

## **CURRICULUM VITAE**

Updated November, 2004

**Mark L. Winston, FRSC**

**Professor and Fellow, Morris J. Wosk Centre for Dialogue**

Department of Biological Sciences  
 Simon Fraser University  
 Burnaby, B.C. V5A 1S6  
 Canada

Phone: 604-291-4459  
 FAX: 604-291-3496

email: [winston@sfu.ca](mailto:winston@sfu.ca)

Director, Undergraduate Semester in Dialogue  
 Simon Fraser University, Harbour Centre  
 3309-515 W. Hastings St.  
 Vancouver, B.C. Canada V6B 5K3

604-268-7894  
 604-268-7892

### **EDUCATIONAL BACKGROUND**

<u>Degrees</u>	<u>College/University/Institution</u>	<u>Field of Study</u>	<u>Year</u>
B.Sc.	Boston University	Biology	1971
M.A.	Boston University	Marine Biology	1975
Ph.D.	University of Kansas	Entomology	1978

### **ACADEMIC RESEARCH AND INDUSTRIAL EXPERIENCE**

<u>Position Held</u>	<u>Dates</u>	<u>Department &amp; Institution</u>
Research Assistant	1972-1973	Chemotaxis, Woods Hole Oceanographic Institution
Research Assistant	1973	Gypsy Moth Section, U.S. Dept. Agriculture
Postdoctoral Fellowship (NSF National Needs)	1978-1979	Entomology, Univ. of Kansas
Visiting Assistant Professor	1979-1980	Biology, Idaho State Univ.
Visiting Fulbright Professor	1986-1987	Hebrew Univ. of Jerusalem
Assistant Professor	1980-1984	Biological Sciences, Simon Fraser University
Associate Professor	1984-1988	Biological Sciences, Simon Fraser University
Professor	1988-present	Biological Sciences, Simon Fraser University
University Research Professor	1990-1991	Simon Fraser University
Senior Industrial Fellow (NSERC)	1995-1996	Phero Tech, Inc.
Killam Fellowship	2000-2002	Canada Council
Fellow, M.J. Wosk Centre for Dialogue and Director, Undergraduate Semester in Dialogue	2002-present	Simon Fraser University

## **CURRENT INTERESTS**

**Research:** Insect Behavioral Ecology; Apiculture, Pollinator Biodiversity

- 1) Life history, caste structure, reproduction in highly social insects
- 2) Pheromones of honey bees and their pests
- 3) Pollinator biodiversity in natural and managed ecosystems
- 4) Bee management: mite control, crop pollination, pesticide impact

**Public Speaking and Writing:** Nature, Science and Environmental Issues

## **MEMBERSHIP IN LEARNED SOCIETIES**

Entomological Societies of B.C., Canada, and America

Sigma Xi

International Union for the Study of Social Insects

International Bee Research Association

Canadian Association of Professional Apiculturists

American Association of Professional Apiculturists

Royal Society of Canada

## **AWARDS, CITATIONS, AND HONORS**

Dissertation Fellowship, Graduate School, Univ. of Kansas, 1978

National Science Foundation National Needs Postdoctoral Fellowship, Univ. of Kansas, 1978

Eastern Apicultural Society of North America, Student Apiculture Award, 1979

C.G. Hewitt Award, Outstanding Contribution to Entomology, Entomological Society of Canada, 1985

Fulbright Award, Council for the International Exchange of Scholars, at the Hebrew University of Jerusalem, Israel, 1986-1987

University Research Professor, Simon Fraser University, 1990-1991

Hambleton Award for Outstanding Research, Eastern Apicultural Society, 1992

Outstanding Service to Beekeeping Award, Western Apicultural Society, 1992

Alan Clemson Award, New South Wales Apiarists Assoc., Australia, 1992

Gold Medal in the Natural Sciences, Science Council of British Columbia, 1992

Senior Industrial Fellowship, NSERC, 1995-1996, Phero Tech, Inc.

Manning Award of Distinction for Innovation, Ernest C. Manning Awards Foundation (Alberta, Canada) 1997

Nora and Ted Sterling Prize in Controversy, Vancouver B.C. 1998

Killam Research Fellowship, Canada Council, 2000-2002

Academic of the Year, Confederation of University Faculty Associations/British Columbia, 2001

Environment Award for Communication, City of Burnaby, B.C., 2001

Eve Savory Award for Science Communication, Science Council of B.C., 2001

Fellow, Royal Society of Canada (elected 2003)

Fred Rathje Memorial Award, Canadian Honey Council, 2004

Michael Smith Award for Science Promotion, NSERC, 2004

## **RECORD OF RESEARCH FUNDING**

### **1978-1989**

Total Funding: \$1,181,032

Principal Investigator: \$ 755,479

Principal Agencies:

Natural Sciences and Engineering Research Council of Canada

British Columbia Science Council

National Research Council of Canada

Agriculture Canada

### **1989-Present**

<u>DATE</u>	<u>AMOUNT</u>	<u>TITLE</u>	<u>AGENCY</u>	
1989-91	135,000	Development of commercial applications for honey bee queen pheromones	Science Council of B.C.	Research Grant
1989 U.S.	29,400	The relationship between individual foraging strategy and colony size in the honey bee	U.S. National Science Foundation	Postdoctoral Fellowship for J. Fewell
1990 U.S.	29,400			
1989-91	60,000	Production and Transmission of honey bee queen pheromones	Science Council of B.C.	G.R.E.A.T.
1990-91	16,000	Honey bee queen pheromones	Wright Institute	Grant
1990	33,737	Automated splitless capillary gas chromatograph (with 2 other SFU faculty)	N.S.E.R.C.	Equipment
1990	35,000	Semi-microbore High Performance Liquid Chromatograph (with 1 other SFU faculty)	S.F.U.	Special Research
1991-94	132,000	Semiochemical Research Unit (with 4 other S.F.U. faculty)	N.S.E.R.C.	Infrastructure
1994-97	126,000			
1991	2,000	Honey bee queen pheromones	Wright Institute	Grant
1991	3,000	Pheromone research	B.C. Honey Producers Assoc.	Grant

1981-83	51,521	Demography, reproductive biology, and life history characteristics of highly social insects	N.S.E.R.C.	Operating Grant
1984-86	74,000			
1987-89	90,000			
1990-92	114,000			
1993-95	128,463			
1996-00	(see below)			
1991-96	472,640	Identification of honey bee pheromones, and the development of commercial applications in crop production and beekeeping (with 1 other SFU faculty)	N.S.E.R.C.	Strategic
1994	8,000	Alternative pollinator research	B.C. Ministry Agriculture	Grant
1994	3,500	Alternative pollinator research	B.C. Honey Producers Assoc.	Donations
1994	4,000	Pheromone research	Phero Tech, Inc.	Grant
1995	3,500	Pollinator Research	B.C. Ministry Agriculture	Grant
1995	5,500	Using Neem extracts to control diseases and pests of the honey bee	Phero Tech, Inc.	Grant
	5,500		B.C. Ministry Agriculture	Grant
1996-98	20,000	Is the honey bee the most effective pollinator of blueberries?	Blueberry Council	Grant
	24,000		B.C. Ministry Agriculture-ARP	Grant
	32,000		NSERC/Agriculture Canada Research Partnership	Grant
1996-1998	10,000	Using neem extracts to control diseases and parasitic mites in the honey bee	Neem International	Grant
	5,000		B.C. Honey Producers	Grant
	25,000		B.C. Ministry of Agriculture-ARP	Grant
	34,000		B.C. Science Council	G.R.E.A.T.
1997-1999	75,000		Agri-Food Innovation Fund, Saskatchewan Agriculture	
1997-1999	60,000	Development of Integrated Pest Management in Honey Bees	Agri-Food Innovation Grant Fund, Saskatchewan Agriculture	
1998	9,000	Sublethal Effects of Acaricide Treatments on Honey Bee Colonies	Agri-Food Innovation Grant Fund, Saskatchewan Agriculture	

