

THE UNIVERSITY OF BRITISH COLUMBIA
Curriculum Vitae for Faculty Members

Fred D Sack Professor, Department of Botany, University of British Columbia, 6270 University Blvd., Vancouver, BC V6T 1Z4, Canada; Phone:(604) 827-4564; fsack@mail.ubc.ca



1. **SURNAME:** Sack **FIRST NAME:** Fred
MIDDLE NAME(S): David
2. **DEPARTMENT/SCHOOL:** Botany, University of British Columbia
3. **FACULTY:** Science
4. **PRESENT RANK:** Professor **SINCE:** 1997
5. **POST-SECONDARY EDUCATION**

University or Institution	Degree	Subject Area	Dates
Antioch College, Yellow Springs, Ohio, USA	B.A.	Sociology	1969
Cornell University, Ithaca, New York, USA	Ph.D.	Plant Biology (D. Paollilo)	1982

Special Professional Qualifications

6. **EMPLOYMENT RECORD**

(a) *Prior to coming to UBC*

University, Company or Organization	Rank or Title	Dates
Dept Plant Cellular & Molecular Biology, Ohio State Univ	Professor Emeritus	2006 -
Dept Plant Cellular & Molecular Biology, Ohio State Univ	Professor and Chair	2004-2006
Dept Plant Biology, Ohio State University	Professor	1997-2006
Dept Plant Biology, Ohio State University	Associate Professor	1990-1997
Dept Plant Biology, Ohio State University	Assistant Professor	1984-1990
Boyce Thompson Institute, Cornell University	Postdoctoral Fellow w Carl Leopold	1982-1984
Prison Health Services, Health Services Admin City of NY	Assistant Management Analyst	1973-1974
Health Servies Mobility Study, Research Foundation of the City University of New York	Research Analyst	1969-1972

(b) *At UBC*

Rank or Title	Dates
Professor	July 2011-
Professor and Head of Botany Department	July 2006 –June 2011

(c) *Date of granting of tenure at U.B.C.:* 2006 (at time of appointment)

7. **LEAVES OF ABSENCE**

University, Company or Organization at which Leave was taken	Type of Leave	Dates
John Innes Institute, Dept. Cell Biology, Norwich, England	Sabbatic Leave	1994

8. **TEACHING**(a) *Areas of special interest and accomplishments*

1984-2006: Courses taught at Ohio State University, PCMB 101: Plants, People, and the Environment (125 students); PCMB 300: General Plant Biology (75 students); Biology 113 (500); PCMB 643: Plant Anatomy (25); PCMB 648: Plant Cell Biology (25)

1976-1982 Teaching Assistant, Cornell University: Plant Anatomy, Plant Physiology, Biology, Introductory Botany, Electron Microscopy

(b) *Courses Taught at UBC*

Session	Course Number	Scheduled Hours	Class Size	Hours Taught				Tchg Eval
				Lectures	Tutorials	Labs	Other	
Jan 2008	210	3 lect, 3 h lab	180	16				4.0

(c) *Graduate Students Supervised*

Student Name	Program Type	Year		Principal Supervisor	Co-Supervisor	Current Position
		Start	Finish			
Gayathri Samarasekera	Ph. D.	2011		F. Sack		
Sandra Keerthisinghe	Ph. D.	2011		F. Sack		
Meng Li	M.S.	2011		F. Sack	Jim Mattson	
Sandra Keerthisinghe	M.S.	2008	2010	F. Sack		
Xuguang Liu	M.S.	2007	2010	F. Sack		
Neela Bhawe	Ph.D.	2003	2008	F. Sack		Postdoctoral Researcher, OSU
Zidian Xie	Ph.D.	2003	2009	E Grotewold	F. Sack	PDF, Univ. Hawaii, G. Presting
Jessica Lucas	Ph.D.	2000	2007	F. Sack		PDF, Indiana Univ, Sid Shaw
Matt Geisler	Ph.D.		1999	F. Sack		Asst Prof, Biology, S Illinois Univ
Liming Zhao	Ph.D.		1999	F. Sack		Research Molecular Biologist, USDA, Stoneville, Mississippi
Tanya Wagner	Ph.D.		1998	F. Sack		Homemaker
Ming Yang	Ph.D.		1996	F. Sack		Assoc Prof, Oklahoma State Univ
Loni Walker	Ph.D.		1994	F. Sack		Assoc Prof, Illinois Wesleyan Univ
Loni Walker	M.S.		1989	F. Sack		" "
Darci Richardson	M.S.		1989	F. Sack		Not known

(d) *Continuing Education Activities*(e) *Visiting Lecturer (indicate university/organization and dates)*(f) *Other***Undergraduate advising**

Many....

