curriculum vitae

CHRISTOPHER ASHLEY CULLIS
Case Western Reserve University

University Education

1968-71	Ph.D., University of East Anglia in Genetics, 1971
1967-68	M.Sc., University of East Anglia in Biophysics, 1968
1964-66	B.Sc., (Honors) London University (as external student at University College of Rhodesia)

Employment

2000-2002	Program Director, Plant Genome Research Program, National Science Foundation
1994-	Francis Hobart Herrick Professor of Biology
1989-93	Dean of Mathematics and Natural Sciences, Case Western Reserve University
1986-	Professor of Biology, Case Western Reserve University
1985-86	Visiting Professor, Department of Biology, Case Western Reserve University
1982-83	Visiting Professor, Department of Biological Sciences, Stanford University
1973-85	Staff member, John Innes Institute, Norwich, England
1971-73	ARC Postdoctoral Fellow at John Innes Institute
1967	Teacher, Chemistry, Physics, Prince Edward High School, Harare Zimbabwe
1998-	Founder and President, NovoMark Technologies Ltd.

Scholarships, Fellowships

1996	Summer Ethics Fellow, CWRU
1982-83	Civil Service (Nuffield and Leverhulme) Traveling Fellowship
1970-71	University of East Anglia Postgraduate Award
1967-70	Commonwealth Postgraduate Scholarship
1966	Milward Bursary
1964-66	Rhodesian Government Scholarship

Honors

1999	Mortar Board "Top Prof" award
1998	Elected Fellow Ohio Academy of Science
1997	Nominated for SCST and Kendall/Hunt Publishing Co. 1998 Outstanding Undergraduate Science Teacher Award
1997	Nominated for Wittke Award (for undergraduate teaching)
1996	Nominated for Wittke Award (for undergraduate teaching)
1992-	Member, Who's Who Worldwide
	Listed in - Who's Who Worldwide - Platinum Edition
	Who's Who in America
	American Men and Women in Science

Service

University

2002-	Director, MS Program in Biotechnology Entrepreneurship
1998- 2001	Chair, Advisory Committee to Center for Science and Math Education
1995-6	Chair, Faculty Senate, CWRU
1995-7	Chair, Faculty Advisory committee, Alpha Phi Omega
1994-5	Chair, Executive Committee of the College of Arts and Sciences
1994-5,99-	Member, Advisory Committee for the University Center for Innovation in Teaching and Education
1994-7	Member Executive Committee of the College of Arts and Sciences
1994-7	Member, Faculty Senate, CWRU
1994-6	Member, College Scholars Committee
1994-7	Member, Dean's Advisory Committee for Case Alumni Association

1994-8	Member, Advisory Committee to the President for Hewlett Funds
1994-	Faculty advisor Alpha Phi Omega
1992/3	Acting Chair, Department of Statistics
1991	Acting Chairman, Department of Mathematics and Statistics
1989	Member of Search Committee for Dean of Science, Case Western Reserve University
1988	Consultant to University of Pennsylvania, Clarion, on new undergraduate course offerings in Molecular Biology
1987-88	Chairman, Faculty of Mathematics and Natural Sciences Promotion and Tenure Committee, Case Western Reserve University
1978-85	Chairman, Genetic Manipulation Safety Committee, J11
1978-85	Honorary Lecturer, University of East Anglia
1969-70	Chairman, Graduate Student Association, UEA
	Member of Senate and Council, UEA

Science Community

2003-	Advisory Board member, NuPlant Ltd., Australia
1998-	Member Advisory Board, Lakeland Community College Biotechnology Program
1996-	Participant in “Bridges “ program with Cuyahoga Community College.
1998	Member site visit team for NSF Program on the Plant Genome (2 site visits)
1998	NSF proposal reviewer
1995-	Honorary Editor, “Natural Fibres”
1992/3/4	Panel Member, National Science Foundation, Plant Biology Program and Interdisciplinary Program
1991-	Member, Research Committee, Holden Arboretum
1991-4	Trustee, International Federation of Conservators and Wildlife
1990	Consultant to Maine Biotechnology Board
1989-90	Panel Member for USDA Competitive Grants Program in Plant Genetics and Molecular Biology
1985-88	Editorial Board member, Plant Molecular Biology Reporter
1979-82	Chairman, Cell Biology Committee and Member of Council, Society for Experimental Biology

Regularly review manuscripts for many journals

Pre-College Outreach

1997, 8	Organized and ran workshop for high school and middle school teachers at the National Association of Biology Teachers on “Human Genetics in the Classroom”
1996, 1998	“Teaching Human Genetics” for High School and Middle School Teachers
1995-	Organized and ran Biotechnology Equipment Loan Program for High Schools
1991-2000	Organized and taught high school teachers course on molecular biology in the classroom. Co-sponsored by Industry
1991-2000	Organized and taught high school students course on biotechnology. Co-sponsored by Industry
1992/3	Consultant to Project Discovery (Life Sciences). Developed Discovery module on Biotechnology for use in Middle Schools
1990	Organized and directed State-supported Gifted and Talented Summer program for 9th and 10th grade high school students
1990	Organizer, Governor's Summer Institute for Gifted and Talented, high school students
1990	Ohio Academy of Science Visiting Professor to Cleveland School of Science
1989	Consultant to Crista McAuliffe Award Winner to set up High School Science Teachers update/extension course in Molecular Biology/Biotechnology