1998	15,000	A semiochemical trapping system for the parasitic mite <i>Varroa jacobsoni</i>	Canadian Bee Research Fund and the Weston Foundation	Grant
1998-2001	145,500	"	NSERC University-Industry	Grant
1998-2001	90,000	"	IPM Technologies	Grant
1998-1999	48,000	Development of essential oils for parasitic mite control	EcoSmart Technologies	Grant
2000-2001	4,000	"	B.C. Honey Producers	Grant
2000-2001	10,000		Can. Bee Res. Fund	Grant
1996-00	223,148	Factors influencing the organization of highly social insect colonies	N.S.E.R.C.	Research Grant
1999-03	96,000	Diversified management systems for pollinating greenhouse tomatoes	B.C. Hothouse	Grant
	180,000		NSERC/Agric. Canada	
2000-02	53,000	Once Upon a Bee Project	EJLB Foundation	Grant
2000-01	10,000	"	Canada Trust Friends of the Environment	Grant
2000-04	224,000	Behavioral and pheromonal factors influencing the organization and evolution of highly social insect colonies	N.S.E.R.C.	Research Grant
2004-09	225,000	"	N.S.E.R.C.	Discovery Grant
2002-06	320,000	Agricultural Practices and Wild Pollinators	NSERC/Agric. Can.	Grant
	30,000		Monsanto	Grant
	60,000		Bayer	Grant
	1,500		B.C. Honey Producers	Grant
2003-04	4,400	Ovary Development in Worker Honey Bees	B.C. Honey Producers	Grant

## **INVITED TALKS**

### 1978-1989

Total of 70 talks to beekeeping, university, public, and professional groups

Major titles:

- Intra-colony demography and reproductive rate of the Africanized honey bee
- Killer bee: Fact or fantasy
- Biology and management of swarming
- Production of package bees in British Columbia
- Use of bee odors in management
- Why bees do it when: temporal division of labour in honey bee colonies

### 1990-present

1990	"The essence of royalty: Honey bee queen pheromone"	
	Western Apicultural Society, San Luis Obispo, California, Washington State	
	Beekeepers Association, Spokane	
	Manitoba Beekeepers Association, Brandon	
	British Columbia Beekeepers Association, Vernon	
	Entomological Society of America, Program Symposium, New Orleans	
1990	"Killer bees: The African honey bee in the Americas"	
	Catalyst 90, S.F.U.	
1991	"The essence of royalty: honey bee queen pheromone"	
	Dept. Entomology, Univ. California, Riverside	
	Canadian Association, Professional Apiculturists, Québec City	
	Neurobiology and Behaviour, Cornell University, Ithaca, NY	
1991	"Killer bees: The African honey bee in the Americas"	
	Insights in Science, S.F.U. Harbour Centre Campus	
1991	"Why bees do it when: division of labour in the honey bee"	
	Entomology, Cornell University, Ithaca, NY	
1991	"Honey bee pheromones: a symphony of odors"	
	BC Science and Technology week, SFU	
1991	"Commercial applications of honey bee queen mandibular pheromone"	
	Entomological Society of America, Reno, Nevada	
1991	"Primer pheromones in social insects: A symphony of compounds, a dearth of notes"	
1992	"Pollen and Pollination"	
	Langley Beekeepers	
	New South Wales Apiarists, Australia	
	Western Apicultural Society, Corvallis, Oregon	
	Surrey Beekeepers	
	B.C. Honey Producers Association	
	Pennsylvania State Beekeepers Association	
1992	"The essence of royalty: honey bee queen pheromone"	
	New South Wales Apiarists, Australia	
	CSIRO, Canberra, Australia	
	Eastern Apicultural Society, Guelph, Ontario (keynote address)	
	Entomology Dept., Pennsylvania State University	
	Vancouver Beekeepers Association	
	Entomological Society of American Feature Symposium, Reno, Nevada	
1993	"Killer Bees: The Africanized Honey Bee in the Americas"	
	Sentinel Senior Secondary School	
	Burke Mountain Naturalists (Coquitlam)	
1993	"The essence of royalty: honey bee queen pheromone"	
	Dept. Biology, University of Miami	
	Dept. Zoology, University of Washington	

1994 "Dirty Honey"  
B.C. Honey Producers' Association, Kamloops

1994 "Pollen and Pollination"  
Canadian Honey Council, Fredericton, N.B.

1994 "The essence of royalty: honey bee queen pheromone"  
Dept. Entomology, Univ. of Illinois, Urbana  
New Zealand Beekeepers' Association, Tauranga, New Zealand  
Invited Symposium, International Union Study of Social Insects, Paris, France  
Psychiatry, Shaughnessy Hospital Sexual Medicine Clinic  
U.B.C. Math Department

1995 "Killer Bees: The Africanized Honey Bee in the Americas"  
Urban Pest Management Association of British Columbia

1995 "The essence of royalty"  
Canadian Entomological Society, invited lecture, Victoria, B.C.

1996 "Pesticide effects on honey bees and their pests"  
Canadian Honey Council, Ottawa

1996 "Killer Bees: The Africanized Honey Bee in the Americas"  
Speaking of Science, Harbour Center, SFU  
North Fraser Bee Club

1996 "The Essence of Royalty"  
"Pollen and Pollination"  
France Beekeepers and Pollinators Associations, Avignon, France

1997 "The Essence of Royalty"  
Kansas Honey Producers, Lawrence, KS, March  
Maritimes Beekeepers Association, Prince Edward Island, August  
Masters of Pest Management 25th Anniversary Symposium, SFU  
"Pollen and Pollination"  
Kansas Honey Producers, Lawrence, KS, March  
Maritimes Beekeepers Association, Prince Edward Island, August

"Of Mites and Bees"  
Oregon State Beekeepers Association, Hood River, Oregon

"Nature Wars: People vs. Pests"  
Abbottsford Learning Plus Society  
Simon Fraser University Bookstore (book launch/reading)

1998 "Nature Wars, People vs. Pests"  
Village Book Store, Bellingham, Washington  
Harbour Centre, SFU

"Of Mites and Bees"  
Canadian Honey Council, Montreal, Quebec  
Minnesota Beekeepers Association, Minnesota, U.S.A.  
Surrey Beekeepers Association  
Alberta Beekeepers Association, Edmonton

"The Essence of Royalty: Honey Bee Queen Pheromone"  
British Beekeepers Association, Stoneleigh, Britain  
Minnesota Beekeepers Association, Minnesota, U.S.A.

"Killer Bees: The African Honey Bee in the Americas"  
Meridian Beekeepers Association, Southampton, Britain

1999 "Honey bee queens: dictators, benevolent despots, or elected prime ministers?"  
International Union for the Study of Social Insects, Invited symposium,

Adelaide, Australia

“Semiochemicals and varroa management”

Canadian Honey Council, Victoria B.C.

“Nature Wars: People vs. Pests”

Isaac Waldman Library, Vancouver (Canada Council)

Philosopher’s Café, Coquitlam, B.C.

Capilano College, ElderCollege

2000

“Of Mites and Bees”

Canadian Honey Council, Saskatoon, Sask.

Manitoba Beekeepers Annual Meeting, Brandon, Manitoba

Meridian Beekeepers Association, Southampton, U.K.

Midwest Beekeeping Symposium, Illinois, U.S.