Senior UG Honours examiner, Katherine Wee, April 30, 2009

UG researchers in lab at UBC:

2010-2011 Evelyn Lee; Gloria Reid; Peter Hurley, Christine Pachowski, Frances Morin (summer fellowship)

2009-2010: Evelyn Lee; Yana Eglit; Fangyu Chi (Sherry); Kelvin Chong; Jeffrey Leone 09; Yoichiro Watanabe;

Gloria Reid; Sarah Hin Mui Au-Yeung; Wanda Lin (Biol 448); Florence Mousty (Univ. of Geneve) summer student

2006-2008 Tina Wang; Yan Xu; Sandra Keerthisinghe; Lin Tse Wang; Gary Chi; Bryan Holland; Sarah Desrosiers

Graduate advising

Oliver Dong, Ph D committee
 Yuan Ruan Ph D candidacy exam April 19th, 2011
 Gabriel Levesque Tremblay, Ph D candidacy exam December 15, 2010
 Yuanyuan Liu MS defense Au 2010; PhD candidacy exam Feb.15, 2010
 Ruonan Yao PhD candidacy exam 2010
 Rebecca Smith PhD candidacy exam 2010; fall 2008 MS advisory;
 T. Weihmann, Ph. D Candidacy examination Nov. 9, 2007
 Eiko Kawamura, Ph. D defense: Botany March 19, 2007
 Clarice DeSouza, Ph. D. defense Botany Aug 9, 2007
 Minako Kaneda, Ph D defense Dec. 15, 2008
 Eryang Li, Ph D defense April 6, 2009
 Jonathan Griffiths, Ph. D Candidacy exam Feb. 12, 2009; Advisory Committee,
 Jia Cheng, MS defense: April 8, 2009

Postdoctoral Researchers (and others) supervised (current positions):

EunKyoung Lee 2004-
 Qin Lei 2011-2013 Visiting Ph. D. student from Northwest Agriculture and Forestry University, Yangling, China
 Dr. Xiaolan Chen 2011-2012 Visiting Scholar, Lecturer in Life Sciences (Plant Physiology), Yunnan University, Kunming China, supported by 1 year research fellowship from home institute
 Jie Le 2006-2009; now, Professor, Center for Signal Transduction & Metabolomics, Institute of Botany, Chinese Academy of Sciences, 20 Nanxincun, Xiangshan (Fragrant Hill), Beijing 100093, China
 Sanjay Bhawe 2003-2006; now postdoctoral researcher in the Ohio State Univ. Cancer Center
 Alexander Skripnikov 2002-2004 now faculty member, Biology, Moscow State Univ. Russia
 Lien Lai 1999-2003, now Research Associate Dept. Biochemistry, Ohio State University
 Jeanette Nadeau, 1995-2003 Assistant Prof. in Biology, Univ. Central Florida, Orlando
 Stan Vitha 1996-98, Research Scientist, Microscopy & Imaging Ctr, Texas A & M Univ.
 Bratislav Stankovic, 1995-1997, Attorney, Intellectual Property, Godfrey & Kahn, Madison WI
 Volker Kern, 1995- 2005, Program Director, Paragon Corp., Aerospace Industry, AZ
 Jochen Schwuchow 1992-94, 1997, 2000-2002
 Robert Ridge 1990-91: faculty member Tokyo Women's Christian Univ. Japan
 John Kiss 1987-90, Professor, Miami Univ. Ohio
 Rosemary G White 1985-7 Director Microscopy Ctr, CSIRO Plant Industry, Canberra, Australia

Undergraduate student research supervised at UBC

Gloria Reid 2009-; Jae Yun Lee 2011-12, Sabrina Kuah 2011-12; Tina Wang, 06-07; Yan Xu 06; Sandra Keerthisinghe 07-08; Lin Tse Wang 07-08; Gary Chi 07-08; Bryan Holland 07; Sarah Desrosiers 07; Yana Eglit 07- 2010; Fangyu Chi (Sherry) 08-; Kelvin Chong 08-09; Jeffrey Leone 09-; Wanda Lin 2009-2010; Sarah Hin Mui Au-Yeung 2009-2010;