International Meetings

1988	Organizer, Workshop on "Repetitive DNA" at International Genetics Congress
1987	Organizer and Chairman, Symposium, "Genome and Gene Structure" for XIV International Botanical Congress
1974;78;82;86	Organizing Committee, John Innes Symposia
1980	Co-organizer of Symposium on "The Nucleolus"
1975-78	Organizer, External Seminars, John Innes Institute

Teaching

BIOL 326/426	Genetics
BIOL 301/401	Laboratory in Molecular Biology/Biotechnology
BIOL491	Molecular Biology for Innovation I
BIOL 492	Molecular Biology for Innovation II
BIOL328/428	Plant Genomics and Proteomics
ARSC201, 202, 301, 302	College Scholars Program
BIOL 383/483	Seminar in Plant Science
BIOL 382/482	Topics in Biotechnology
BIOL 388/390	Undergraduate Research
	Biological Science Section in Health Careers Enhancement for Minorities Summer Program
Freshman Seminars	
1994 – 6, 1998	The Human Genome Project
1993	Of Plants, Food and Genetic Manipulation
1991	Tropical Deforestation
1989	Biotechnology and World Agriculture

Public Lectures

1998	Panel Member at University Club discussion on “Cloning”
1998	West Shore Unitarian Church on “The Human Genome Project”
1995,6,8	“The Human Genome Project” Lecture for Parents Weekend. CWRU
1995	“Dealing with DNA in Our Future” Annual Howard Hughes Lecture to high school students
1994	“DNA Fingerprinting” Public lecture at Loraine Community College
1990	"Agricultural Biotechnology" -- Guest lecturer in high school teachers course in Molecular Biology
1988	"Prospects for Plant Biotechnology" - Mini-College for Alumni at Case Western Reserve University
1987	"Biotechnology and World Agriculture" - in the Global Currents Series at Case Western Reserve University
1987	"Biotechnology and Crop Improvement" - Plenary Lecture to the National Association of Biology Teachers Annual Convention
1986	"Plant Biotechnology" in a symposium on "Economics of Biotechnology," Ohio Academy of Sciences Meeting, Toledo

Community Activities

1994-2000	Judge, Science and Societal Issues Symposium for high schools
1992	Member, Steering Committee for CRABS (Cleveland Regional Association of Biologists)
1990	Manager and Coach, Little League Baseball team
1990-	Visited numerous High Schools to give presentations on Genetics and to take part in discussions relevant to the Science and Societal Issues Symposia.
1989-94	Judge at Shaker Middle School Science Fair
1989-94	Committee Chairman, Pack 18 Boy Scouts of America, Winding Rivers District
1987-89	Cubmaster, Pack 18, Boy Scouts of America, Winding Rivers District
1988-90	Manager and coach, U-14 travelling soccer team

Research Interests

My main interest has centered around the regulation of the variation of the plant genome with particular reference to the interaction between the genome and stress environments. These studies are providing fundamentally new insights into possible mechanisms of evolution and stress adaptation. The studies have been concentrated on the environmentally induced heritable changes in flax. I also have a major interest in the determination of the nature of somaclonal variation in vegetatively propagated plants. The identification of the labile regions involved in this phenomenon are likely to lead to markers to screen in vitro plants for genomic integrity. This latter subject is the main focus of a NovoMark Technologies, a Biotechnology Company that I founded and still run.

Seminars

South Africa

2002 University of Natal, Pietermaritzburg
2000 Department of Botany, University of Pretoria
2000 Presenter – Annual Meeting of Genetics Society of Sout Africa, June
1998 Forest and Agriculture Biotechnology Institute, University of Pretoria
AECI Bioproducts, Natal
SA Sugar Experimental Station
SA Forests
1997 Rand Afrikaans University
University of Natal, Pietermaritzburg
Kynoch Plant Laboratories
AECI Research and Development Department

Malaysia

2002 University Putra Malayasia
1997 Palm Oil Research Institute of Malaysia

Korea

2002 Crop Functional Genomics Consortium – Invited Speaker

Europe

1995 University of Perpignan, France
1993 Max Plank Institute, Cologne, Germany
1991 University of Vienna, Austria
University of Rouen, France
1990 John Innes Institute, Norwich
ICI Seeds,
1985 Imperial College, London University
1984 Unilever Research, United Kingdom
1984 Queen Elizabeth College, London
1978, 1982 Genetics Department, Cambridge University
1980 Department of Botany, University Edinburgh
1980 Genetics Department, University of Aberdeen
1979 Genetics Department, Leeds University
1978 Genetics Department, Birmingham University
1976, 1979 Plant Breeding Institute, Cambridge University