Ontario Beekeepers Association, Ottawa

“The Essence of Royalty: Honey Bee Queen Pheromone”

North Carolina State University, Raleigh

University of Toronto

Ontario Beekeepers Association, Ottawa

“Nature Wars: People vs. Pests”

History of Science Society, invited commentary, Vancouver

2001

“Integrated Pest Management of Varroa mites”

Canadian Honey Council, Moncton, New Brunswick

“Nature Wars: People vs. Pests”

Vancouver Natural History Society, Vancouver

Entomological Society of Canada Annual Meeting, Niagara Falls, Ontario

“Travels in the Genetically Modified Zone”

Catalyst (B.C. Teachers Association), Annual meeting, Vancouver

Van Dusen Garden Club, Annual meeting, Vancouver

Crop Protection Institute, Niagara Falls

“Varroa attractants and confusants: Push, pull, and potential for control”

Entomological Society of America, Symposium, Acarine

Semiochemicals, San Diego

2002

“Travels in the Genetically Modified Zone”

Philosopher’s Café, Jewish Community Centre, Vancouver

Seedy Saturday, Van Dusen Gardens, Vancouver

Administrative and Professional Staff Assoc. (APSA), Simon Fraser University

“Nature Wars: People vs. Pests”

Port Moody City Council, Port Moody B.C.

“Integrated Pest Management of Varroa mites”

Devon Beekeepers Association, U.K.

“The Role of Science in Beekeeping”

Devon Beekeepers Association, U.K.

“Preparing Leaders”

Coalition of Urban and Metropolitan Universities, Vancouver B.C.

2003

“Travels in the Genetically Modified Zone”

Langara College, Vancouver

Douglas College, New Westminster

Resource Management, SFU

Environmental Biology, University of Guelph, Ontario

Public Meeting, Council of Canadians, North Vancouver, BC

Monsanto Chemicals, St. Louis, Missouri

Canadian Science Writers Association, Saskatoon

Science World, Vancouver (Genome B.C.)

“The Essence of Royalty: Honey Bee Queen Pheromone”

University of Lethbridge, Alberta

Irish Beekeepers Association, Ireland

“Writing About Bees”

Western Apicultural Society, Vancouver

“Engaging Students in the Real World: The Undergraduate Semester in Dialogue”

Golden Key Society Speaker Series, SFU

2004

“Engaging Students in the Real World: The Undergraduate Semester in Dialogue”

Capilano College, North Vancouver

BC Biology Instructor’s Organization, Vancouver

“Writing for the Public: Descending From the Ivory Tower”

Royal Society Lectures, Simon Fraser University

“The Essence of Royalty: Honey Bee Queen Pheromone”

North Carolina Beekeepers Association, Charlotte, N.C.

### **Named, Keynote, and Special Invited Lectures**

Grace Griswold Lectures, Cornell University, 1991

Alan Clemson Lectures, New South Wales Beekeepers Association, 1992

Yukon Science Institute, Whitehorse, 1999, "Killer Bees: The African Honey Bee in the Americas"

Apimondia World Beekeeping Congress, Vancouver, 1999, Opening Keynote address "Beekeeping in the New Millennium"

British Beekeepers Association, Stoneleigh, U.K., George Knights Memorial Lecture, 2000

Vancouver Institute, Vancouver. 2000, "Nature Wars: People vs. Pests"

Sunshine Coast Festival of the Written Arts, Sechelt, B.C., 2000

Crop Protection Institute, , "Science, Technology, and Nature," 2000, Winnipeg

North Shore Counselling Centre Conference, "Emotional Process in Society," April 2002, Vancouver  
Joint International Conference, International Society for Environmental Epidemiology and the

International Society of Exposure Analysis, "Nature Wars: People vs. Pests," Opening  
Keynote

Address, August 2002, Vancouver

Coalition of Urban and Metropolitan Universities, "Preparing Leaders," 2002, Vancouver

Canadian Parliament, "Bacon and Eggheads" Parliamentary Lecture Series, "Pollinators in a  
Genetically Modified World," 2002, Ottawa

National Policy Research Conference, "Travels in the Genetically Modified Zone," Plenary Address,  
2002, Ottawa

Canadian Science Writers, "Travels in the Genetically Modified Zone, 2003, Saskatoon

4<sup>th</sup> World Conference of Science Journalists, "Covering Complexity and Controversy," 2004,  
Montreal

### **RECORD OF PROFESSIONAL ACTIVITIES**

Chairman, Ecology Contributed Papers Session, Ecological Society of America National Meetings,  
Seattle, 1980

Organized and chaired Symposium, "Adaptations of Social Insects to Cold Temperate Climates".  
Joint

meeting of Entomological Societies of Canada and America, Toronto 1982

Malaspina College, Apiculture Advisory Committee Member, 1982-83

Editor, Papers on Pest Management Series, M.P.M. Program, S.F.U., 1982-present

Representative, International Bee Research Association (England)

Member, Importation Committee, Canadian Association of Professional Apiculturists

Editorial Committee, Diseases of Honey Bees, Canadian Association of Professional Apiculturists

Editor, SFU Papers on Pest Management Series

Organized B.C. Pollination Working Group, 1984

Program Chairman, Western Apicultural Society, Victoria, 1986

Entomological Society of Canada, Scholarship Committee, 1987-1989

Entomological Society of Canada, Student Affairs Committee, 1987-

Associate Editor, Canadian Entomologist, 1986-

Convenor, Apiculture and Social Insects Section, International Congress of Entomology

Member, Wright Institute, 1985-1991

Local Organizing Committee, Second Inter. Conference on Behavioral Ecology, Vancouver, 1988

Member, Entomological Society of America Pacific Branch Canvassing Committee, 1985, 1991

Organized Symposium, "Physiology of Insect Colonies", Entomol. Soc. Amer., New Orleans 1990

Member, Apiculture Committee, Pacific National Exhibition, 1990-1991

Apiculture Advisory Committee, Agriculture Canada, 1990-1991

Western Apicultural Society, President, 1992-1993

President, North American Section, International Union for the Study of Social Insects, 1992-1993

Reviewed grants for: N S E R C   U S   National Science Foundation   U S - Israel Binational Agriculture

Research & Development, Guggenheim Foundation, B.C. Science Council, Leverhulme Trust (U.K.), U.S. Dept. Agriculture Competitive Grants, Foundation for Research Development (South Africa), Australia Research Council, National Geographic, Israel Science Foundation

Manuscript reviewer for: Animal Behaviour, J. Apicultural Research, Canadian Entomologist, Environmental Entomology, Ecology, Economic Entomology, Annals Entomological Society of America, J. Kansas Entomological Society, Science, Apidologie, Ethology, J. Insect Behaviour, Cell and Tissue Research, Can. J. Zoology, Oikos, J. Comp. Physiol., PNAS, J. Insect Physiology, Behavioral Ecology

Reviewed Promotion, Tenure and Honorary Degree Cases: Ohio State University; University of Illinois (2); Hobart and Smith; Oakland University; University of North Carolina (2); University of Georgia (2); University of Cape Town, South Africa; University of California, Riverside; University of Guelph (3); York University, University of Minnesota, Washington State University, Pennsylvania State University

External Dissertation Examiner: Biology Department, University of Western Sidney, Hawksbury, Australia 1996, 1999; University of British Columbia, Mathematics Department 1996

Member, Agriculture Review Committee, Science Council of British Columbia, 1989-1995  
Canadian Association of Professional Apiculturists: Vice-President 1990-1994, Chair, Research Committee 1990-1994; President, 1994-1998

Organized Program Symposium, "Pheromones in Social Insects", Entomological Society of America, Dallas, Texas, December 1994

Organized FSAM II Symposium, Canadian Honey Council/Canadian Association of Professional Apiculturists, Edmonton, 1995

Steering Committee, 1996 International Bee Research Association Conference, "Tropical Bees: Management and Diversity," Costa Rica

Editorial Board, J. Insect Behavior, 1994-present

Student Awards Committee, International Union for the Study of Social Insects, 1995

Organizer and Moderator, "Beyond Rio," Summer Institute, SFU 1996

Director and Chair, Canadian Bee Research Fund, 1997-2001

Program Chair, Apimondia99, International Federation of Beekeepers Associations, Vancouver B.C. September 1999 meeting