9. SCHOLARLY AND PROFESSIONAL ACTIVITIES**(a) *Areas of special interest and accomplishments***

Cellular and molecular biology of stomatal development
 Transcription factor regulation of cell cycling and endoreplication
 Auxin and pattern generation
 Developmental regulation of myrosinase cells
 Gravity sensing in plants

(b) *Research or equivalent grants (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC))*

Grant source	Subject	C	\$ Per Year	Year	PI	Co-I
NSERC RTI	Multi-optics light microscope for cell and developmental biology	C	\$120,458	2007 (April 1)	Fred Sack	C. Douglas, L. Kunst, G. Haughn
NSERC Discovery	Cell and molecular biology of stomatal development	C	\$ 59,660	2007 April -2011	Fred Sack	
CFI Leading Edge Fund	Centre for Microscopy of Intermolecular and Cellular Dynamics	C	\$1,626,592 (\$4,066,480 matched)	2007-2011	G. Wasteneys	F. Sack B. Finlay, N. Panté, L. Samuels, S. Mansfield, B. Leander, V. Auld, W. Jefferies, X. Li
NSF	Regulation of Stomatal Development in Arabidopsis	C	US\$388,300	2003 - 2007	Fred Sack	
NSF REU Supplement	Regulation of Stomatal Development in Arabidopsis	C	US \$18,000		Fred Sack	
NASA	Development of Gravity Sensitive Plant Cells In Microgravity	C	US \$720,354	1999 - 2006	Fred Sack	
NSF MUE – match from OSU & Ohio	A Wide-Field Deconvolution Microscope for Cell and Developmental Biology	C	US \$250,872 (\$130,872 from NSF)	2000 - 2003	Fred Sack	C Beattie, B Oakley, H. Vaessin, DP Verma
NSF	Role of the TOO MANY MOUTHS Gene in the Regulation of Asymmetric Divisions & Stomatal Patterning	C	US \$342,153	1999 - 2003	Fred Sack	
USDA	Role of the FOUR LIPS Gene Product in Stomatal Differentiation & Cell Cycle Regulation	C	US \$210,000	1999 - 2003	Fred Sack	Jeannette Nadeau
NASA	Development of Gravity Sensitive Plant Cells In Microgravity	C	US \$50,000	1998 - 1999	Fred Sack	Volker Kern
NSF REU	Undergraduate Supplement	C	US \$20,000	1996 - 1999	Fred Sack	
NASA	Differentiation and Tropisms in Space-Grown Moss (<i>Ceratodon</i>)	C	US \$286,393	1995 - 1999	Fred Sack	
NSF: Devel Mechanisms	Mutational Analysis of Stomatal Development in <i>Arabidopsis</i>	C	US \$304,044	1995 - 1999	Fred Sack	
NASA	Development of Gravity Sensitive Plant Cells (<i>Ceratodon</i>) In Microgravity	C	US \$20,000	1998	Fred Sack	
NASA	Re-evaluation of the Role of Starch in Gravitropic Sensing	C	US \$255,278	1995 - 1998	Fred Sack	
NASA	Gravitropism and Autotropism in Cress Roots	C	US \$155,976	1995 - 1998	Fred Sack	
NASA, Phase A definition	Development of Gravity Sensitive Plant Cells (<i>Ceratodon</i>) In Microgravity	C	US \$10,000	1997	Fred Sack	
NASA: GSRP	Role of Microtubules in Gravitropism of Moss Protonemata	C	US \$66,000	1994-1997	Fred Sack	Tanya Wagner

NASA	Mutational & Cell Biological Analysis of Gravitropism in <i>Ceratodon</i>	C	US \$148,858	1993 - 1996	Fred Sack	
Amer Society Cell Biology	Summer High School Teacher Research Fellowship	C	US\$10,000	1991	Fred Sack	Lois Cooper
NASA	Graduate Student Researchers Program	C	US \$66,000	1990 - 1993	Fred Sack	Loni Walker
NSF	Instrumentation for Equipping a New Plant Biology Course for Non-Majors	C	US \$146,500	1990 - 1993	Fred Sack	D. Kramer, R Seymour
NASA	Graviperception in Higher Plants: <i>Arabidopsis</i> as a Model System	C	US \$210,000	1988 - 1992	Fred Sack	
NASA	Cellular Polarity in Plant Graviperception	C	US \$160,000	1985 - 1988	Fred Sack	
NSF Systematics	Transmission Electron Microscope	C	US \$80,900	1985 - 1987	G Floyd	Tom N Taylor, Gary Floyd, Fred Sack

(c) Research or equivalent contracts (indicate under COMP whether contracts were obtained competitively (C) or non-competitively (NC)).