United States

2002 National Center for Genome Research, New Mexico
2002 Biology Department, Case Western Reserve University
1999 Genetics Department, Case Western Reserve University
1993 Agriculture Biotechnology Center, University of Maryland, College Park

1992 Invited speaker- Symposium on "Evolution from the Inside" Graduate Student Symposium, University of Colorado at Boulder
1992 University of Illinois at Chicago
1991 University of Wisconsin-Madison
1991 Wayne State University, Detroit
1991 American Oil Chemists Soc. Invited speaker, Symposium on Flax
1991 AAAS meeting, invited speaker
1990 University of Connecticut
1989 University of Arizona, Tucson, AZ
1989 University of California, Riverside, CA
1989 University of Tennessee, TN
1989 Ohio State University, Columbus, OH
1988 Wooster Agriculture Experimental Station, Wooster, OH
1988 University of California-Davis, Davis, CA
1988 University of Kentucky, Lexington, KY
1988 University of New Hampshire
1987 University of Massachusetts
1987 Wayne State University, Detroit, MI
1987 Washington University, St. Louis, MO
1985 University of Oregon, Corvallis
1985 ARCO, California
1985 University of California, Davis, CA
1984 Monsanto Company, St. Louis, MO
1984 Plant Research Laboratories, Michigan State University, East Lansing, MI
1983 Calgene: Davis, California, CA
1983 Brookhaven National Labs
1983 McGill University, Montreal
1983 Purdue University, West Lafayette, IN
1983 Eli Lilly & Co., Indianapolis, IN
1983 Molecular genetics, Inc.
1983 Agrigenetics Advanced Research Labs, Madison, WI
1983 University of Wisconsin, Madison, WI
1983 University of Minnesota, St. Paul, MN
1983 Washington University, St. Louis, MO
1983 University of Florida, Gainesville, FL
1983 University of Georgia, Athens, GA
1983 University of Washington, Pullman,
1983 University of Washington, Seattle, WA
1983 Oregon State University, Corvallis
1983 University of Utah, Salt Lake City, UT
1980 Department of Botany, University of Washington, Seattle, WA
1980 UCSD Department of Biology
1980 UCLA Department of Biology
1980 Carnegie Institution, Stanford, CA,

Australia

2000 CSIRO Division of Plant Industry
1986 Department of Genetics, Monash University
1986 Division of Biological Science, University of Sydney
1986 Research School of Biological Sciences, Australia National University
1986 Department of Genetics, University of Adelaide
1986 Departments of Genetics & Botany, University of Melbourne
1983, 1986 Gippsland Institute of Advanced Education
1983 University of Melbourne
1983 C.S.I.R.O. Division of Plant Industry, Canberra

Invited Lectures-International Meetings

Genome Size- A discussion Meeting, Kew Botanical Gardens, England September 10-11, 2003

Invited Keynote Speaker - Microplant Quality and Stress in In Vitro Culture to be held in University College, Cork 26-29 August 2003.

Plant Science Symposium, Iowa State University. June 2003

Molecular & Cellular Biology of Bananas, KUL, Belgium. “Markers for genomic integrity” September 2002

“Plant Genome Research Program” for the First International Virtual Genomics Conference October 2001

Molecular and Cellular Biology of Bananas, Byron Bay, Australia. October 29 – November 3, 2000

"TEBIO 2000"International Meeting and Exbibition, Genoa, Italy. May 2000

Quality Assurance markers for the vegetative propagation Industry. Cork, Ireland August 1999

Presentations to the International Plant Tissue Culture Congress June 1998:

1.Involvement of biotechnology in commercial plant tissue culture.
2. Isolation of tissue culture-induced polymorphisms in bananas by representational difference analysis.

International Congress for Plant Molecular Biology, Singapore, 1997. “Isolation of rapidly varying sequences in flax by representational difference analysis”.

Invited Speaker, Modern Concepts in Evolutionary Genetics - Novosibirsk, Sept 9-12, 1997

Third Meeting of The International Flax Breeding Research Group, France, Nov 1995

Invited participant “Heat Tolerance in Temperate Cereals” -Australia/US Binational workshop, Hawaii, Feb 1994

Invited Speaker, XV International Botanical Congress, Tokyo. August 1993

Keynote Speaker, FAO Flax Meeting, Brno, Czechoslovakia, June 1991

Ribosomal RNA genes in Pines - IUFRO Congress, Montreal, 1990

"Environmentally Induced DNA Changes in Plants" Symposium on Atmospheric Pollution and Plant Growth, April 1989

"The Ribosomal RNA Genes in Pinus radiata" Workshop at International Genetics Congress, 1988