Director, Undergraduate Semester in Dialogue, Simon Fraser University (2002- )

Chair, External Advisory Committee, NSERC Biocontrol Research Network (2002- )

Advisory Board, TD Friends of the Environment Foundation, Burnaby/New Westminster Chapter (2003- )

## **Consultant Activities**

### **Legal**

Watson & Gopaul, Solicitors and Barristers (Vancouver, B.C.) 1994

Marshall and Lamperson (Nanaimo, B.C.) 1998, 2000

Paul Lee Barristers and Solicitors (Toronto, Ontario) 2000

Greene, Broillet, Taylor, Wheeler, and Panish LLP (Los Angeles, Calif.) 2001

### **Film/TV:**

CBC Beachcombers, television series, 1984

X-Files, television series, "Herrenvolk" 1996

First Wave Productions, television series, "Ohio Valley," 1999

Creative Animal Talent, movie, "Say It Isn't So" 2000

Great Northern Productions, "The Story of a Honey Bee," documentary, 2000

Smallville, television series, "Drone," 2002

Shavick Enterprises, "Killer Bees," Television movie, 2002

Tigress Productions, "Taming the Swarm," documentary, 2002

### **Business**

PMG/Stratford, 1984

Holographic Images, 1997  
 Raymond Jefferd Enterprises, 1998  
 Gibeau Honeybee Centre, 1999-2000  
 CPC (Crop Pollination Consultants), 2000

**Publishing**

*Magic School Bus Inside a Bee Hive*, Scholastic, Inc., 1995  
 Frequent book proposal and completed manuscript reviewer, Harvard University Press and other publishers

**Government/NGO**

Canadian Biotechnology Advisory Committee, Case Studies, 2002-2003  
 Canadian Food Inspection Agency, Enforcement and Investigations, 2003  
 Action Canada, 2003-

**ADMINISTRATIVE AND COMMITTEE RESPONSIBILITIES AT SIMON FRASER UNIVERSITY.**

**i) Departmental Committees**

M.P.M. Admissions Committee, 1981-82  
 Undergraduate Curriculum Committee, 1981-present  
 Undergraduate Honors Awards Committee, 1981  
 Tenure Committee, 1982-83  
 Search Committees: Environmental Toxicology Position 1982  
     Lecturer, BISC 102, 1982  
     NSERC Junior Chair, 1991  
 BISC 439: Ecological Methods Review  
 Course Evaluation Review Committee, 1986  
 Acting Director, Centre for Pest Management, 11-19 February 1988  
 Graduate Studies Committee, 1989-1994, 1998-2000  
     (Chairman, 1990-1994)  
 Scholarship Committee, 1990-1994  
 Shrum Chair Selection Committee 1991  
 Course Planning Group, 1999

**ii) Faculty Committees**

High School Liaison Committee, 1981-1986  
     (Chairman, 1982-1986)  
 Chair, Faculty Graduate Studies Committee, 1994-1995

**iii) University Committees**

Knowledge Network, Science Representative, 1984-1992  
 Dean of Science Search Committee, 1987  
 Special Research Grants Committee, 1990  
 Appeal Committee, Senate Graduate Studies Committee, 1991  
 Task Force, Supervisor-Student Relationship, 1992  
 University Tenure Committee, 1992-1994  
 Editorial Board, Simon Fraser University News, 2001-  
 Advisory Committee, Academy of Independent Scholars, Interdisciplinary Programs in Continuing Studies, 2001-  
 Burnaby College at SFU, Steering Committee, 2002-2004  
 Ad-Hoc Advisory Committee, China Initiative 2004-

Steering Committee, Dena Wosk Fellowship, Centre for Dialogue 2004-  
Steering Committee, Morris J. Wosk Centre for Dialogue 2004-2007

### **RECORD OF COMMUNITY SERVICE**

1981-1994	Chairman, B.C. Honey Producers' Assoc., Education Committee
1984	Member, Committee for Adult Jewish Education, Vancouver
1985-1986	Member, Beth Israel Synagogue Board of Directors
1980-present	Approximately 20 radio, T.V. and newspaper interviews/year
1991	Volunteer, Pioneer House (Halfway House)
1992-2002	Burquest Jewish Community Association Board of Directors
1993-1997	President, Burquest Jewish Community Association
1992-2000	Science in Schools Program, Science World
2000, 2001, 2002	Centennial High School, Coquitlam, Scholars Banquet Speaker

## GRADUATE STUDENT SUPERVISION

Student's Name	Degree	Date of Completion	Thesis Topic
Cynthia Scott	MPM	82-3	Biology and pheromone-based monitoring of the bumblebee wax moth <i>Vitula edmandsae</i>
Michael Smirle	MPM	83-1	Development of a sensitive bioassay for evaluating sublethal pesticide effects on the honeybee <i>Apis mellifera</i> L.
Philip Lee	MSc	85-2	Reproductive and growth patterns of temperate-evolved honey bees ( <i>Apis mellifera</i> L.)
Kerry Clark	MPM	85-2	Mites (Acari) associated with the honey bee, <i>Apis mellifera</i> L. (Hymenoptera: Apidae), with emphasis on British Columbia
Cynthia Scott	PhD	86-1	Biology and management of wild bee and domesticated honey bee pollinators for tree pollination
Elizabeth Punnett	MSc	86-1	The feasibility of honey bee ( <i>Apis mellifera</i> L.) package and nucleus production in the Fraser Valley area of Southwestern British Columbia, Canada
Kenna Mackenzie	MPM	86-3	The effect of sublethal pesticide exposure on temporal division of labour and longevity in the honey bee ( <i>Apis mellifera</i> L.)
Kenneth Naumann	MPM	88-2	The effects of swarming and package production on caste polyethism in the honeybee <i>Apis mellifera</i> L.
Dayarathne Howpage	MPM	88-2	A study of swarming in relation to honey bee ( <i>Apis mellifera</i> L.) management practices
Michael Smirle	PhD	88-3	Insecticide resistance mechanisms in the honey bee, <i>Apis mellifera</i> L.
Cameron Eckert	MSc	90-3	The relationship between colony state and individual foraging behaviour in the honey bee
Les Willis	MSc	91-1	The phylogenetic relationships in the genus <i>Apis</i> determined by the sequence of the cytochrome oxidase II region of mitochondrial D.N.A.
Margriet Wyborn	MSc	91-2	Mass storage of honey bee queens during the winter
Ken Naumann	PhD	92-1	The production and intra-nest transmission of honey bee queen pheromone (received Governor-General's Award)
Heather Higo	MSc	94-2	The role of honey bee ( <i>Apis mellifera</i> L.) queen mandibular gland pheromone in pollination enhancement and colony management

Tanya Pankiw	PhD	95-3	Worker responses to, and queen production of, honey bee queen mandibular pheromone
Lynn Birnie	MSc	97-1	Sublethal effects of three acaricide treatments on honey bee ( <i>Apis mellifera</i> L) colony development and honey production
Alida Janmaat	MPM	98-3	The effects of <i>Varroa jacobsoni</i> OUD. Infestations on honey bee ( <i>Apis mellifera</i> L) colony functioning and individual worker behavior
Danielle Downey	MSc	99-2	The impact of single and dual infestations of the honey bee ( <i>Apis mellifera</i> L.) parasitic mites <i>Varroa jacobsoni</i> OUD. and <i>Acarapis woodi</i> Rennie
Margriet Dogterom	Ph.D.	99-2	Pollination of four species of bees on highbush blueberries
Huarong Lin	Ph.D.	99-3	Regulation of worker honey bee reproduction ( <i>Apis mellifera</i> L.)
Adony Melathopolous	MPM	99-3	Laboratory and field evaluation of neem pesticides for the control of the honey bee mite parasites <i>Varroa jacobsoni</i> and <i>Acarapis woodi</i> and brood pathogens <i>Paenibacillus larvae</i> and <i>Ascophaea apis</i> .
Shawn Devlin	MPM	01-2	Comparative analyses of sampling methods for varroa mites ( <i>Varroa destructor</i> Anderson and Trueman) on honey bees ( <i>Apis mellifera</i> L.)
Nathan Rice	MPM	01-2	Control of the parasitic mites <i>Varroa destructor</i> and <i>Acarapis woodi</i> in honey bee ( <i>Apis mellifera</i> ) colonies using botanical compounds and integrated pest management
Holly Sabara	M.Sc.	02-1	Honey bee ( <i>Apis mellifera</i> L.) pollination of greenhouse tomatoes
Robin Whittington	M.Sc.	03-1	Factors potentially limiting colony growth, foraging effort, and pollination efficiency of bumble bees in commercial tomato greenhouses
Anna Birmingham	M.Sc.	03-3	Bumble bee drift in a greenhouse environment

