. J. Sytsma, P. Berry, T. J. Givnish, C. C. Davis, M. J. Donoghue, D. A. Baum, S. Mathews, Y.-L. Qiu, and H. R. G. Olmstead. A COLLABORATIVE PROPOSAL: Resolving the Trunk of the Angiosperm Tree and 12 of its Thorniest Branches. Duration: 5 years. Amount Funded: \$3, 000,000.

Fund for Scientific Research Flanders (Belgium). 2005-2010. Erik Smets, et al. Phylogeny, character evolution, and diversity of flowering plants. (European Biodiversity Initiatives). Amount funded: Euro 62,500. Duration: 5 years.

Juffress Trust. 2002. Investigator: K. W. Hilu. Differentiation of prolamin multigene families in grasses (Poaceae). Duration: 1 year. \$18,000.

Juffress Trust. 2000. Investigator: K. W. Hilu. Differentiation of prolamin multigene families in grasses (Poaceae). Duration: 1 year. \$10,000.

Virginia Agricultural Experiment Station. HATCH Project. 2000. Hilu, K. W. Utilization of DNA Sequence Information in Determining Genetic Diversity and Germplasm Resources of Peanut. Amount: \$~23,000. Duration: 5 years.

International Experience in the Summer Course Botanizing the Alps. \$1000. Duration: 1 year.

Virginia Tech CEUT. Hilu, K. W. Augmenting the International Experience in the Summer Course Botanizing the Alps. \$2500. Duration: 1 year.

Juffress Trust. 1999. Investigator: K. W. Hilu. Differentiation of prolamin multigene families in grasses (Poaceae). Duration: 1 year. \$18,370.

CARUDO Trust. 1999. Investigator: K. W. Hilu. A study toward improvement of millets. Duration: 1 year. \$10,000.

Millennium Grants. 1999. . Investigator: K. W. Hilu. Evolution of prolamin gene families in grasses. Duration: 1 year. \$10,000.

The National Science Foundation. 1998. B. Opell and Hilu, K. W. Supplemental Funds for Purchasing an Automated Sequencer. Amount: \$15,000. Duration: 1 years.

The International Water Lily Society. 1997. Investigators: Hilu, K. W. and Thomas Borsch. Taxonomic and Evolutionary Study of the genus *Nymphaea* (Nymphaeaceae). Duration: one year, Amount received: \$500.

ASPIRES, Virginia Tech. 1997. Investigators: K. W. Hilu and Brent Opell. Funds for purchasing an automated sequencer for the biology department. Amount received: \$25,400.

The National Science Foundation. 1996. Hilu, K. W. Systematic Study in the Subfamily Chloridoideae (Poaceae, Grasses) Using *matK* Gene Sequence Variation. Amount: \$140,000. Duration: 2 years.

Virginia Polytechnic Institute and State University, College of Arts and Sciences Small Grant Program. 1994. Hilu, K. W. Application of Gene Sequencing to Study Evolution of the Grass Family. Amount: \$3,000. Duration: 2 years.

Educational Foundation, VPI. 1994. Hilu, K. W. Supplementary Funds to Travel to the International Conference on the Systematics and Evolution of the Poaceae held in Russia. Amount: \$800.

Virginia Agricultural Experiment Station. HATCH Project. 1994. Hilu, K. W. Molecular-Aided Cytogenetic Approaches for Gene Transfer to Peanut. Amount: about \$20,000. Duration: 5 years.

Educational Foundation, VPI. 1993. Hilu, K. W. Supplementary Funds to Travel to the 1993 International Botanical Congress in Japan. Amount: \$800.

U.S. Agency for International Development. 1991. Hilu, K. W. Molecular Genetic Study of Semi-Arid Millets. Amount \$149,823. Duration: 4 years.

Virginia Polytechnic Institute and State University, College of Arts and Sciences Small Grants Program. 1991. Yousten, A. A., G. W. Claus, J. Falkinham, K. W. Hilu, L. Kok. Development of Recombinant Endophytic Bacteria for the Protection of Sugarcane from the Sugarcane Borer. Amount \$2,500. Duration: 2 years.

Virginia Agricultural Experiment Station, HATCH Project. 1989. Hilu, K. W. A Study of Genetic Diversity in Peanuts Using Chloroplast and rRNA Molecular Markers. Amount: \$15,300. Duration: 4 years.

Virginia Polytechnic Institute and State University, College of Arts and Sciences Small Project Grant. 1989. Hilu, K. W. and E. T. Nilsen. Influence of Polyploidy on Heat Shock Protein in Plants. Amount: \$2,000.

U.S. Agency for International Development. 1987. Hilu, K. W. and J. L. Johnson. Breeding of Finger Millet: Phase I. Molecular Genetic Study. Amount: \$148,951. Duration: 2 years.