"Unstable Regions of the Flax Genome” XIV International Botanical Congress, Berlin. Chairman and Speaker in Symposium on Genome and Gene Structure, July, 1987

International Union of Forestry Research Organizations Workshop on Molecular Biology of Trees, Petawawa National Forestry Research Institute, Canada, June, 1987

"Is the Plant Genome Stable?" "New Perspectives in Plant Science," April 1987
Annals of Botany Centenary Meeting, Kew Gardens, London,

Evolutionary Concepts in Biology and Society, April 1986, Key West, Florida

Australian Biochemical Society Meeting, Melbourne, Australia, May 1986

"Plasticity in Plants" Society for Experimental Biology Symposium No. 40, Durham, UK, September 1985

"Plant Genetics" UCLA Symposium at Keystone, CO, April 1985

"Genetics, Molecules, and Evolution" 17th Stadler Genetics Symposium, Columbia, MO, March 1985

"Implication of Molecular Genetics in Plant Breeding" 11th Annual Minnesota Plant Biology Symposium, June 1984

"Instabilities and Plant Gene Structure" Bayer Symposium, Cologne W. Germany, October 1983

Cold Spring Harbor Course on Plant Molecular Biology, June 1983

"Genetic Rearrangement" 5th John Innes Symposium, September, 1982

Session chairman and contributor at Federation of European Biochemical Societies Workshop on "Transposable Elements in Eukaryotes," March 1981

"The Nucleolus" SEB Seminar Series, December 1980

"The Plant Genome" 4th John Innes Symposium, September, 1979
"The Modification of the Information Content of Plant Cells"2nd John Innes Symposium, July 1974

C.A. CULLIS Grant Support as PI

Agricultural Research Council Genetic Manipulation Program Post-doc 1978-9

Isolation of kinetochores from Luzula pilosa. Agrigenetics Corporation 1983-6

Environmentally induced heritable changes in flax. USDA 1986-1988

Characterization of the genome of Pinus radiata. USDA 1986-8

Plant Molecular Biology Program at CWRU Ohio Board of Regents 1987-90

Governor's Summer Institute for Gifted and Talented. Ohio Department of Education.
"Frontiers in Science and Engineering" 1-1-1990 - 8-24-1990

Celbi - RFLP mapping in Eucalyptus 5-1-1990 - 4-30-1991

National Institutes of Health. Biomedical Research Support Grant 4-1-1990 - 3-31-1992

Summer Institute for high school teachers. Edison Biotech Center (from US Biochemical) 1992

Isolation of Rust Resistance Genes from Flax. USDA 1991-4

Postgraduate Fellowship. Mastin Foundation 1991- to present (endowed)

Postdoctoral support. Mastin Foundation 1992

Math and Physics tutoring program. Hewlett Foundation 1992-3

Mastin and Second Foundations - Biotechnology programs for teachers and students. 1994

Frankino Foundation for support of High School Biotechnology Program - 1996

Integration and Expansion of Offerings in Molecular Biology and Genetics in the Undergraduate Curriculum. Hewlett Endowment 1997-8

Redesigning Genetics Education to be a discovery and problem solving activity. Nord Grant 8/98 – 7/99

Amersham-Pharmacia Proposal for $3,500 for supplies for equipment loan program. Awarded 1998-2001

Mechanisms of rapid genomic changes in flax.	USDA	9/1/2000 - 8/31/2002
Plant Genome Research Program Director	NSF	8/20/00 – 8/20/02

Students and Post-doctoral Fellows supervised.

Postdoctoral Fellows	Current Position
T.H.N. Ellis	Principal Scientific Officer, John Innes Institute
B.A. Bowen	Senior Scientist at Lynx Theraputics
G. Creissen	Senior Scientific Officer, John Innes Institute
K.J. Aldrich	Assistant Dean for Technology Transfer, University of Wisconsin, Madison
M. Agarwal	Research Scientist, Cleveland Clinic Foundation
D.R. Govindaraju	Cytogenetics Fellow, Yale University
R. Lowenfeld	Current Post-doctoral Fellow, CWRU

Graduate Students	Degree	Year	Current Position
P. Goldsbrough	Ph.D	1981	Professor, Purdue University
D. Coates	Ph.D.	1983	Head, Dept. Genetics, Leeds University
P. Zimmerman	Ph.D.	1992	Assistant Professor, CWRU
R. Schneeberger	Ph.D.	1992	Scientist, CERES Corporation
S. Gorman	Ph.D.	1992	Patent Lawyer
Y. Song	MS	1993	Director, Genomics Facility, U Cincinnati
E. Davidowitz	Ph.D.	1993	Post doctoral Fellow, Alert Einstein College of Medicine
Y. Chen	Ph.D	1999	Postdoctoral Fellow, Cleveland Clinic
T. Oh	Ph.D.	2000	Senior Scientist, NovoMark Technologies LLP
C. Bester	Ph.D.		University of Pretoria, current student
J. Voster	M.Sc.		University of Pretoria, current student
Namita Bose	M.S.	2003	

Participated as a committee member for numerous MS and Ph.D. candidates.