### **Current Student Supervision**

Student's Name	Degree	Semester Student Began Degree	Status: Active/ On Leave/Other
Lora Morandin	Ph.D.	00-2	Active
Shelley Hoover	Ph.D.	00-3	Active
Claudia Ratti	M.Sc.	03-1	Active

### **Student Committees (1980-2002)**

11 PhD committees

7 MPM and MSc. committees

### **Current Committees**

Mark Sidney (Biology)

M.Sc.

## **TEACHING AND RESEARCH RECORD**

<u>Semester</u>	<u>Course Description and Title</u>	<u>Comments</u>
1980-3	BISC 317	Insect Biology
1981-1	BISC 417	Entomology
1981-2	Research	
1981-3	BISC 317	Insect Biology
	BISC 859	Social Insects
1982-1	BISC 472	Biology of the Bees
	SCI 010	An Introduction to Bees and Beekeeping
1982-2	Research	
1982-3	BISC 102	Introduction to Biology
	847	Pest Management in Practice
1983-1	BISC 472	Biology of the Bees
	KNOW	9-part TV series
		Apiculture: An Introduction to Bees and Beekeeping
1983-2	Research	Network
1983-3	BISC 317	Insect Biology
	BISC 859	Social Insects
1984-1	BISC 417	Entomology
	SCI 010	An Introduction to Bees and Beekeeping
	KNOW	Repeat, Non-credit DISC Teleseries course
1984-2	Research	
1984-3	BISC 317	
1985-1	BISC 427	
	BISC 847	Biology of Bees
1985-2	Research	
1985-3	BISC 317	
	817	
1986-1	BISC 004	
	KNOW	New Telecourse
1986-2	Research	
1986-3	Sabbatical	
1987-1	Sabbatical	
1987-2	Research	
1987-3	BISC 317	
	847	
1988-1	BISC 427	
1988-2	Research	
1988-3	BISC 317	
	BISC 817	
1989-1	BISC 102	
1989-2	Research	
1989-3	BISC 317	
	BISC 427	
	BISC 817	
1990-1	BISC 102	
	BISC 004	
1990-2	Research	
1990-3		
1991-1	University Research Professor	
1991-2		

1991-3	BISC 317	
1992-1	BISC 817	
1992-2	DISC	
1992-3	Research	
1993-1	BISC 317	
1993-1	BISC 004	DISC
	BISC 427	
1993-2	Research	
1993-3	BISC 317	
1994-1	BISC 884	
1994-1	BISC 004	DISC
1994-2	Research	
1994-3	BISC 317	
1995-1	BISC 427	
1995-1	BISC 004	DISC
1995-2	Research	
1995-3	Sabbatical	
1996-1	Sabbatical	
1996-2	Sabbatical	
1996-3	BISC 317	
1997-1	BISC 372	Biology and Society
1997-2	Research	
1997-3	BISC 884	
1998-1	BISC 102	
1998-2	Research	
1998-3	BISC 317	
1999-1	BISC 372	Biology and Society
1999-2	Research	
1999-3	LS 812	Science and Human Values
2000-1 to 2001-3	Killam Fellowship	
2002-1 to 2009	Fellow, Morris J. Wosk Centre for Dialogue	Undergraduate Semester Program

## **PUBLICATION LIST**

1. Banerjee, S., V. Kerr, M. Winston, J.K. Kelleher and L. Margulis. 1972. Melatonin: Inhibition of microtubule-based oral morphogenesis in *Stentor coeruleus*. *J. Protozool.* 19: 108-113.
2. Younger, K.B., S. Banerjee, J.K. Kelleher, M. Winston and L. Margulis. 1972. Evidence that the synchronized production of new basal bodies is not associated with DNA synthesis in *Stentor coeruleus*. *J. Cell Sci.* 11: 621-637.
3. Winston, M.L., E. Johnson, J.K. Kelleher, S. Banerjee and L. Margulis. 1974. Melatonin: cellular effects on live stentors correlated with the inhibition of colchicine binding to microtubule protein. *Cytobios* 9: 237-243.
4. Winston, M.L. 1977. The establishment and spread of the Africanized honeybee in the Western Hemisphere. *J. Ag. Soc. Trinidad and Tobago* 77: 306-313.
5. Winston, M.L. and C.D. Michener. 1977. Dual origin of highly social behavior among bees. *Proc. Natl. Acad. Sci.* 74: 1134-1137.
6. Winston, M.L. and S. Jacobson. 1978. Dominance and effects of strange conspecifics on aggressive interactions in the hermit crab *Pagurus longicarpus* (Say). *Anim. Behav.* 26: 184-191.
7. Laroca, S. and M.L. Winston. 1978. Interactions between *Apis* (Hymenoptera: Apidae) and *Bombus* (Hymenoptera: Apidae) on the flowers of tall thistle; honeybees gather pollen from bodies of bumblebees. *J. Kansas Ent. Soc.* 51: 274-275.
8. Winston, M.L. and G.W. Otis. 1978. Ages of bees in swarms and afterswarms of the Africanized honeybee. *J. Apic. Res.* 17: 123-129.
9. Michener, C.D., M.L. Winston and R. Jander. 1978. Pollen manipulation and related activities and structures in the Apidae. *Univ. Kansas Sci. Bull.* 51: 575-601.
10. Winston, M.L. 1979. Intra-colony demography and reproductive rate of the Africanized honeybee in South America. *Behav. Ecol. and Sociobiol.* 4: 279-292.
11. Winston, M.L. 1979. The labiomaxillary complex of the long-tongued bees: a comparative study. *Univ. Kansas Sci. Bull.* 51: 631-667.
12. Winston, M.L., G.W. Otis and O.R. Taylor. 1979. Absconding behavior of the Africanized honeybee in South America. *J. Apic. Res.* 18: 85-94.
13. Winston, M.L. 1979. Events following queen removal in colonies of Africanized honeybees in South America. *Insectes Sociaux* 26: 373-381.
14. Winston, M.L. 1979. The potential impact of the Africanized honeybee on apiculture in Mexico and Central America. *American Bee J.* 119: 584-586, 642-645.
15. Winston, M.L. 1980. Seasonal patterns of brood rearing and worker longevity in colonies of Africanized honeybees in South America. *J. Kansas Ent. Soc.* 53: 157-165.
16. Winston, M.L. and O.R. Taylor. 1980. Factors preceding queen rearing in the Africanized honeybee in South America. *Insectes Sociaux* 27: 289-304.
17. Winston, M.L. 1980. Swarming, afterswarming, and reproductive rate of unmanaged honeybee colonies (*Apis mellifera*). *Insectes Sociaux* 27: 391-398.
18. Winston, M.L., O.R. Taylor and G.W. Otis. 1980. Swarming, colony growth patterns, and bee management. *Amer. Bee J.* 120: 826-830.
19. Otis, G.W., M.L. Winston and O.R. Taylor. 1981. Engorgement and dispersal of Africanized honeybee swarms. *J. Apic. Res.* 20: 3-12.

