

Curriculum Vitae

Clair H. Hershey

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Education

- 1978: PhD, Cornell University. Major field – Plant Breeding; Minor fields – Entomology; International Agriculture
- 1973: BA, Millersville University, PA. Major field – Biology

Professional and Business Experience

- 2011 – present: Cassava Program Leader, International Center for Tropical Agriculture (CIAT), Cali, Colombia
 - Lead an interdisciplinary team of scientists to develop cassava technologies that raise farmer incomes, improve food security and protect the environment
 - Member of interim Management Committee for the CGIAR Program for Roots, Tubers and Bananas (CRP-RTB)
 - Coordinate a team to produce the first volume of CIAT's flagship publication, *Issues in Tropical Agriculture*
- 2009 – 2010: Visiting Scientist at FAO's Global Partnership Initiative for Plant Breeding Capacity Building (GIPB), Rome, Italy.
 - Finalized 5-year business plan
 - Coordinated development of an online course on pre-breeding (<http://km.fao.org/gipb/e-learning/gipb-pre-breeding-course/en/>)
 - Project development according to Business Plan priorities
 - Development of funding proposals
 - Knowledge Resource Center development (<http://km.fao.org/gipb/>)
 - Presented GIPB goals and activities to partners at several international forums.
- 2009–Present: Developer and moderator, Plant Breeding Forum
 - A listserv-based forum, sponsored by FAO, for discussion of relevant topics among plant breeders
 - Approximately 300 subscribers
- 2002–Present: Editor, Plant Breeding News
 - Produce a monthly electronic newsletter for plant breeders and related interests, distributed to 1500 subscribers (sponsored by FAO and Cornell University; <http://www.fao.org/ag/AGP/agpc/doc/services/pbn.html>)
 - Transformed newsletter into a subscriber-driven, convenient, condensed, timely information source and forum for professional interaction
- 1992–Present (active to 2009): Partner, Hershey Brothers Farms (Lancaster County, PA, USA)
 - Crop and financial manager for a diversified crop and cattle farm

- Provided the lead in growing a 130-year-old family business
- 1992–2009: Consulting in breeding/genetic resources projects and agricultural development, including:
 - Bioversity: Edit and provide content for the Crop Genebank Knowledge Base for cassava
(http://croppgenebank.sgrp.cgiar.org/index.php?option=com_content&view=article&id=132&Itemid=232)
 - Global Crop Diversity Trust (Rome) and CIAT (Cali, Colombia): Develop, along with stakeholders, a global strategy for the conservation of cassava genetic resources (<http://www.croptrust.org/main/strategies.php?itemid=354>)
 - Brazil: Assisted in cassava breeding program development for national program (six weeks)
 - Suriname: Evaluation of cassava production and marketing system for US Peace Corps; established country's first cassava germplasm collection (two weeks)
 - FAO, Rome: Task Force for the Global Partnership Initiative for Plant Breeding Capacity Building (GIPB)
 - FAO, Rome: Consultant for Global Cassava Development Programme – planning meetings and document preparation (three months)
 - CIAT, Cali, Colombia: Various consultancies, including advising Cassava Breeding program on strategic planning; writing the 25-year history of the Cassava Program; Interim Head, Cassava Program (four months)
- 1978-1991: Senior Scientist - Plant Breeder, Cassava Program, International Center for Tropical Agriculture (CIAT), Cali, Colombia

As Curator of the global cassava germplasm collection:

- Doubled collection size through new collections and introductions
- Coordinated field and in vitro activities to optimize conservation resource use and security
- Developed a comprehensive information management system, integrated with breeding program
- Convened several international meetings on cassava genetic resources that resulted in upgraded global management systems
- Established a core collection
- Extensive evaluations for agronomic and consumer traits
- Complete morphological and isozyme characterization
- Broad use of landraces in breeding program
- Safe, targeted interchange of seeds and clones with national programs

As Cassava Breeder:

- Extensive incorporation of CIAT-developed germplasm into commercially successful varieties adopted by national programs and used locally as a base for further breeding
- Developed and supervised a globally-oriented genetic improvement program involving over 100 hectares of experimental fields throughout Colombia, with 40 staff members
- Established an innovative agro-ecosystem based breeding system for global germplasm development
- Developed a comprehensive information system that integrated all levels of

- germplasm and breeding system management
 - Defined effective methodologies for improving cassava productivity under edaphic, climatic and biological stresses
 - Global collaboration to improve capacity of national breeding programs, through training and germplasm exchange
 - Regular seed and in vitro shipments to programs in Latin America and Asia, as a basis for long-term crop improvement
 - Developed and managed a five-year IFAD-supported project to improve cassava for the semi-arid tropics of Brazil and Africa
 - Leadership in forming the Latin American Cassava Breeders' Network, with triennial meetings and ongoing interchange of information and germplasm
- 1986: Adjunct Associate Professor of Plant Breeding, Dept. of Agronomy, Penn State University (ten-month sabbatical leave from CIAT)
 - 1974-1978: Graduate student, Dept. of Plant Breeding and Biometry, Cornell University (Rockefeller Foundation Fellow)
 - 1976-1977: Visiting researcher, International Center for the Improvement of Maize and Wheat (CIMMYT), El Batan, Mexico (PhD thesis research)
 - 1973; 1974 (summers): Agronomy Assistant, Penn State's Southeast Agricultural Research and Extension Center, Landisville, PA