National Science Foundation. 1987. Hilu, K. W. and A. Esen. Immunological and Electrophoretic Studies of Systematic Relationships Among Subfamilies of Poaceae (Grasses). Amount: \$125,908. Duration: 2 years.

Educational Foundation, VPI. 1987. Hilu, K. W. Supplementary Funds to Travel to the 1987 International Botanical Congress in Berlin. Amount: \$1,000.

International Board for Plant Genetic Resources. 1985. Hilu, K. W. Collection of Wild Species of *Eleusine* in Kenya. Amount: \$12,000 plus transportation to travel in Kenya. Duration: 2 years.

The Smithsonian Institution. 1984-85. Soderstrom, T. R., K. W. Hilu, C. S. Campbell, and M. E. Barkworth. International Symposium on Grass Systematics and Evolution. Amount: \$90,000. Duration: 2 years.

National Science Foundation. 1985. Campbell, C. S., M. E. Barkworth, K. W. Hilu, and T. R. Soderstrom. International Symposium on Grass Systematics and Evolution. Amount: \$19,600. Duration: 1 year.

Virginia Polytechnic Institute and State University, College of Arts and Science Small Project Grant. 1982. Hilu, K. W. Utilization of Restriction Maps of Chloroplast DNA in the Systematics and Evolution of Grasses. Amount: \$2,500. Duration: 2 years.

Virginia Polytechnic Institute and State University, College of Arts and Sciences Small Projects Grant. 1981. Hilu, K. W. Systematics of the United States *Andropogon* (Poaceae). Amount: \$1,050. Duration: 1 year.

Grants Funded for Postdoctoral Fellows:

German Academic Exchange Service (DAAD). Postdoc Scholarship. 2003-2004. Quandt, D. Phylogenetic limitations of fast evolving genes: evaluating the phylogenetic signal, structure and resolution in land plants. Amount: \$~19,000. Duration: 6 months.

National Science Foundation. Soreng, R. J. 1987. Evidence From Chloroplast DNA and Comparative Anatomy and Morphology. Amount: \$26,400. Duration: 1 year.

INVITED SYMPOSIA:

Species Formation in *Aegilops* and *Triticum*. In Grasses and Grasslands Symposium, Botanical Society of America Meeting, Oklahoma State University, Stillwater, 1979.

Germplasm Resources of Finger Millet: Problems and Prospects. In the Symposium on Germplasm Resources: Conservation and Utilization, Botanical Society of America Meeting, Colorado State University, Fort Collins, 1984.

Chloroplast DNA in the Systematics and Evolution of Grass. In Grass Systematics and Evolution Symposium, held at the Smithsonian Institution, 1986.

Chloroplast DNA and Prolamin Structure in the Poaceae. In the symposium Multi-disciplinary Approaches to the Systematics of the Gramineae and Cyperaceae, held at the XIV International Botanical Congress, Berlin, August 1987.

Taxonomy of Cultivated Plants. Presented at the International Germplasm Workshop, organized by the International Board for Plant Genetic Resources of the United Nations and North Carolina State University, Raleigh, North Carolina, August 1987.

Numerical analyses of quantitative immunological data. Presented at the International Conference on Numerical Taxonomy held at The University of Toronto, October, 1989.

Application of Restriction Fragment Length Polymorphism to the Characterization of Small Millets Germplasm. Presented at the 2nd International Workshop and Conference on Small Millets, Zimbabwe,

April, 1991.

Genetic Diversity and Resources of Small Millets: Molecular Approaches. In the symposium Genetic Diversity and Resources of Crop Plants held during the XV International Botanical Congress in Yokohama, Japan, August 1993.

Polyploidy and the Evolution of Domesticated Plants. In the symposium Domestication Process in Crop Plants held during the XV International Botanical Congress in Yokohama, Japan, August 1993.

Genetic Variation and Evolution of Cultivated-Wild Plant Complexes. In the symposium Evolutionary Dynamics of Cultivated and Wild Plants organized by the Japanese National Institute of Genetics, Mishima, September 1993.

The Implication of DNA and Protein Variation in Grass Systematics. In the International Conference on the Systematics and Evolution of the Poaceae, Main Botanical Garden, Russian Academy, Moscow, Russia, September 1994.

Hilu, K. W. The *matK* gene: Application to grass systematics and beyond. In the 13th Conference on Morphology, Anatomy and Systematics to be held in Utrich, Belgium in April 1997.

Hilu, K. W. and L. Alice. A phylogeny based on *matK* sequences of subfamily Chloridoideae. In Monocot II - Third International Symposium on Grass Systematics and Evolution, University of New South Wales, Sydney, Australia, 1998.