20. Winston, M.L., J. Dropkin and O.R. Taylor. 1981. Demography and life history characteristics of two honeybee races (*Apis mellifera*). *Oecologia* 48: 407-413.
21. Winston, M.L., G.G. Grant, K.N. Slessor and J. Corner. 1981. The moth *Vitula edmandsae*: a pest of honeybee combs. *Bee World* 62: 108-110.
22. Winston, M.L. and S.J. Katz. 1981. Longevity of cross-fostered honey bee workers (*Apis mellifera*) of European and Africanized races. *Can. J. Zool.* 59: 1571-1575.
23. Winston, M.L. and S.J. Katz. 1982. Foraging differences between cross-fostered honeybee workers (*Apis mellifera*) of European and Africanized races. *Behav. Ecol. Sociobiol.* 10: 125-129.
24. Winston, M.L., K.N. Slessor, M.J. Smirle and A.A. Kandil. 1982. The influence of a queen-produced substance, 9HDA, on swarm clustering behavior in the honeybee *Apis mellifera* L. *J. Chem. Ecol.* 8: 1283-1288.
25. Winston, M.L. and E.N. Punnett. 1982. Factors determining temporal division of labor in bees. *Can. J. Zool.* 11: 2947-2952.
26. Winston, M.L. and L.H. Graf. 1982. Native bee pollinators of berry crops in the Lower Mainland region of British Columbia. *J. B. C. Ent. Soc.* 79: 14-20.
27. Winston, M.L., O.R. Taylor and G.W. Otis. 1983. Some differences between temperate and tropical honeybees. *Bee World*. 64: 12-21.
28. Winston, M.L., W.T. Chalmers and P. Lee. 1983. The effects of two pollen supplements on brood mortality and adult longevity in the honeybee (*Apis mellifera* L.). *J. Apic. Res.* 22: 49-52.
29. MacKenzie, K.E. and M.L. Winston. 1984. Diversity and abundance of native bee pollinators on berry crops and natural vegetation in the lower Fraser Valley, B. C. *Can. Entomol.* 116: 965-974.
30. Punnett, E.N. and M.L. Winston. 1984. Events following queen removal in colonies of European-derived honey bee races. *Insectes Sociaux* 30: 376-383.
31. Smirle, M.J., M.L. Winston and K.L. Woodward. 1984. Development of a sensitive bioassay for evaluating sublethal pesticide effects on the honey bee (Hymenoptera: Apidae). *Econ. Ent.* 77: 63-67.
32. Scott, C.D., M.L. Winston, G.G. Grant, G.G.S. King and K.N. Slessor. 1984. Biology and pheromone-based management of the bumble bee wax moth *Vitula edmandsae*. *Can. Entomol.* 116: 1007-1013.
33. Scott, C.D. and M.L. Winston. 1985. Colony characteristics and economics of pollination management systems. *J. Apic. Res.* 24: 43-48.
34. Winston, M.L. and L.A. Fergusson. 1985. The effect of worker loss on temporal caste structure in colonies of the honey bee (*Apis mellifera* L.). *Can. J. Zool.* 63: 777-780.
35. Lee, P.C. and M.L. Winston. 1985. The effect of swarm size and date of issue on comb construction in newly founded colonies of honey bees (*Apis mellifera* L.). *Can. J. Zool.* 63: 524-527.
36. Lee, P.C. and M.L. Winston. 1985. The influence of swarm population on brood production and emergent worker weight in newly founded honey bee colonies. (*Apis mellifera*). *Insectes Sociaux* 32: 96-103.
37. Mitchell, S.R., D. Bates, M.L. Winston, and D.M. McCutcheon. 1985. Comparison of individually and group-overwintered honey bee queens. *J. B. C. Entomol. Soc.* 82: 35-38.
38. Slessor, K.N., G.G.S. King, D.R. Miller, and M.L. Winston. 1985. Determination of chirality of alcohol or latent alcohol semiochemicals in individual insects. *J. Chem. Ecol.* 12: 1659-1667.

39. Winston, M.L., S.R. Mitchell, and E.N. Punnett. 1985. Feasibility of package honey bee (Hymenoptera: Apidae) production in southwestern British Columbia, Canada. *J. Economic Entomol.* 78: 1037-1041.

40. Winston, M.L. and L.A. Fergusson. 1986. The influence of the amount of eggs and larvae in honey bee (*Apis mellifera* L.) colonies on temporal division of labor. *J. Apic. Res.* 25: 238-241.

41. Winston, M.L. and S.R. Mitchell. 1986. The timing of package honey bee (Hymenoptera: Apidae) production and use of two-queen management in southwestern British Columbia, Canada. *J. Economic Entomol.* 79: 952-956.

42. Kolmes, S.A. and M.L. Winston. 1986. A quantitative method for assessing some aspects of the independence of sampling in Behavioral studies of worker honey bees. *J. Apic. Res.* 25: 209-212.

43. Smirle, M.J. and M.L. Winston. 1987. Inter-colony variation in pesticide detoxication by the honey bee *Apis mellifera* L. (Hymenoptera: Apidae). *J. Econom. Entomol.* 80: 5-8.

44. Allan, S.D., K.N. Slessor, M.L. Winston, and G.G.S. King. 1987. The influence of age and task specialization on the production and perception of honey bee pheromones. *J. Insect Physiol.* 33: 917-922.

45. Scott-Dupree, C.D. and M.L. Winston. 1987. Wild bee pollinator diversity and abundance in orchards and uncultivated habitats in the Okanagan Valley, B.C. *Canadian Entomol.* 119: 735-745.

46. Lee, P.C. and M.L. Winston. 1987. Effect of reproductive timing and colony size on the survival, offspring colony size, and drone production in the honey bee (*Apis mellifera*). *Ecolog. Entomol.* 12: 187-195.

47. Winston, M.L. 1987. The impact of a tropical evolved honey bee in temperate climates of North America. In: Proc. 1st International Conference on Africanized Honey Bees and Bee Mites, eds. G.R. Needham, R.E. Page, Jr., M. Delfinado-Baker, C.E. Bowman. Ellis Horwood Ltd., Chichester, pp. 135-140.

48. Slessor, K.N., L.-A. Kaminski, G.G.S. King, J.H. Borden and M.L. Winston. 1988. Semiochemical basis of the retinue response to queen honey bees. *Nature* 332: 354-356.

49. Smirle, M.J. and M.L. Winston. 1988. Detoxifying enzyme activity in worker honey bees: an adaptation for foraging in contaminated ecosystems. *Can. J. Zool.* 66: 1938-1942.

50. Fergusson, L.A. and M.L. Winston. 1988. The influence of wax deprivation on temporal caste structure in honey bee colonies. *Can. J. Zool.* 66: 1997-2001.

51. Kolmes, S.A. and M.L. Winston. 1988. Division of labor among worker honey bees in demographically manipulated colonies. *Insectes Sociaux* 35: 262-270.

52. Mackenzie, K.E. and M.L. Winston. 1988. Effects of sublethal exposure to diazinon on longevity and temporal division of labor in the honey bee. *J. Economic Entomology* 82: 75-82.

53. Mackenzie, K.E. and M.L. Winston. 1989. The effects of sublethal exposure to diazinon, carbaryl, and resmethrin on longevity and foraging in the honey bee (*Apis mellifera* L.). *Apidologie* 20: 29-40.

54. Winston, M.L., K.N. Slessor, L.G. Willis, K. Naumann, H.A. Higo, M.H. Wyborn, L.-A. Kaminski. 1989. The influence of queen mandibular pheromones on worker attraction to swarm clusters and inhibition of queen rearing in the honey bee (*Apis mellifera* L.). *Insectes Sociaux* 36: 15-27.