Patents

Patent awarded April 2002. "Method for Finding Genetic Markers of Somaclonal Variation".

Provisional Patent submitted March 2003 "A Method For The Isolation of Markers and Genes Underlying Quantitative Trait Loci."

PUBLICATIONS

Text Books

Plant Genomics and Proteomics John Wiley and Sons 2003

Refereed Journals

1. Cullis, C.A. 1972. The Basis of cell-to-cell transformation in Paramecium bursaria. I. Transfer of cytoplasmic material. J., 601-609. Sci.

2. Cullis, C. A. 1972. The Basis of cell-to cell transformation in Paramecium bursaria. II. Investigation into the molecular nature of the transforming agent. J. Cell Sci. 11, 611-619.

3. Cullis, C. A. 1973. DNA amounts in the nuclei of Paramecium bursaria. Chromosoma 40, 127-133.

4. Cullis, C. A. 1973. DNA differences between flax genotypes. Nature 243, 515-516.

5.Cullis, C. A. and D. R. Davies, 1974. Ribosomal RNA cistron number in a polyploid series of plants Chromosoma 46, 23-28.

6. Cullis, C. A. and D. Schweizer) 1974. Repetitious DNA in some anemone species. Chromosoma 44, 417-421.

7. Cullis, C. A. 1975. Ribosomal RNA cistron number in Nicotiana species and derived haploids. Chromosoma 50, 435-441.

8. Cullis C. A. 1975. Environmentally induced DNA changes in flax. IN: Modification of the information content of plant cells. eds. R. Markham, D. R. Davies, D. A. Hopwood, and R. W. Horne, 27-36.

9. Cullis, C. A. and D. R. Davies) 1975. Ribosomal DNA amounts in Pisum sativum. Genetics 81, 485-492.

10. Cullis, C. A. and K. Kolodynska) 1975. Variation in the isozymes of flax (Linum usitatissimum) genotrophs. Biochem. Genet. 13, 687-697.

11. Cullis, C. A. 1976. Environmentally induced changes in ribosomal RNA cistron number in flax. Heredity 36, 73-80.

12. Cullis, C. A. 1976. Chromatin-bound DNA-dependent RNA polymerase in developing pea cotyledons. Planta (Berl.) 13, 293-298.

13. Cullis, C. A. 1977. Molecular aspects of the environmental induction of heritable changes in flax. Heredity 38, 129-154.

14. Cullis, C. A. 1978. Chromatin-bound DNA-dependent RNA polymerase in developing pea cotyledons. II. Polymerase activity and template availability under different growth conditions. Planta 144, 57-62.

15. Cullis, C. A. 1979. Quantitative variation in the ribosomal RNA genes in flax genotrophs. Heredity 42, 2, 237-246.

16. Cullis, C. A. 1979. Segregation of the isozymes of flax genotrophs. Biochem. Genet. 17, 291-401.

17. Cullis, C. A. 1980. DNA sequence organization in flax. Heredity 44, 292.

18. Goldsbrough, P. B., T. H. N. Ellis and C. A. Cullis 1981. Organization of the 5S RNA genes in flax. Nucleic Acids Research 9, 5895-5904.

19. Cullis, C. A. and L. Charlton 1981. The induction of ribosomal DNA changes in flax. Plant Sci. Lett. 20, 213-217.

20. Cullis, C. A. 1981. DNA sequence organization in the flax genome. Biochim. et Biophys. Acta. 652, 1-15.

21. Goldsbrough, P. B. and C. A. Cullis 1981. Characterization of the genes for ribosomal RNA in flax. Nucl. Acid Res. 9, 1301-1309.

22. Cullis, C. A. 1981. Environmental induction of heritable changes in flax: defined environments inducing changes in rDNA and isozyme band pattern. Heredity 47, 87-94.

23. Cullis, C. A. 1981. The induction of ribosomal DNA changes in flax.Heredity 46, 286.

24. Davies, D. R. and C. A. Cullis) 1982. A simple plant polytene chromosome system and its use for in situ hybridization. Plant Mol. Biol. 1:301-304.

25. Coates, D. and C. A. Cullis 1982. The chloroplast DNAs of flax genotrophs. Plant Mol. Biol. 1, 183-189.

26. Rivin, C. J. and C. A. Cullis) 1983. Modulation of repetitive DNA in the maize genome. Genetics 104, 559-560.

27. Rivin, C. J., Cullis, C. A. and Walbot, V. A. 1986. Evaluating quantitative variation in the genome of Zea mays. Genetics. 113: 1009-1019.