Hilu, K. W. Contributions of Prolamin Size Diversity and Structure to the Systematics of the Poaceae. In Monocot II - Third International Symposium on Grass Systematics and Evolution, University of New South Wales, Sydney, Australia, 1998.

Thomas Borsch, Khidir W. Hilu, Conny Löhne, John Wiersema. 2005. Phylogeny and evolutionary patterns in Nymphaeaceae: integrating genes, genomes and morphology. **Symposium:** Nymphaeaceae - the "first" globally diverse clade. XVII International Botanical Congress, 2005, Vienna, Austria.

Hilu, K. W., S. Magallon, and D. Quandt. 2005. Patterns and rates of evolution in land plants: Fast vs. slow evolving genes. **Symposium:** Dating divergence of angiosperm radiation: progress and prospect. XVII International Botanical Congress, 2005, Vienna, Austria.

Quandt, D., K. Muller, K. W. Hilu, and T. Borsch. 2005. Inversions and length mutations in chloroplast DNA and their phylogenetic utility. **Symposium:** Molecular phylogenetic approach to the evolution of bryophytes. XVII International Botanical Congress, 2005, Vienna, Austria.

Hilu K. W. A century of progress in grass systematics. 2005. The opening talk at a special symposium: A celebration of grasses. Linnaean Society of London and the Royal Botanic Gardens Kew, England. **(opening talk to the conference)**

Döring, Elke, Khidir W. Hilu, Martin Röser. 2005. Molecular phylogeny of the Poaceae tribe Aveneae. **Symposium:** A celebration of grasses. Linnaean Society of London and the Royal Botanic Gardens Kew, England.

Quandt D, Borsch T, Wicke S, Won H, Renner S. S., Hilu K.W. Land plant evolution: a perspective from fast evolving chloroplast regions. "Botany 2006", Botanical Society of America Annual Meeting, Chico, California.

Hilu, Khidir W., Susana A. Magallón and Dietmar Quandt. 2007. When different genes tell the same story: Diversification of land plants. 11th Evolutionary Biology Meeting 2007, September 19-21, Marseilles.

Hilu, K., Susana Magallón, D. Quandt. 2010. When different genes tell a similar story: Emergence of angiosperms. **Invited talk** at the 2010 European Paleobotany and Paleontology Conference, Budapest, Hungary, in a symposium entitled "Tracing The Early Angiosperms".

Crawley, S. S. and K. W. Hilu. 2011. Rapidly evolving plastid *matk* gene and *trnk* intron sequences inferring phylogeny of the order Caryophyllales (angiosperms). Symposium of the Journal of Systematics and Evolution, Lhasa, Tibet, China.

Magallón, Susana, Khidir Hilu, and Dietmar Quandt. 2011. The age and rate of molecular evolution of major land plant lineages: the influence of differential substitution rates and of fossil constraints. To be presented at the 2011 International Botanical Congress in Melbourne, Australia, in a symposium entitled "Dating the Plant Tree of Life: Biological and Methodological Questions"

Hilu, K. W. and Sunny S. Crawley. 2012. Genes, genomes and efficacy in discerning dimensionalities of the tree of life. Annual Meeting of the Society of Molecular Biology and Evolution, Dublin, Ireland

INVITED TALKS:

Origin and evolution of crop plants: finger millet (*Eleusine coracana*). University of Oklahoma, 1978.

Systematics of crop plants with special emphasis on finger millet. University of California, Riverside, 1979.

Domestication of *Eleusine coracana*. California State Polytechnic University, Pomona, 1980.

Systematics and evolution of the Poaceae. Virginia Tech, 1981.

The role of single-gene mutations in the evolution of flowering plants. Genetics Group, Virginia Tech. 1982.

Flowering Plants: Macromutations, simple inheritance and evolution above the species level. University of Virginia, Charlottesville, Virginia. 1983.

The role of single-gene mutations in the evolution of flowering plants. Department of Horticulture, Virginia Tech. 1984.

Ethnobotany of the Algerian Oases. Horticulture Club, Virginia Tech. 1985.

Macromutations, simple inheritance and evolution in flowering plants. Smithsonian Institution, Department of Botany. 1985.

Molecular approaches to grass systematics and evolution. Department of Botany, Duke University. 1988.

Molecular approaches in the breeding of finger millet. Departments of Biology and Crop Science, Egerton University, Kenya. 1989.

Chloroplast DNA and ribosomal RNA genes as molecular markers in plant breeding. Department of Genetics, College of Agriculture, Cairo University, Egypt. 1990.

The use of ribosomal and chloroplast DNA in the classification of germplasm resources. Department of Genetics, Estaco Agronomica Nacional, Oeiras, Portugal. 1990.