55. Punnett, E.N. and M.L. Winston. 1989. A comparison of honey bee (*Apis mellifera* L.) colonies established from packages or nuclei in two areas of British Columbia, Canada. *J. B.C. Entomol. Soc.* 86:1-6

56. Kolmes, S.A., M.L. Winston and L.A. Fergusson. 1989. The division of labor among worker honey bees: the effects of multiple patrilines. *J. Kansas Entomol. Soc.* 62: 80-95.

57. Punnett, E.N. and M.L. Winston. 1989. A comparison of package and nucleus production from honey bee (*Apis mellifera* L.) colonies. *Apidologie.* 20: 465-472.

58. Naumann, K. and M.L. Winston. 1990. Effect of swarm type on temporal caste polyethism in the honey bee, *Apis mellifera* L. (Hymenoptera: Apidae). *Insectes Sociaux* 37: 58-72.

59. Kaminski, L.-A., K.N. Slessor, M.L. Winston, N.W. Hay, and J.H. Borden. 1990. Honey bee response to queen mandibular pheromone in laboratory bioassays. *J. Chem. Ecol.* 16: 841-850.

60. Slessor, K.N., L.-A. Kaminski, G.G.S. King, and M.L. Winston. 1990. Semiochemicals of the honey bee queen mandibular glands. *J. Chem. Ecol.* 16: 851-860.

61. Naumann, K. and M.L. Winston. 1990. Effects of package production on temporal caste polyethism in the honey bee (Hymenoptera: Apidae). *Annals Entomol. Soc. Amer.* 83: 264-270.

62. Winston, M.L., H.A. Higo and K.N. Slessor. 1990. The effect of various dosages of queen mandibular pheromone on the inhibition of queen rearing in the honey bee (Hymenoptera: Apidae). *Annals Entomol. Soc. Am.* 83:234-238.

63. Naumann, K., M.L. Winston, M.H. Wyborn, and K.N. Slessor. 1990. Effects of synthetic honey bee (Hymenoptera: Apidae) queen mandibular gland pheromone on workers in packages. *J. Econ. Entomol.* 83:1271-1275.

64. Willis, L.G., M.L. Winston, and K.N. Slessor. 1990. The effect of queen honey bee (Hymenoptera: Apidae) mandibular pheromone on worker ovary development. *Canadian Entomologist* 122: 1093-1099

65. Fewell, J.H., R.C. Ydenberg, M.L. Winston. 1991. Individual foraging effort as a function of colony population in the honey bee, *Apis mellifera* L. *Anim. Behav.* 42: 153-155.

66. Winston, M.L., H.A. Higo, S.J. Colley, T. Pankiw, K.N. Slessor. 1991. The role of queen mandibular pheromone and colony congestion in honey bee (*Apis mellifera* L.) reproductive swarming. *J. Insect Behav.* 4: 649-660.

67. Naumann, K., M.L. Winston, K.N. Slessor, G.D. Prestwich, F.X. Webster. 1991. The production and transmission of honey bee queen (*Apis mellifera* L.) mandibular gland pheromone. *Behav. Ecol. Sociobiol.* 29: 321-332.

68. Winston, M.L. 1992. Biology and management of the Africanized honey bee. *Annual Rev. Entomol.* 37: 173-193.

69. Winston, M.L. 1992. Semiochemicals and insect sociality. In: *Evolutionary perspectives on Insect Chemical Ecology*. eds. M. Isman and B. Roitberg. Chapman and Hall, N.Y. pp. 315-333.

70. Winston, M.L. and K.N. Slessor. 1992. An essence of royalty: honey bee queen pheromone. *American Scientist* 80: 374-385.

71. Higo, H.A., S.J. Colley, M.L. Winston, K.N. Slessor. 1992. Effects of honey bee (*Apis mellifera* L.) queen mandibular gland pheromone on foraging and brood rearing. *Canadian Entomologist* 124: 409-418.

72. Fewell, J.H. and M.L. Winston. 1992. Colony state and regulation of pollen foraging in the honey bee, *Apis mellifera* L. *Behav. Ecol. Sociobiol.* 30: 387-393.

73. Fergusson-Kolmes, L., S.A. Kolmes, M.L. Winston. 1992. Handedness and asymmetry in the waggle dance of worker honey bees (Hymenoptera: Apidae). *J. Kansas Entomol. Soc.* 65: 85-86.

74. Currie, R.W., M.L. Winston, K.N. Slessor, D.F. Mayer. 1992. Impact of synthetic queen mandibular pheromone sprays on honey bee (*Apis mellifera* L.) pollination of fruit crops. *J. Econ. Entomol.* 85: 1293-1299.

75. Currie, R.W., M.L. Winston, K.N. Slessor. 1992. Impact of synthetic queen mandibular pheromone sprays on honey bee (*Apis mellifera* L.) pollination of berry crops. *J. Econ. Entomol.* 85: 1300-1306.

76. Willis, L.G., M.L. Winston, B.M. Honda. 1992. Phylogenetic relationships in the honey bee (genus *Apis*) as determined by the sequence of the cytochrome oxidase II region of mitochondrial DNA. *Molec. Phylogenetics and Evolution* 1: 169-178.

77. Naumann, K., M.L. Winston, K.N. Slessor, G.D. Prestwich, B. Latli. 1992. Intra-nest transmission of aromatic honey bee queen mandibular gland pheromone components: movement as a unit. *Can. Entomol.* 124: 917-934.

78. Wyborn, M.H., M.L. Winston, P.H. Laflamme. 1993. Mass storage of honey bee (Hymenoptera: Apidae) queens during the winter. *Can. Entomol.* 125: 113-128.

79. Schmid-Hempel, P., M.L. Winston, R.C. Ydenberg. 1993. The foraging behaviour of individual workers in relation to colony state in the social Hymenoptera. *Can. Entomol.* 125: 129-160. (C.P. Alexander Fund Invited Review).

80. Naumann, K., M.L. Winston, K.N. Slessor. 1993. Movement of honey bee (*Apis mellifera* L.) queen mandibular gland pheromone in populous and unpopulous colonies. *J. Insect Behav.* 6: 211-223.

81. Plettner, E., K.N. Slessor, M.L. Winston, G.E. Robinson, R.E. Page. 1993. Mandibular gland components and ovarian development as measures of caste differentiation in the honey bee (*Apis mellifera* L.) *J. Insect Physiol.* 39: 235-240.

82. Winston, M.L., K.N. Slessor, W.L. Rubink, J.D. Villa. 1993. Enhanced pheromone lures to attract honey bee swarms. *Amer. Bee J.* 133: 58-60.

83. Winston, M.L., K.N. Slessor. 1993. Applications of honey bee queen mandibular pheromone for beekeeping and crop pollination. *Bee World* 74: 111-128.

84. Pettis, J.S., M.L. Winston, M. Malyon, K.N. Slessor. 1993. The use of honey bee queen mandibular pheromone ("Bee Boost") in mating nuclei management. *Amer. Bee J.* 133: 725-727.

85. Schmidt, J.O., K.N. Slessor, M.L. Winston. 1993. Roles of nasonov and queen pheromones in attraction of honeybee swarms. *Naturwissenschaften* 80: 573-575.

86. Pankiw, T., M.L. Winston, K.N. Slessor. 1994. Variation in worker response to honey bee (*Apis mellifera* L.) queen mandibular pheromone. *J. Insect Behav.* 7: 1-15.

87. Currie, R.W., M.L. Winston, K.N. Slessor. 1994. The effect of honey bee (*Apis mellifera* L.) synthetic queen mandibular compound on queenless "disposable" pollination units. *American Bee Journal* 134: 200-202.

88. Eckert, C.D., M.L. Winston, R.C. Ydenberg. 1994. The relationship between population size, amount of brood, and individual foraging behaviour in the honey bee, *Apis mellifera* L. *Oecologia* 94: 248-255.