(d) Invited Presentations

2011 Cornell University, Dept. Plant Biology, Ithaca NY November 10th
2011 Washington University, St. Louis, Missouri, Invited by Plant Biology graduate students: Nov. 7th
2010 International Conference on Arabidopsis Research Yokohama June 9th, Talk selected from abstracts
2009 Ohio State University, Dept. Plant Cell Molec Biology, May 13
2008 Canadian Society Plant Physiologists 50th Annual Mtg, Ottawa, Plenary talk, June 16
2008 Plant Biotechnology Institute, National Research Council, Saskatoon, Saskatchewan April 23
2008 Graduate Program in Molecular Plant Sciences, Washington State University, March 28
2008 Dept. Microbiology, Molecular Biology and Biochemistry, Univ. Idaho, Moscow, March 27
2007 Department of Biology, McGill University Oct. 22
2007 UBC, Centre for Plant Research, Feb 9
2007 Univ Toronto, Cell Systems Biology, Jan. 26
2006 Amer Soc Plant Biology Symposium on Stomata and Transpiration, Snowbird Utah Oct. 13
2005 Ohio Wesleyan University, Oct. 20
2005 Plant stem cell workshop, Juan March Foundation/EMBO, Madrid, May 23-25
2005 Dept. Plant Systems Biology, University of Ghent, Belgium March 24th
2005 Frontiers in Plant Biology, Soc. Exp. Biol., University Sheffield March 22nd
2005 Max Planck Institut, University of Koln, Germany, March 18th
2004 Cornell Univ., Dept. Plant Biology, invited by graduate students, Ithaca NY Oct. 22nd
2004 FASEB Mechanisms in Plant Development, Saxton's River Vt, Aug. 7-12
2004 North-South Americas Molecular Biol Conference OSU Sept. 8th
2004 Gordon Research Conference: Plant & Fungal Cytoskeleton, Andover NH Aug. 15-20
2003 USDA Plant Gene Expression Center in Berkeley, CA May 8
2003 Dept. of Plant Biology of the University of California Davis May 9th
2003 Dept of Environmental and Plant Biology, Ohio University, Athens May 16th
2002 NASA Symposium at annual meeting of Amer Soc Cell Biol, San Francisco Dec. 17th
2001 Stomata 2001 Conference, Birmingham, UK, July 26-28
2001 Cornell University, Ithaca NY Feb. 23
2000 Committee on Space Research Meeting, July 20, Warsaw, Poland
1999 Univ N Carolina, Dept Biology, April 12, Chapel Hill
1998 Amer. Soc. Plant Physiol., Midwest Section, Symposium speaker, April 17, N. Ill. Univ.
1998 Univ. Maryland, Program in Molecular and Cell Biology, April 1
1998 European Space Agency Biorack meeting, June 3, Leuven, Belgium
1998 Gordon Research Conf., Gravitational effects on organisms, July 13, New London, NH
1997 Univ. Toledo, Biology, OH, December 12