Genetic diversity and evolution in crops: Molecular approaches. Horticulture Department, Virginia Tech. 1993.

A botanist in the Sahara Desert. Banquet speaker for the annual meeting of the Phi Sigma Society, Virginia Tech. 1994.

Plants and Humankind: A Voyage Through History. Banquet speaker for the annual meeting of the Phi Sigma Society, Virginia Tech. 1994.

The application of DNA sequencing to plant systematics: the *matK* gene. Presented at the Botanisch-Paläobotanische Abteilung, Forschungsinstitut Senckenberg, Frankfurt, Federal Republic of Germany, April 1996.

Molecular genetic diversities and nutrition of millets. An invited lecture for the First Pan-African conference of the Biochemical and Molecular Society held in Kenya, 1996. Invitation declined because of time factor.

Teaching economic botany at the college level. The annual meeting of the Virginia Academy of Sciences. 1997.

Our major crops in North America: Are they all native? The annual meeting of the Virginia Academy of Sciences. 1997.

A phylogeny based on *matK* sequences of subfamily Chloridoideae. Presented at Monocot II - Third International Symposium on Grass Systematics and Evolution, University of New South Wales, Sydney, Australia, 1998.

A phylogeny of Poaceae and subfamily Chloridoideae based on chloroplast DNA *matK* sequences. on chloroplast DNA *matK* sequences. Presented at the 1998 AIBS meeting in Baltimore, Maryland.

Contributions of Prolamin Size Diversity and Structure to the Sytematics of the Poaceae. Presented at Monocot II - Third International Symposium on Grass Systematics and Evolution, University of New South Wales, Sydney, Australia, 1998.

Genomic evolution of finger millet: molecules vs. morphology. Clemson University, Department of Horticulture. 2000.

Current concepts in angiosperm phylogeny. Instituto di Biologia e Biotecnologia Agraria, Milan, Italy, 2004.

Contribution of *matK* to plant pylogenetics: A one gene story. Instituto de Biología, Universidad Nacional Autónoma de México, 2004.

matK and plant pylogenetics, Institute of Biology, Technological University of Dresden, Germany, 2004.

Hilu, Khidir. 2007. Flowering plants: a rearranged branch in the tree of life (ATOL). Virginia Academy of Science Annual Meeting. *Invited Special Speaker for the Botany Section*.

Hilu, Khidir. 2007. Progress in the systematics and evolution of angiosperms-the ATOL group. International Research and Development Center, Montpellier, France.

Hilu, Khidir. 2008. Filling some gaps in the Hollow Curve: a look at patterns of species diversification. Department of Botany, University of Florida, Gainesville, FL.

Hilu, K. W. 2008. Molecular dynamics of Unconventional gene *matK*. The Institute for Advanced Learning and Research, Danville, VA. 2008.

Khidir W. Hilu. 2009. Polyploidy and Biodiversity: Evaluating Underlying Associations. International Conference on Polyploidy, Hybridization and Biodiversity, Sant Malo, France.

Hilu, K. W. and M. Al-Rubeai. 2009. Establishing a National Science Research Foundation (NSRF) for Iraq. Conference on Scientific Research Role in Iraq National Development, Baghdad, Iraq.

Hilu, K. W. and M. Al-Rubeai. 2009. Plant Biodiversity Center for Iraq, Serving Agriculture, Medicine and Land Reclamation. Conference on Scientific Research Role in Iraq National Development, Baghdad, Iraq.

Hilu, K. W. 2010. Molecular phylogenetics and character optimality. Department of Systematic and Evolutionary Botany, University of Vienna, Austria.

Hilu, K. W. 2010. Character sampling and taxon density in molecular phylogenetics: How much is enough? Department of Plant and Environmental Sciences, University of Gothenburg, Sweden.

Hilu, K. W. 2011. Detecting deep and shallow histories of land plants. Paleobotanical Institute, Nanjing, China.

Hilu, K. W. 2011. Assessment of Crops biodiversity: Plant sciences, Agriculture and bioinformatics. Workshop at Salahaldeen University and Koya University, Iraq.

Hilu, K. W. 2012. Gene choice, cost effectiveness and phylogenetic reconstruction. Department of Plant Biology, University of Vermont, Sept. 2012

Hilu, K. W. and Sunny S. Crawley. 2012. Genes, genomes and efficacy in discerning dimensionalities of the tree of life. Annual Meeting of the Society of Molecular Biology and Evolution, Dublin, Ireland.

DEPARTMENTAL AND UNIVERSITY SEMINARS:

Flowering Plants: Macromutations, Simple Inheritance and Evolution Above the Species Level. 1983.
Domestication, origin and evolution of finger millet. 1984.