Professional Memberships

- American Society for the Advancement of Science
- Crop Science Society of America
- American Society of Agronomy
- International Society for Tropical Root Crops

Service Organizations

- International Foundation for Science (Sweden) (Scientific Advisor)
- MidAtlantic Food and Farm Coalition (Steering Committee)
- Farmers Market Alliance (Steering Committee)
- Growing New Farmers (a project of the New England Small Farm Institute) (Advisor)
- Manheim Central Foundation for Educational Enrichment (Board Member)

Languages

Spanish – good writing and verbal skills

Selected Publications

- Ceballos, H., Hershey, C. and Becerra-López, L.A. (In Press) New approaches to cassava breeding. *Plant Breeding Reviews*, J. Janick, ed.
- Ceballos, H. Kulakow, P. and Hershey, C. 2012. Cassava Breeding: Current Status, Bottlenecks and the Potential of Biotechnology Tools. *Tropical Plant Biol.* DOI 10.1007/s12042-012-9094-9
- El-Sharkawy, M.A., Hernandez, A. del P. Hernandez and C. Hershey. 1992. Yield stability of cassava during prolonged mid-season water stress. *Experimental Agriculture* 28(2):165-174.
- Henry, G. and C. Hershey. 2002. Cassava in South America and the Caribbean. In: R.J. Hillocks, J.M. Thresh and A.C. Bellotti (eds.). *Cassava: Biology, Production and Utilization*. CABI Publishing. p. 17-40.
- Hershey, C.H. In press. *Cassava Genetic Improvement: Theory and Practice*. FAO, Rome. (A comprehensive field and desk reference for cassava genetic improvement practitioners and related interests)
- Hershey, C.H., C.A. Iglesias, M. Iwanaga and J.M. Tohme. 1992. Definition of a core collection for cassava. In: 1st Meeting of the International Network for Cassava Genetic Resources. Cali (Colombia). 18-23 Aug 1992. *International network for cassava genetic resources : report*, Rome. International Plant Genetic Resources Institute. p. 145-156.
- Hershey, C.H. 1994. *Research for development: The CIAT cassava program*. Cali (Colombia) : Centro Internacional de Agricultura Tropical . 99 p.
- Hershey, C., G. Henry, R. Best and C. Iglesias. 1997. *Cassava in Latin America and the Caribbean: Resources for global development*. Regional Review Report, IFAD, Rome.
- Hershey, C.H., G. Henry, R. Best, K. Kawano, R. Howeler and C. Iglesias. 2001. Cassava in Asia: Expanding the competitive edge in diversified markets. In: *A review of cassava in Asia with country case studies on Thailand and Vietnam*. Vol. 3. FAO and IFAD, Rome. P. 1-62.
- Henry, Guy and C.H. Hershey. 1998. Trends, constraints and opportunities of the Asian cassava sector an assessment. In: Howeler, Reinhardt H. *Regional Workshop*. Hainan (China). 3-8 Nov 1996. *Cassava breeding, agronomy and farmer participatory research in Asia : proceedings*. Bangkok (Thailand). Centro Internacional de Agricultura Tropical, Regional Cassava Program for Asia. p. 3-20.
- Hershey, C.H. and R.H. Howeler. 2001. Cassava in Asia: Designing crop research for competitive markets. In: R.H. Howeler and S.L. Tan (eds.). *Cassava's potential in Asia in the 21st Century : Present Situation and Future Research and Development Needs*. Proc. 6th Regional Workshop, held in Ho Chi Minh City, Vietnam, Feb. 21-25, 2000. Bangkok, Thailand : Centro Internacional de Agricultura Tropical, CIAT Cassava Office for Asia. p. 110-146.
- Iglesias, C.A., F. Calle, C.Hershey, G. Jaramillo and E. Mesa. 1994. Sensitivity of cassava (*Manihot esculenta* Crantz) clones to environmental changes. *Field Crops Res.* 36:213-220.

Iglesias, C.A. and C.H. Hershey. 1994. Cassava breeding at CIAT: Heritability estimates and genetic progress in the 1980s. *Acta. Hort. (ISHS)* 380:149-163.

Iglesias, C.A. and C.H. Hershey. 1994. True cassava seed: Research for a production alternative. *Acta. Hort. (ISHS)* 380:164-171.

Ocampo, C., F. Angel, G. Jaramillo, C.H. Hershey, E. Granados, C.A. Iglesias. 1994. DNA fingerprinting to confirm possible genetic duplicates in cassava germplasm. In: 2nd International Scientific Meeting. Bogor (Indonesia). 22-26 Aug. 1994. Cassava Biotechnology Network : proceedings, Cali (Colombia). Centro Internacional de Agricultura Tropical. 1995, v. 1 p. 145-151. Working document no. 150.

Thro, A.M., M. Fregene, N. Taylor. C.J.J.M. Raemakers, J. Puonti-Kaelas, C. Schopke, R. Visser, I. Potrykus, C. Fauquet, W. Roca and C. Hershey. 1999. Genetic biotechnologies and cassava-based development. In: T. Hohn and K.M. Leisinger (eds.). *Biotechnology of Food Crops in Developing Countries*. Springer Verlag, Wien. p. 139-185.