28. Cullis, C. A. and Cleary, W. 1986. Rapidly Varying DNA Sequences in Flax. Can. J. Genet. Cytol. 28: 252-259.

29. Cullis, C. A. and Cleary, W. 1986. DNA variation in flax tissue culture. Can. J. Genet. Cytol. 28: 247-251.

30. Coates, D. and Cullis, C. A. 1987. Chloroplast Variability among Linum Species. Am. J. Bot. 74: 260-268.

31. Blundy, K. S., Cullis, C. A. and Hepburn, A. G. 1987. Ribosomal DNA Methylation in a Flax Genotroph and a Crown Gall Tumor. Plant Molec. Biol. 8: 217-226.

32. Coddington, A., Matthews, P.M., Cullis, C. A., and Smith, K. H. 1987. Restriction Digest Patterns of Total DNA From Different Races of Fusarium oxysporium f. sp. pisi - an improved method of race classification J. Pytopathology 118: 9-20.

33. Bowen, B. A., Lee, D., Creissen, G. P., Marks, G. E. and Cullis, C. A. 1988. The Ribosomal DNA of Luzula pilosa (L), a Plant with Holocentric Chromosomes. Genome 30: 915-923.

34. Schneberger R.G., Gorman, S.W. and Cullis, C.A. 1988 Effect of NaOH on hybridization efficiency of Southern-transferred DNA Trends in Genetics 4: 328

35. Zimmerman, P., Lang-Unnasch, N. and Cullis, C. A. 1989 Hypervariable Regions in Plant Genomes Detected by an M13 Probe Genome 32: 824-828.

36. Schneeberger, R. G., Creissen, G. P. and Cullis, C. A. 1989 Chromosomal and Molecular Analysis of 5S RNA Gene Organization in Flax, Linum usitatissimum Gene 83: 75-84.

37. Govindaraju, D. R. and Cullis, C. A., Modulation of genome size in plants: The influence of breeding systems and neighborhood size. Heredity. .

38. Schneeberger, R. S. and Cullis, C. A. 1991 Specific DNA alterations associated and the environmental induction of heritable changes in flax. Genetics 128: 619-630.

39. Agarwal, M. L. and Cullis, C. A. 1991 The ubiquitin genes in flax. Gene. 99: 69-75.

40. Govindaraju, D. R, Lewis, P. and Cullis, C. A. 1992 Phylogenetic analysis of pines using ribosomal DNA restriction fragment length polymorphisms. Plant Systematics and Evolution 179 141-153

41. Govindaraju, D.R. and Cullis, C.A. 1992 Ribosomal DNA variation among populations of a pitch pine (Pinus rigida Mill) ecosystem: I. Copy numbers. Heredity 69:133-140

42. Gorman, S.W., Roberts-Oehlschwager, S.L., Cullis, C.A. and Teasdale, R.D. 1992 Producing a bacteriophage P1 library from Pine – Isolation and cloning of very high molecular weight DNA. Biotechniques 12: 722 - 725

43. Campell, B., Posch, T., Song, Y., Cullis, C.A. and Town, C.D. 1992 The 5S RNA genes in Arabidopsis thaliana Gene 112:225-228.

44. Gorman,S.W., Teasdale, R.D. and Cullis, C.A. 1992 Structure and organization of the 5S RNA genes in Pinus radiata (D. Don). Plant Systematics and Evolution 183:223-234

45. Schneeberger, R.G. and Cullis, C.A. 1992 Intraspecific 5SrRNA gene variation in flax, Linum usitatissimum, L.. Plant Systematics and Evolution 183:265-280.

46. Gorman, M. B., Cullis, C. A. and Alldridge, N. 1992 Genetic linkage analysis of isozyme polymorphisms in flax. J. Heredity. 84:73-80.

47. Agarwal. M.L., Aldrich, J., Agarwal, A. and Cullis, C.A. 1992. The flax ribosomal RNA-encoding genes are arranged at a single locus interspersed by “non-rDNA” sequences. Gene 120:151-156.

48. Aldrich, J. and Cullis, C.A. 1993 RAPD analysis in flax: Optimization of yield and reproducibility using KlenTaq1 DNA polymerase, Chelex 100 and gel purification of genomic DNA. Plant Molecular Biology Reporter 11 128-141.

49. Davidowitz, E.J., Cullis, C.A. and Lang-Unnasch, N. 1994 Messenger RNA from diverse classes of alfalfa leghemoglobin genes show a similar pattern of spatial expression in symbiotic root nodules. Plant and Soil 162:303-307.