Algerian Oases: Culture and Agriculture. 1985.

Speciation: plants versus animals. 1985.

Grass systematics and diversity: where to draw the line. 1986.

Utility of chloroplast DNA in grass systematics and cereal genetics. 1986.

- Evolution of crop plants. Genetics Seminar Series. 1988.
- Molecular vs. traditional approaches in grass systematics. Botany Seminar Series. 1989.
- Molecular evidence for the evolution of finger millet. Botany Seminar Series. 1990.
- Biology and socio-economics of coffee production. Botany Seminar Series. 1990.
- Evolution of the 5S ribosomal gene loci in higher plants. Biology Department. 1992.
- Uses and abuses of molecular biology techniques for systematics and evolution. Biology Depart. 1992.
- Evolution and systematic application of 5S gene loci in plants. The Genetics Seminars. 1992.
- Polyploidy and plant domestication: What is the connection? Botany Seminar series. 1993.
- Genetic diversity in crops: molecular approaches. Department of Horticulture Seminar Series. 1993.
- Origin, evolution and dispersal of crop plants: Old and new evidence. Botany Seminar Series. 1994.
- Russian scientists I have met. Presented at the Botany Seminar series, Fall 1996.
- A botanist in Russia. Presented at the first meeting of the Botany Seminar series, Fall 1997.
- Algerian Oases: Culture and Agriculture. Presented at the Botany Seminar series, Spring 1998.
- The Swiss Alps: A botanical treasure. The Virginia Tech International Program.
- Evolution of Flowering Plants: Traditional and Current Approaches. Botany Seminar, Virginia Tech. 2001.
- Chromosomal Evolution and Phylogeny: Is it a Circular Argument? EEB Seminar series, Virginia Tech 2003.
- Gene tempo, bioinformatics and biodiversity – insights from our lab. GBCB Seminar Series, 2006.
- Land plant diversification: Molecular and bioinformatics perspectives of a green revolution. Department. EEB, Virginia Tech 2006.
- Assembling the Tree of Life: Lessons from the green branches. GBCB Seminar series, Virginia Tech 2009.

FIELD WORK:

- Germplasm collection trip of wild species of finger millet in Kenya (1986).
- Germplasm collection of pearl millet and other semi-arid crops in Algeria (1984).
- Field trips in Virginia, Maryland and North Carolina (1981-present).
- Numerous field trips in Southern California to study flora and various types of plant communities (1978-79).
- Field trips to various parts of Oklahoma illustrative of specific vegetation types (1977-1978).

Thirty-day field trip to the southwest United States with Dr. David Seigler collecting specimens for research projects (May-June 1974).

Field trips through most of Illinois to study the elements, ecology and evolution of the vegetation (1972-1976).

TEACHING ACTIVITIES:

Virginia Tech; September 1981-present

- Plants and Civilization (Biology 2204); lectures, Winter 1982-1985, Fall 1985-present.
- Plant Taxonomy (Biology 3204); lectures and laboratory, Spring 1985-Present.
- Botanizing the Alps (BIOL 4984), summer 2000-present, International summer course taught at the Virginia tech facility in Switzerland.
- Plant Biosystematics (Biology 5214); lecture and laboratory, Spring 1982-Present.
- Molecular Techniques and Population Ecology; Spring 2000.
- Evolutionary Biology (BIOL 2704); Spring 2002.
- Plant Biology (Biology 2300); lectures, Winter 1983, Spring 1984, 1985, 1986.
- Independent Study (Biology 5980 and 4980); Application of Modern Biosystematic Techniques to Fungal Systematics; 1982-present.
- Special Study (Biology 5970); Polyploidy and Heterosis; team taught with Bruce Wallace and Bruce Turner; Spring 1982.
- Botany Seminar (Biology 5111); Fall 1982, Winter, 1983, Spring 1983.
- Grasses and Grasslands (Biology 5970); Spring 1986, 1987.

Oklahoma City University; August 1977 - July 1978

- Introductory Botany (Biology 2214); lecture and laboratory, Spring 1978.
- General Biology (Biology 1214); lecture and laboratory, Fall 1977, Summer 1978.
- Ecology and Field Biology (Biology 0313); lecture, discussion sessions and field trips, Spring 1978.
- Cell Physiology (Biology 3514); lecture and laboratory, Fall 1977.
- Special Research Topics (Biology 4000); Fall 1977, Spring 1987.
- Initiated and assisted in directing a noon seminar entitled "Topics in Biology".