- 1997 Panel on International Collaboration, US-Russian Science Technology Advisory Council Symposium, Huntsville, AL November 12
- 1997 International Soc Plant Molecular Biol, Singapore, September 23
- 1997 Institute of Molecular Agrobiol, Singapore, September 8
- 1997 8th Int Conf *Arabidopsis* Research, Madison, June 26
- 1996 University of Utrecht, The Netherlands, Jan. 12
- 1996 Miami University, Oxford, Ohio, March 15
- 1996 International Workshop on Plant Biology in Space, Bonn, Germany, June 25
- 1996 Max Planck Insitute for Molecular Plant Physiology, Golm, Germany, June 28
- 1996 British Bryological Society Centenary Symposium, Glasgow, Scotland, August 6
- 1996 University of Edinburgh, Institute Cell Molecular Biology, Scotland, August 8
- 1995 Keystone Conference Frontiers in Plant Morphogenesis, Hilton Head SC April
- 1994 John Innes Institute, Dept. Cell Biology, Norwich, England, Feb. 8
- 1994 University of London, Biology, Queen Mary and Westfield College, England, March 9
- 1994 Institut für Biologie, Universität Freiburg, Germany, March 17
- 1994 University College Dublin, Dept. Botany, Ireland, May 12
- 1994 North Carolina State University, Dept. Botany, Raleigh NC May 30
- 1994 Freie Universität Berlin, Institut für Pflanzenphysiologie, Germany, June 6
- 1994 Institut für Genbiologische Forschung, Berlin, Germany, June 7
- 1994 Universität Hannover, Institut für Botanik, Germany, June 8
- 1994 Committee on Space Research (COSPAR), Hamburg, Germany, July 12
- 1994 Gordon Conference, Gravitational Effects on Living Systems, New London, NH July 19
- 1994 John Innes Institute, Norwich UK Sept. 2
- 1994 British Bryological Society, Shrewsbury UK Sept. 23
- 1994 University of Leeds, Dept. Genetics, UK Oct. 7
- 1994 Warwick University, Dept. Biology, Coventry UK Nov. 3 and 4
- 1993 Cytonet retreat, NSF/plant network, Breckenridge CO, May 6
- 1993 Ohio State University, Horticulture, June 4
- 1992 Ohio State University, Dept. Plant Biology, February 20
- 1992 Anniversary Symposium of Torrey Botanical Club, Honolulu, Hawaii, August 12
- 1992 World Space Congress, COSPAR, Washington, DC September 2
- 1991 Institut für Biologie, Universität Freiburg, Germany, April 15
- 1991 Virginia Polytechnic Univ., Plant Physiology Seminar Series, Blacksburg, March 27
- 1991 Developmental and Cell Biology of Bryophytes, Heidelberg, Germany, April 11,
- 1991 Universität Bonn, Germany, April 16
- 1991 University of Cincinnati, Dept. Biology, Ohio, May 6
- 1990 Institut für Biologie, Universität Freiburg, Germany, May 16
- 1990 Michigan State University, Plant Research Lab, E. Lansing, February 7
- 1990 Washington University, Dept. of Biology, St. Louis, March 23
- 1990 University of Minnesota, Dept. of Plant Biology, St. Paul, April 24
- 1990 Life Sciences Research in Space, European Space Agency, Trieste, Italy, May 31
- 1989 Physiol, Biochem & Genetics Non-Green Plastids, Penn State, State College PA, May
- 1989 North Carolina State University, Department of Botany, Raleigh NC, June
- 1989 Mechanisms in Gravity Responses, FASEB, Copper Mountain CO June 25 - 29
- 1989 Cornell University, Section of Plant Biology, Ithaca, NY, September
- 1988 Hiram College, Hiram, Ohio, February
- 1988 Sandoz Corporation, Palo Alto, CA, July
- 1988 Kenyon College, Gambier, Ohio, November
- 1987 Oxford University, Oxford, England, Department of Plant Sciences, July
- 1987 International Botanical Congress, Berlin, Germany, July
- 1987 University of Illinois, Chicago Circle, Department of Biology, November
- 1986 University of Dayton, Department of Biology, Ohio April
- 1986 Miami University, Department of Botany, Oxford, Ohio, April
- 1986 University of Maryland, College Park, Department of Botany, May
- 1985 Ohio State University, Interdepartmental Plant Physiology Series, April
- 1985 Ohio University, Dept. of Botany, Athens, April

1983 Boyce Thompson Institute, Cornell University, Ithaca, Nov.
 1982 University of California, Los Angeles, Dept. Biology, October
 1982 University of California, Davis, Dept. Botany, October
 1982 University of North Carolina, Charlotte, Dept. Biology, March
 1981 Cornell University, Section of Plant Biology, Ithaca NY, May

- (e) *Other Presentations*
- (f) *Other*
- (g) *Conference Participation (Organizer, Keynote Speaker, etc.)*