50. Cullis, C.A., Sogor, B., Lachvayder, J. (1998) A Biotechnology Resource Center in NorthEast Ohio. American Biology Teacher 60: 182-184

51. Cullis, C.A., Song, Y., Swami, S. (1999) RAPD polymorphisms in flax genotrophs Plant Mol Biol 41:795-800

52. Oh, T. Gorman, M. and Cullis, C.A. (2000) RFLP and RAPD mapping in flax (Linum usitatissimum). Theoret Appl Genet 101: 590-593

53. C. A. Cullis and K. Kunert (2000) Isolation of tissue culture-induced polymorphisms in bananas by representational difference analysis. Acta Horticulturae 530: 421-428

54. B.J. Vorster, K.J. Kunert, C.A. Cullis 2002 Rpresentational difference analysis for the characterization of sequence differences between date palm varieties Plant Cell Reports 21: 271-275

55. T. J. Oh and C. A. Cullis. (2003) Labile DNA Sequences in Flax Identified by Combined Sample Representational Difference Analysis (csRDA) Plant Molecular Biology Plant Mol Biol 52: 527-536

56. Kunert, K.J., Baaziz, M. and Cullis **C.A.** (2003) Techniques for Determination of True-to-type Date Palm (*Phoenix dactylifera* L.) Plants: A Literature Review. Emirates Journal of Agricultural Sciences *15 (1):1-16.*

<u>Books Edited</u>

Jordan, E. G. and C. A. Cullis 1982. The Nucleolus. CUP.

Chater, K. F., Cullis, C. A., Hopwood, D. A., Johnston, A. W. B., and Woolhouse, H.W. W "Genomic Arrangements." Croon Helm. 1983

Book Chapters

Cullis, C. A. 1984. Environmentally induced changes in genome size. In: "DNA and evolution - Natural selection and genome size." Ed. T. Cavalier-Smith, J. Wiley and Sons, pp. 197-209.

Cullis, C. A. 1985. Genomic Variation and stress. In: "Plant Gene Research 2."

Cullis, C. A. 1986. Plant DNA variation and Stress. IN: "Genetics, Molecules, and Evolution." Eds. G. L. Stebbins, F. J. Ayala, and J. P. Gustafson. Plenum Press, pp 143-155.

Cullis, C. A. 1986. Unstable Genes in Development. IN: "Plasticity in Plants." Eds. D. H. Jennings and A. Trewawas. The Company of Biologist, Ltd., pp. 77-84.

Cullis, C. A. 1988. Genomic Changes Induced by Environmental Perturbations. IN: Process and Metaphors in the New Evolutionary Paradigm." Ed. M-W Ho and S. W. Fox. John Wiley & Sons. pp. 49-62.

Cullis, C. A. 1990 Environmentally Induced Variation in Higher Plants and Associate Phenotypic Consequences. IN: Biotechnology in Forestry and Agriculture 11. 224-235

Cullis, C. A. 1991 Molecular analysis of plant responses to environmental stress IN "Ecological Genetics, Terrestrial vegetation and Anthropogenic changes in the Atmosphere" ed. G. E. Taylor, M. T. Clegg and L. F. Pitelka pp235-264

Cullis, C. A. 1991 The Molecular Biology of Plant Cells and Cultures in Comprehensive Biotechnology ed. M. W. Fowler and G. S. Warren. .

Cullis, C.A. 1991 Breeding for resistance for physiological stress.340-351 In Advanced Methods in Plant Breeding and Biotechnology. ed. David R. Murray CAB International UK

Cullis, C.A. Environmental Stress - a generator of adaptive variation? 1999 In “Plant Adaptations to Stress Environments” ed. H.R. Lerner. Marcel Dekker, New York pp 149-160

Cullis, C.A. The use of DNA Polymorphisms in Genetic Mapping. In Progress in Genetic Engineering, Ed. J Setlow Volume 24

Proceedings

Cullis, C. A. and P. B. Goldsbrough 1980. Variation in the ribosomal RNA gene number--a model system for DNA changes in flax genotrophs. Proc. Fourth JI Symposium 1979, 91-97.

Cullis, C. A. 1982. Quantitative variation of the ribosomal RNA genes in Nucleolus." eds. Jordan, E. G. and Cullis, C. A. pp. 103-112. CUP.

Cullis, C. A. 1983. Variable DNA sequences in flax. IN: "Genomic Arrangements." eds. Chater, K. F., Cullis, C. A., Hopwood, D. A., Johnston, A. W. B., and Woolhouse, H.W. W., Croon Helm.

Cullis, C. A. and Cleary, W. 1985. Fluidity of the Flax Genome. IN: "Plant Genetics." Ed. M. Freeling. Alan R. Liss, pp 303-310.

Cullis, C. A., Creissen, G. P., Gorman, S. W. and Teasdale, R.D. 1988. The 25S, 18S, and 5S Ribosomal RNA Genes from Pinus radiata IN: IUFRO Workshop on molecular Biology of Forest Trees. Ed. W. M. Cheliak and A. C. Yapa, 34-40.

Cullis, C. A., Alldridge, N., Aldrich, K. J. and Gorman, M. 1990 RFLP mapping in flax. Proceedings of the 53rd Flax Institute. 88-91.