PROFESSIONAL ACTIVITIES AND SERVICES:

National and International Service:

- Chairman and then member of the Publicity Committee for the American Society of Plant Taxonomy, 2009-2010.
- Co-organized a symposium entitled "Land plants evolution: Phylogenetics and beyond" with Dr. Brent Mishler of the University of California, Davis, for the Centennial meeting of the Botanical Society of America, held July 2006 in Chico, California.
- As part of my 1998 Fulbright Award, I spent six weeks of 1999 at the Universite Ibnou Zohr, Department de Biologie. I interacted with colleagues at the College of Sciences, set up a molecular facility, and conducted preliminary work on the molecular genetics of *Argania*, an economic tree native to Morocco.
- Member of the editorial board for the South American Journal Kurtziana; 1999-present, Journal of Systematics and Evolution (2006-present), and member of the International Review Board of the journal Annals of Botany.
- **Co-organizer of** a session for the 3rd International Symposium on Grass Systematics and Evolution held in conjunction with the 2nd International Conference on Monocots at The Royal Botanic Gardens, Sydney, Australia in 1998.
- Co-Chaired a session on grass systematics at the 1997 annual meeting of the American Institute of Biological Sciences, held in Montreal, Canada.
- Established a molecular biology laboratory at Egerton University, Kenya, for use in plant genetics and breeding as part of a grant sponsored by the U. S. Agency for International Development. 1993-1997.
- Participated in a meeting of journal editors of the American Institute of Biological Sciences societies to formulate a unified literature citation format. The meeting was in response to my *BioScience* article on this subject. 1994.
- Judged the presentations at the Genetics Section of the Botanical Society of America meeting in Knoxville, Tennessee, for the Margaret Menzel Award. 1994.
- Member of the editorial body of the Plant Genetics Newsletter, the Botanical Society of America, 1992-present.
- Representative of Virginia Tech on IGE-60, Peanut Molecular Biology, 1994.
- Reviewed a book proposal on Grasses for the CRC Press Inc. 1993.
- Member of the Subcommittee on Agriculture and Forestry of the Botanical Society of America Committee "Agenda 2000", 1992-present.
- Member of the Review Panel for the U.S. Agency for International Development, Program in Science and Technology Cooperation, 1992.
- Member of the Committee of Plant Protection Placement Panel, the U.S. Agency for International Development, 1992.

- Member of the Nomination Committee of the American Association for Plant Taxonomists, 1991-1992.
- Member of the Recommendation Committee for the Second International Workshop of Small Millets, April 1991, Zimbabwe.
- Reviewed the "Codes of Conducts for International Collectors of Germplasm" for the Food and Agricultural Organization, United Nations. January 1990.
- Panel member of The World Hunger Discussion, Virginia Tech, 1989, 1993.
- Organized an international symposium on the Systematics and Evolution of Grasses held at the Smithsonian Institution in July 1986. Co-organizers: Thomas Soderstrom, Christopher Campbell and Mary Barkworth. The symposium was sponsored by the Smithsonian Institution, American Institute of Biological Sciences, and National Science Foundation.
- Presided over Session 5 of the American Society of Plant Taxonomy meeting; joint meeting with the Botanical Society of America and The American Institute of Biological Sciences, 1985.
- Organized and chaired a symposium entitled "The Biological Bases of Adaptation in Grasses" during the 1983 annual meeting of the Botanical Society of America. Co-organizer: Thomas Soderstrom of the Smithsonian Institution. Proceedings of the symposium published in the Annals of the Missouri Botanical Garden (Vol. 72, No. 4, 1985).
- Invited by the International Board of Plant Genetic Resources to lead a mission to collect germplasm of cereals and other crops from Algeria; September-October, 1984.
- Consultant for the Food and Agricultural Organization of the United Nations.
- Pre-edited the proceeding of the symposium "The Biological Bases of Adaptation in Grasses" for the Annals of the Missouri Botanical Garden.
- Edited the proceedings of The International Symposium on Grass Systematics and Evolution for publication by the Smithsonian Press.
- **Scientific journals reviewed for:**

American Naturalist, Aquatic Botany, Molecular Phylogenetics and Evolution, Molecular Ecology, Journal of Molecular Evolution, Plant Biology, Taxon, American Journal of Botany, Australian Journal of Botany, Biochemical Systematics and Ecology, Systematic Botany, Economic Botany, Annals of Botanical Review, Evolutionary Biology, Proceedings of the National Academy of Science, Theoretical and Applied Genetics, Bulletin of The Torrey Botanical Club, Journal of Heredity, Genome, Novon, Annals of the Missouri Botanical Garden, Canadian Journal of Botany, Journal of Australian Systematic Botany, South African Journal of Botany, Theoretical and Applied Genetics, Journal of Genetic Resources and Crop evolution, Crop Science, International Journal of Plant Sciences, Hereditas, Euphytica, Bulletin of Mathematical Biology, Bothalia, Annals of Botany, Rhodora, Journal of Cereal Science, BMC-Evolutionary Biology, Systematic Biology.