10. SERVICE TO THE UNIVERSITY

- (a) *Memberships on committees, including offices held and dates*
 Member of Emergency planning communications subcommittee (EPSC), 2008-2011
- (b) *Other service, including dates*
 Head, Department of Botany, July 2006 – June 2011
 Faculty of Science Achievement Awards Committee April 2010
 Undergraduate Research Organization (URO) judging of Mentorship Awards, Feb. 8, 2010
 UBC Campus and Community Planning Workshop: Open Spaces, June 8, 2009

11. SERVICE TO THE COMMUNITY

- (a) *Memberships on scholarly societies, including offices held and dates*
- (b) *Memberships on other societies, including offices held and dates*
- (c) *Memberships on scholarly committees, including offices held and dates*
- (d) *Memberships on other committees, including offices held and dates*

Grant Panel member, Developmental Mechanisms, NSF, 2003
 Grants Panel, US Dept. Agriculture, Plant Growth Development Program, June 2000

- (e) *Editorships (list journal and dates)*

Associate Editor, American Journal of Botany since 1995

- (f) *Reviewer (journal, agency, etc. including dates)*

April 2011- March 2012: Reviewer for The Plant Journal (Jan 2012)

April 2010-11: Reviewer for Science (Feb 2011), The Plant Cell (May 7, Jan 11), Current Biology (2),
 Developmental Cell, Research Grants Council Hong Kong (April 2011), NSERC DG (Feb 2011)

April 10-March 11: Reviewer for Plant Cell (4); NSERC Disc (1)

April 09 – March 10: Reviewer for *Journals*: The Plant Cell (3), Plant Science, Development, New Phytologist;
 Annals of Botany; *Grants*: BARD, NSF, Austrian Science Fund, Univ. Toronto CRC1 renewal; *Tenure*:
 Univ. Toronto, Univ. Wisconsin. Ausserplanmassiger Prof. Univ. Bonn; *Other*: CRC1 nomination for
 Univ. Toronto

April 08 – March 09: Reviewer for Science, Current Biology, Plant Physiology, Cell Motility Cytoskeleton,
 Agronomy J., Amer J. Botany; Grant reviewer: NSF (2), BBSRC

April 07 – March 08: Reviewer for Habilitation for Univ. Koeln; Grant reviewer for USDA, NSF, NASA, DOE,
 BARD, CRC Program, FWF, International Science Foundation, BBSRC

Cumulative list until 2006: Ad hoc manuscript reviewer for Advances in Space Research, American J. Botany,
 Annals Botany, BioScience, Bot. Gazette, Can. J Botany, Can J Forest Res, Development,
 Developmental Biology, FASEB J., Genes and Development, J. Exp. Botany, J. Gravitational
 Physiology, J. Histochemistry Cytochemistry, J. Microscopy, Lindbergia, Nature, New Phytologist,
 Physiologia Plantarum, Plant Biology, Plant Cell, Plant Cell and Environment, Plant Physiology, Plant
 Journal, Plant Science, Plant Systematics and Evolution, Planta, PNAS, Protoplasma, Science, Science,
 Trends in Genetics, Trends in Plant Sciences

(g) *External examiner (indicate universities and dates)*

(h) *Consultant (indicate organization and dates)*

Content Consultant for Neil Campbell's Biology; "Biology, Living Systems"; "Biology, the Dynamics of Life", (Glencoe); Raven et al. Biology of Plants (Worth) 6th ed.; Biological Science, S. Freeman (Prentice Hall)

(i) *Other service to the community*

External Advisory Board, Rice Univ. NASA Specialized Center Resrch & Training in Gravitational Bio., 1996 - 2000

Grants Panel, NASA, Life and Biomedical Sciences, Plant Biology, 1995

Committee on Space Biology and Medicine, Space Studies Board, National Research Council, National Academy of Sciences, 1993 -1995

Science Working Group, Space Station Biological Research Project, NASA, 1992 - 2001

Council Member, Amer. Institute for Biol. Sciences, representative from ASGSB, 1991 - 1993

Board of Directors, American Society for Gravitational and Space Biology, 1989 - 1992

OHIO STATE UNIVERSITY SERVICE

Department

Chair of Department of Plant Cellular and Molecular Biology, April 2004 – June 2006

Departmental Search Committees 1984-5, 1990-91, 1991-92, 1992-93, 1994-95; 1999-2000 (Chair), 2000-2001 (Chair); 2002-2003 (Chair)

Advisory Committee: 1985-7; 1990-92; 1994-96; 2000-02; 2003-04;