Cullis, C.A. and Gorman, M.B. 1992 Construction of a linkage map in flax Proc. 54th Flax Institute

Cullis, C.A. and Gorman, M.B. 1992 Construction of a genetic map of flax using morphological, biochemical and RFLP markers. Proc. 2nd FAO flax group meeting

T. Jeongtaek Oh and Christopher A. Cullis, Genetic Mapping in Flax (Linum usitatissimum) (1996) Proceedings of the Flax Institute #53

Christopher A. Cullis, T. Jeongtaek Oh and Mark B. Gorman (1996) Genetic Mapping in Flax (Linum usitatissimum) Proceedings of the Third International Flax Breeding Research Group pp 161-170

Cullis, C.A.. Genomic response to environmental stress - an adaptive response? Proceedings of "Modern Concepts in Evolutionary Genetics". Ed. A. Markel (in press)

B. N. Okole, C. Memela, V. Chibba, S. Rademan, K. Kunert and C. Cullis (1999) Involvement of biotechnology in commercial plant tissue culture. Plant Biotechnology and In Vitro Biology in the 21st Century ed. A. Altman, M. Ziv, S. Izhar Kluwer Academic Press, The Netherlands pp725-728

C.Cullis and K. Kunert (1999) Isolation of tissue culture-induced polymorphisms in bananas by representational difference analysis. Plant Biotechnology and In Vitro Biology in the 21st Century ed. A. Altman, M. Ziv, S. Izhar Kluwer Academic Press, The Netherlands 245-248

K. Kunert, J. Vorster, E. Bey and C.A. Cullis. (2000) Representational difference analysis as a DNA-based quallity assurance procedure for date palm micropropagation. Proceedings of the Date Palm International Symposium. Windhoek, Namibiua. Pp 74-80. ISBN 99916-50-36-9

K. Kunert, J. Vorster, C. Bester and C.A. Cullis. (2002) DNA microchip technology in the plant tissue culture industry. In Crop Biotechnology. American Chemical Society Symposium series 829: 86-96

K. Kunert, M. Baaziz and C.A. Cullis. (2002)Techniques for determination of true-to-type date palm plants. In Tissue Culture of Date Palm (in press)

Botha Am, Lacock L, Van Niekerk C, Matsioloko Mt, Du Preez Fb, Myburg Aa, Kunert K, Cullis C.A. Gene expression profiling during Diuraphis noxia infestation of Triticum aestivum cv. 'Tugela DN' using microarrays. Proceedings of the 10th International Wheat Genetics Symposium, Paestum, Italy (1-6 September 2003). Volume 1 p. 334-338.
Author of the best paper presented in Session 6, Biotic and Abiotic Stresses at the 10th International Wheat Genetics Symposium, Paestum, Italy, 1-6 September 2003.

Reviews

Cullis, C. A. 1983. Environmentally induced DNA Changes in plants. CRC Critical Review in Plant Science 1, 117-129.

Walbot, V. A. and Cullis, C. A. 1985. Rapid Genomic change in higher plants. Ann. Rev. Pl. Physiol. 36: 367-396.

Cullis, C. A. 1986. Phenotypic Consequences of Environmentally Induced Changes in Plant DNA Trends in Genetics, 2:307-310.

Cullis, C. A. 1987. Biotechnology and Plant Productivity. Ohio J. Sci. 87: 143-137.

Cullis, C. A. 1987. The generation of somatic and heritable variation in response to stress. American Naturalist 130: s62-s73.

Cullis, C. A. and Creissen, G. P. 1987. Genome Organization and Variation in Higher Plants. Annals of Bot. 60: Supplement 4: 103-113.

Cullis, C. A., 1990 DNA rearrangements in response to environmental stress. In "Genomic Responses to Environmental Stress." Advances in Genetics ed. J. G. Scandalios. pp:73-97.

Cullis, C.A. 2002 The use of DNA Polymorphisms in Genetic Mapping Progress in Genetic Engineering, Ed. J Setlow

Others

Cullis, C. A. 1977. Environmentally inducted changes in ribosomal RNA cistron number. Purported lack of correlation with phenotype. A reply. Heredity 39, 177.

Walbot, V. A. and C. A. Cullis) 1983. The plasticity of the plant genome - Is it a requirement for success? Plant Molecular Biology Reporter 1, No. 4, 3-8.

Rivin, C. J., E. A. Zimmer, C. A. Cullis, V. Walbot, T. Huynh, and R. W. Davis 1983. Evaluation of genomic variability at the nucleic acid level. Plant Molecular Biology Reporter 1, 9-16.

Cullis C.A. (1997) Entering the Clone Zone The World and I Magazine (October 1997 issue)

BN Okole, K. Memals, R. Morris, K. Kunert and C.A. Cullis (1999) Involvement of Biotechnology in banana tissue culture. Banana Growers of South Africa, 1999 Year Book. Ed R. de Bruyn, pp33-38. Distributed by BGASA, Nelspruit, South Africa