Granting and International Agencies

National Geographic Society
 National Science Foundation
 British National Environmental Research Council

United Nations Development Program
 United States Agency for International Development
 United States National Research Council
 United States Department of Agriculture
 Research Council of the Katholieke Universiteit Leuven, Belgium
 Deutsche Forschungsgemeinschaft (DFG)
 Austrian Science Fund

Membership in Professional Societies:

Have been a member of:

American Association for the Advancement of Science
 The American Society of Naturalists (1985–1994)
 American Society of Plant Taxonomists
 Botanical Society of America
 International Association for Plant Taxonomy
 Society of Molecular Biology and Evolution
 Society for Economic Botany
 Southern Appalachian Botanical Club
 The Association of Southeastern Biologists
 California Botanical Society (1978-1982)
 The Virginia Academy of Sciences
 Sigma Xi
 Phi Beta Delta

PROFESSIONAL MEETINGS ATTENDED:

National Meetings

Botanical Society of America (most of meetings 1972-present)

AIBS Annual Meetings.

Annual Systematics Symposia of the Missouri Botanical Garden, St. Louis (several 1972-present)

Midwestern Systematists Conference, University of Wisconsin at La Crosse, 1973.

Annual Meetings of the Society of Economic Botany (several meetings 1972-present)

Annual Meeting of California Botany Graduate Students, California Polytechnic State University, San Luis Obispo, 1979.

USDA Western Regional Meeting, University of California, Davis, 1979.

Annual Meetings of the Society for Study of Evolution and the American Naturalists Society.

Annual Meeting of the Horticulture Society of America, Virginia Tech, Blacksburg, 1985.

Beltsville Symposium XIII on Biotic Diversity and Germplasm Preservation--Global Imperatives, 1988.

AAAS annual meeting, San Francisco. 1989.

Virginia Academy of Science Annual Meeting, Blacksburg, VA, 1991, 1996, 1997.

The American Society of Systematic Biologists, University of California, Berkeley. 1992.

Annual Meeting of Food Science and Human Nutrition Section of Southern Association of Agricultural Scientists, Nashville, Tennessee, 1994.

The 13th Symposium on morphology, anatomy and systematics, Utrich, Belgim, 1997.

The 1996 and 1997 Annual meeting of the Virginia Academy of Sciences.

International Meetings (Presented 11 invited talks)

International Symposium on Grass Systematics and Evolution, Smithsonian Institution, Washington, D.C. 1986.

International Botanical Congress 1987 (Berlin), 1992 (Yokohama), 2000 (St. Louis), 2005 (Vienna).

International Germplasm Workshop of the International Board For Plant Genetic Resources, North Carolina State University, Raleigh. 1987.

International Conference on Numerical Taxonomy, University of Toronto, 1989.

Second International Workshop and Conference on Small Millets, Bulawayo, Zimbabwe, 1991.

The XV International Botanical Congress in Yokohama, Japan, 1993.

The Japanese National Institute of Genetics Meeting, Mishima, Japan, 1993.

International Conference on the Systematics and Evolution of Poaceae, Main Botanic Garden, Russian Academy, Moscow. 1994.

The Annual Conferences on Morphology, Anatomy and Systematics held in Utrich, Belgium, 1996, and Jena, Germany 1999.

Invited to the Fourth Biennial Conference of the Systematics Association, Dublin, Ireland, 2003.

Invited to attend a special meeting "Celebration of Grasses" organized by The Royal Botanical Garden at Kew, England, and the Royal Linnaean Society, 2005.

11th Evolutionary Biology Meeting 2007, September 19-21, Marseilles.

Monocots 4 International Conference, Stockholm, August 2008.

United Kingdom Biochemical Society conference on "Protein evolution - sequences, structures and systems," Cambridge, England.

Conference on the reconstruction of education and technology in Iraq, Baghdad 2009.

International Conference on Polyploidy, Hybridization and Biodiversity, Saint-Malo, France, May 2009.

2010 European Paleobotany and Paleontology Conference, Budapest, Hungry.

2011 Meeting organized by the Journal of Systematics and Evolution in Tibet

2012 The Society of Molecular Biology and Evolution Conference, Dublin, Ireland

2013 Botanical Society of America, New Orleans, U. S. A.

2014 XXXIII Congress of the Willi Hennig Society held in Trento, Italy

DEPARTMENTAL AND UNIVERSITY SERVICES:

Graduate Student Advisory Committees:

Major Advisor and Committee Chairman:

John L. Randall (Masters program, Biology, 1981-1984). Biosystematic studies of North American *Trisetum spicatum* (Poaceae).