Promotion and Tenure Committee: 1990- ; 1997-98 (Chair); 2000-04 (Chair)

Electron Microscope Coordinator: 1990-95

Graduate Studies Committee: 1988-9; 1994-95; 1995-97 (Chair); 2000-02

Curriculum Comm. 1986-7 (Chair); 1989-93; 1988-89; 1993-94; 1998-2000 (Chair); 2003-04

College of Biological Sciences, Ohio State University

Executive Committee 2004-2006

Promotion and Tenure Committee 2000-2002

Faculty Advisory Committee 1999-2001

Research Committee, 1994-97

Curriculum Committee 1989-92, 1995-98

Affirmative Action Committee 1987-1991

Renovation of Jennings Hall Committee 2003-2006

Ohio State University

Speaker at University Scholar Maximus Competition Panel Discussion February 26th OSU to potential undergraduates and parents

Honors recruitment address at OSU (Feb. 21 & March 1, 2003) and in Cleveland (Sept. 30, 2003)

Steering/Advisory Committee of the Campus Microscopy and Imaging Facility 2001-2006

ad hoc Plant Molecular Biology and Biotechnology committee to design a graduate specialization in Plant Biotechnology 2000-2001

Member Molecular, Cellular and Developmental Biology Graduate Program, OSU, 1991- 2006

Co-lead successful cross-College application for "Translational Plant Sciences" that received \$3.2 M from OSU central funds as 1 of 10 (out of 53) successful proposals for "Targeted Investment in Excellence"

12. AWARDS AND DISTINCTIONS

(a) *Awards for Teaching (indicate name of award, awarding organizations, date)*

May, 2008 Recipient of Faculty ROAD (Research Opportunities and Directory) Undergraduate Mentorship Award, UBC

(b) *Awards for Scholarship (indicate name of award, awarding organizations, date)*
Appointed Fellow of the American Academy for the Advancement of Sciences 2005

(c) *Awards for Service (indicate name of award, awarding organizations, date)*
NASA Public Service Medal, Kennedy Space Center, 2004

(d) *Other Awards*

13. OTHER RELEVANT INFORMATION (Maximum One Page)

THE UNIVERSITY OF BRITISH COLUMBIA *Publications Record*

SURNAME: Sack

FIRST NAME: Fred
MIDDLE NAME(S): David

Initials:
Date: October 2010

SUMMARY

Category	1a	1b	1c	2	3	4	5
Last 5 years	8			2	0		
Career Total	71			10	9		

1. REFEREED PUBLICATIONS

(a) *Journals*

71. Le, Jie, Liu, Xu-Guang, Yang, Ke-Zhen, Vanneste, Steffen, Morita, Miyo, Tasaka, Masao, Friml, Jiří, Beeckman, Tom, Sack, Fred. **Submitted**. Auxin levels and transport regulate stomatal patterning and development
70. Lee, EunKyoung, Goodrich, Justin, Sack, Fred **Submitted** Stomatal longevity requires modulated bHLH FAMA levels and H3K27 histone trimethylation
69. Lucas Jessica R, Sack, Fred D **2012** Polar development of preprophase bands and cell plates in the *Arabidopsis* leaf epidermis. *The Plant Journal*, 69:501-509
68. Steffen Vanneste, Frederik Coppens, EunKyoung Lee, Tyler J. Donner, Zidian Xie, Gert Van Isterdael, Stijn Dhondt, Freya De Winter, Bert De Rybel, Marnik Vuylsteke, Lieven De Veylder, Jiří Friml, Dirk Inzé, Erich Grotewold, Enrico Scarpella, Fred Sack, Gerrit T.S. Beemster, and Tom Beeckman **2011** Developmental regulation of CYCA2s contributes to tissue specific proliferation in *Arabidopsis*. *The EMBO Journal* 30:3430–3441
67. Germain, Hugo, Na Qu, Yu Ti Cheng, EunKyoung Lee, Yan Huang, Oliver X. Dong, Patrick Gannon, Shuai Huang, Pingtao Ding, Yingzhong Li, Fred Sack, Yuelin Zhang, Xin Li 2010. **2010** MOS11: a new component in the mRNA export pathway. *PLoS Genetics*. 6 (12) e1001250, 9 pp.
66. Xie, Zidian, Dongmei Li, Lijun Wang, Fred Sack, Erich Grotewold. **2010** Role of the stomatal development regulators FLP/MYB88 in abiotic stress responses. *The Plant Journal* 64: 731-739
65. Xie, Zidian EunKyoung Lee, Jessica Lucas, Kengo Morohashi, Dongmei Li, James AH Murray, Fred Sack, Erich Grotewold. **2010** Regulation of stomatal lineage cell proliferation by the *Arabidopsis* MYB FOUR LIPS via direct targeting of core cell cycle genes. *The Plant Cell* 22: 2306-2321
64. Chen, Xiong-Yan, Lin Liu, EunKyoung Lee, Xiao Han, Yeonggil Rim, Hyosub Chu, Seon-Won Kim, Fred Sack, and Jae-Yean Kim **2009** The *Arabidopsis* callose synthase gene, *GSL8*, is required for cytokinesis and cell patterning. *Plant Physiology* 150: 105-113
63. Bhave, NS, Velez, KM, Nadau, JA, Lucas, JR, Bhave, SL, Sack, FD **2009** TOO MANY MOUTHS promotes cell fate progression in stomatal development of *Arabidopsis* stems. *Planta*, 229: 357–367
62. Vitha S, Yang M, Sack FD, Kiss JZ **2007** Gravitropism in the *starch excess1* mutant of *Arabidopsis thaliana*. *Amer J Bot*, 94: 590-598
61. Lucas JR, Nadeau JA, Sack FD **2006** Microtubule arrays and *Arabidopsis* stomatal development. *J Experimental Botany* 57: 71-79