John L. Randall (Doctoral program, Biology, 1985-1988). Pollination study of *Impatiens pallida* and *I. capensis* (Balsaminaceae).

Michael Pillay (Doctoral program, Biology, 1987-1991). Evolutionary studies in *Bromus* (Poaceae).

John Kell (Doctoral program, Biology, 1988-1991). Molecular approaches to the evolution of *Prunus* (Rosaceae). Student ceased his graduate studies.

Diane Kruger (Biology, 1990-1991). Molecular studies in porso millets (Poaceae). Student ceased her graduate studies.

Carol Mandelbaum (B.S., Biology, Undergraduate Honor Student, 1991-1993). Ethnobotany and nutrition of millets.

Hongping Liang (Ph.D., Biology, 1993-1997). Phylogeny of the grass family based on DNA sequences of the *Mat K* gene.

William Speer (Masters Program, Biology, 1994-1997). Molecular systematic studies in bracken fern, *Pteridium aquilinum*.

Irene Boyle (M.S.; Biology, 1997- 2000). Molecular Characterization of Prolamin Genes in *Oryza* (Poaceae).

Kristi Niehaus (M.S.; Biology, 2000-2004). Speciation in the waterlily species *Nymphaea odorata*.

Michelle Barthet (Ph.D.; Biology 2003- Jan. 2006). Expression and function analysis of the chloroplast intron-encoded *matK* gene.

Sheena Friend (Ph.D.; Biology 2005-present). Species and gene evolution in the peanut genus *Arachis* (Fabaceae).

Sunny Drysdale (Ph.D.; Biology 2005-present). Molecular and systematic studies based on the plastid gene *matK*.

Stephanie Voshell (Ph. D.; Biology 2009-2014). Phylogeny, Biogeography and cheomosome evolution in canary grasses (Poaceae).

Alex Sumadijaya (MS. Biology 8/ 2012-present). Fulbright Fellow from Indonesia.

Co-Advisor:

Thomas Borsch (Ph.D., Systematics and Biodiversity, University of Bonn, 1997-2000). Phylogeny and Evolution of *Nymphaea*: A Model Study.

Elke Döring (Ph.D., Biology, Martin-Luther University; 2004-present). Molecular systematics of Aveneae, family Poaceae, grasses.

Amal Harb (Ph.D.: Biology/VBI- 2007-Present), co-advised with Dr. Andy Pereira (VBI)

Atia M. Atia (Ph. D.; Botany 2009-present), co-advisor with Fareida El-Saeid, University of Mansura, Egypt.

Undergraduate Students Advisory

Advisor for 12-32 students every year.

2-7 students per year have been trained in research in my lab

Career advisor for Biotechnology Option students in the Department

University and Departmental Committees and Services

Director of the Massey Herbarium

Supervisor of the greenhouses of the Biology Department, Virginia Polytechnic Institute and State University, September, 1982-present. Supervise 1-2 technicians working at the Department of Biology Greenhouses.

Research Day Committee

Member of the Biology-Virginia Bioinformatic Institute Plant Research Facility

University Greenhouses Committee, member 1982-present.

Member of the College of Science Promotion and Tenure committee 2005-2007, 2013-2014

Associate curatorship of Virginia Polytechnic Institute and State University Herbarium, September 1981-present.

Co-chair of the seminar committee of the Virginia Tech Molecular Cell Biology and Biotechnology (MCBB) program (1992–1995).

University Committee for Restructuring Graduate Courses of Genetics and Plant Breeding. (1994).

Selection Committee of Intern Students for Kenya, International Development.

Panel member for The World Hunger Discussion, 1989, 1993.

Coordinator of the Organismal Biology Section of the Biology Department, 1993-present.

Collection Committee, member Fall 1981-Spring 1982, chairman Fall 1982-Summer 1983, member Fall 1983-1985.

Executive-Personnel Committee, 1983-1985; 1999-2000; 2008-2009.
College of Science Tenure and Promotion committee

Graduate Student Diagnostic and Qualifying Committee, Fall 1984-Spring 1985.

Biology Department Search Committee for Molecular Biologists, Winter 1985-Spring 1986.

Chairman of the Biology Department Computer Workshop, 1994-1995.

Agronomy Department Search Committee for Plant Geneticist, Spring 1989.

Graduate Students Selection Committee, Fall 1986-1990.

Graduate Students Recruitment Committee, 1989.

Representative of Virginia Tech on the IEG-60, Peanut Molecular Biology, Southern Experiment Station Group, Southern Exchange Group, 1995-present.

Panel member of three review committees of HATCH projects, College of Agriculture, 1985-present.