60. Lai L, Nadeau JA, Lucas JA, Lee E-K, Nakagawa T, Zhao L, Geisler M, Sack FD **2005** The Arabidopsis R2R3 MYB proteins FOUR LIPS and MYB88 restrict divisions late in the stomatal cell lineage. *Plant Cell* 17, 2754–2767 (cover feature)
59. Kern VD, Schwuchow JM, Reed DW, Nadeau JA, Lucas JR, Skripnikov A, Sack FD **2005** Gravitropic moss cells default to spiral growth on the clinostat and in microgravity during spaceflight. *Planta* 221: 149-157
58. Falbel TG, Koch M, Nadeau JA, Segui-Simarro, JM, Sack FD, Bednarek SY **2003** SCD1 is required for cytokinesis and polarized cell expansion in Arabidopsis. *Development* 130: 4011-24
57. Geisler MJ, DO Deppong, JA Nadeau, FD Sack **2003** Stomatal neighbor cell polarity and division in *Arabidopsis*. *Planta* 216: 571-579
56. Schwuchow JM, Kern VD, White NJ, Sack FD **2002** Conservation of the plastid sedimentation zone in all moss genera with known gravitropic protonemata. *J Plant Growth Regulation* 21:146 – 155
55. Schwuchow JM, Kern VD, Sack FD **2002** Tip-growing cells of the moss *Ceratodon purpureus* are gravitropic in high-density media. *Plant Physiology* 130: 2095-2100
54. Nadeau JA, FD Sack **2002** Control of stomatal distribution on the Arabidopsis leaf surface. *Science* 296: 1697-1700
53. Geisler, MJ, FD Sack **2002** Variable timing of developmental progression in the stomatal pathway in *Arabidopsis* cotyledons. *New Phytologist* 153: 469-76
52. Kern, VD, FD Sack **2001** Effects of spaceflight (STS-87) on tropisms and plastid positioning in protonemata of the moss *Ceratodon purpureus*. *Advances in Space Research* 27: 941-949
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- 2010 Eglit, Y, Liu, X, Lee, EK, Sack, FD Stuck in endocycle: microtubules, ploidy regulation and cell cycle in stomatal development. Multidisciplinary Undergraduate Research Conference (MURC, UBC), 06 March
- 2010 Keerthisinghe, S, Sack, FD Stomatal symmetry formation. Univ Victoria, 2010 Forest Biology Symposium and CSPP Western Regional Meeting
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- 2006 Xie, Z, Sack, FD, Grotewold, E "Molecular studies on FLP protein involved in *Arabidopsis* stomata development" Amer. Soc. Plant Biology meeting, August, Boston, MA
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8. **WORK SUBMITTED** (including publisher and date of submission)

9. **WORK IN PROGRESS** (including degree of completion)