89. Naumann, K., M.L. Winston, K.N. Slessor, M.J. Smirle. 1994. Impact of honey bee queen mandibular gland pheromone ("Fruit Boost") applications on pear and sweet cherry pollination. *J. Econ. Entomol.* 87: 1595-1599.

90. Winston, M.L. 1994. The Africanized "Killer" bee: biology and public health. Invited review, *Q. Rev. Medicine* 87: 263-267.

91. Pettis, J.S., M.L. Winston, A.M. Collins. 1995. Suppression of queen rearing in European and Africanized honey bees *Apis mellifera* L. by synthetic queen mandibular gland pheromone. *Insectes Sociaux* 42: 113-121.

92. Higo, H., M.L. Winston, K.N. Slessor. 1995. Mechanisms by which honey bee (Hymenoptera: Apidae) queen pheromone sprays enhance pollination. *Annals Entomol. Soc. Amer.* 88: 366-373.

93. Pettis, J.S., M.L. Winston, K.N. Slessor. 1995. Behavior of queen and worker honey bees *Apis mellifera* L. (Hymenoptera: Apidae) in response to exogenous queen mandibular pheromone. *Annals Entomol. Soc. Amer.* 88: 580-588.

94. Pankiw, T., M.L. Winston, K.N. Slessor. 1995. Queen attendance behavior of worker honey bees (*Apis mellifera* L.) that are high and low responders to queen mandibular gland pheromone. *Insectes Sociaux* 42: 371-378.

95. Plettner, E., G.R.J. Sutherland, K.N. Slessor, M.L. Winston. 1995. Why not be a queen? Regioselectivity in the mandibular secretions of honey bee castes. *J. Chemical Ecology* 21: 1017-1029.

96. Melathopoulos, A.P., M.L. Winston, J.S. Pettis, T. Pankiw. 1996. The effect of queen mandibular pheromone on the initiation and maintenance of developing queen cells in the honey bee (*Apis mellifera* L.). *Canadian Entomol.* 128: 263-272.

97. Fewell, J.H., M.L. Winston. 1996. Regulation of nectar collection in relation to honey storage levels by honey bees *Apis mellifera*. *Behavioral Ecology* 7: 286-291.

98. Pankiw, T., M.L. Winston, E. Plettner, K.N. Slessor, J.S. Pettis, O.R. Taylor. 1996. Mandibular gland components of European and Africanized honey bee queens. *J. Chem. Ecol.* 22: 605-615.

99. Plettner, E., K.N. Slessor, M.L. Winston, J.E. Oliver. 1996. Caste-selective pheromone biosynthesis in honey bees. *Science* 271: 1851-1853.

100. Plettner, E., G.W. Otis, P.D.C. Wimalaratne, M.L. Winston, K.N. Slessor, T. Pankiw, P.W.K. Punchihewa. 1997. Species and caste determined mandibular blend signals in honey bee (*Apis*). *J. Chem. Ecology* 23:363-377.

101. Pettis, J.S., H.A. Higo, T. Pankiw, M.L. Winston 1997. Queen rearing suppression in the honey bee: evidence for a fecundity signal. *Insectes Sociaux* 44:311-322.

102. Slessor, K.N., L.J. Foster, M.L. Winston 1998. Royal Flavours: honey bee queen pheromones. in: *Chemical Communication in Social Insects*. eds. R.K. Vandermeer, M. Breed, K. Espelie, M.L. Winston, Westview Press.

103. Winston, M.L., K.N. Slessor. 1998. Honey bee primer pheromone and colony organization: gaps in our knowledge. *Apidologie* 29:81-95.

104. Robinson, G.E., S.E. Fahrbach, M.L. Winston 1998. Towards the study of genes, molecules, and social behavior in the insect societies. *BioEssays* 19:1099-1108.

105. Pankiw, T., Z.-Y. Huang, M.L. Winston, G.E. Robinson 1998. Queen mandibular pheromone influences worker honey bee (*Apis mellifera* L.) foraging ontogeny and juvenile hormone titers. *J. Insect Physiology* 44:685-692.

106. Watmough, J., M.L. Winston, K.N. Slessor 1998. Distinguishing the effects of dilution and restricted movement on the intra-nest transmission of honey bee queen pheromone. *Bull. Mathematical Biology* 60:307-327.
107. Plettner, E., K.N. Slessor, M.L. Winston 1998. Biosynthesis of mandibular acids, route of fatty acid hydroxylation, and caste selective *B*-oxidation. *Insect Biochem. and Molecular Biology* 28:31-42.
108. Lin, Huarong, M.L. Winston 1998. The role of nutrition and temperature in worker honey bee (*Apis mellifera* L.) ovary development. *Canadian Entomol.* 130:883-891.
109. Pettis, J.S., L.C. Westcott, M.L. Winston 1998. Balling behavior in the honey bee in response to exogenous queen mandibular pheromone. *J. Apicultural Research* 37:125-131
110. Otis, G.W., O.R. Taylor, M. Spivak, M.L. Winston, S.J. Katz, P.F. Kukuk 1999. Timing of mating flights of neotropical African and European honey bee queens and drones (Hymenoptera: Apidae) in eastern Venezuela. *Univ. Kansas Nat. Hist. Mus. Spec. Publ.* 24: 103-109.
111. Winston, M.L., J. Marceau, H. Higo, S. Cobey 1999. Honey bee pheromones do not improve requeening success. *American Bee Journal* 138:900-903
112. Westcott, Lynn C., M.L. Winston 1999. Chemical acaricides in *Apis mellifera* L. (Hymenoptera: Apidae) colonies: do they cause non-lethal effects? *Canadian Entomologist* 31:363-372.
113. Lin, Huarong, M.L. Winston, N.H. Haunerland, K.N. Slessor 1999. The influence of age, trophallaxis and population on worker honey bee (*Apis mellifera* L.) ovarian development and vitellogenesis. *Canadian Entomologist* 131:695-706.
114. Dogterom, M.H. and M.L. Winston 1999. Pollen storage and foraging by honey bees, *Apis mellifera* L., in highbush blueberries, *Vaccinium corymbosum* L. 'Bluecrop.' *Canadian Entomologist* 131:757-768.
115. Downey, Danielle L., Tobi T. Higo, Mark L. Winston 2000. Single and dual parasitic mite infestations on the honey bee, *Apis mellifera* L. *Insectes Sociaux* 171-176.
116. Janmaat, Alida F., M.L. Winston, Ron C. Ydenberg 2000. Condition dependent response to change in pollen stores by honey bee colonies with different parasitic loads. *Behav. Ecol. Sociobiol.* 47:171-179.
117. Lindberg, Christopher M., Adony P. Melathopoulos, Mark L. Winston 2000. A laboratory bioassay for evaluating miticides to control *Varroa jacobsoni* Oud. (Acari: Varroidae), a honey bee (*Apis mellifera* L., Hymenoptera: Apidae) parasite. *J. Economic Entomology* 93:189-198.
118. Janmaat, Alida F., Mark L. Winston 2000. The influence of pollen storage area and *Varroa jacobsoni* Oudemans parasitism on temporal caste structure in honey bees (*Apis mellifera* L.). *Insectes Sociaux* 47:177-182.
119. Dogterom, Margriet H.; Mark L. Winston; Amy Mukai 2000. Effect of pollen load size and source (self, outcross) on seed and fruit production in highbush blueberry CV. 'Bluecrop' (*Vaccinium corymbosum*; Ericaceae) *American J. Botany* 87:1584-1591.
120. Whittington, R., Mark L. Winston, Adony P. Melathopoulos, Heather A. Higo 2000. Evaluation of the botanical oils neem, thymol, and canola sprayed to control *Varroa jacobsoni* Oud. (Acari: Varroidae) and *Acarapis woodi* (Acari: Tarsonemidae) in colonies of honey bees (*Apis mellifera* L., Hymenoptera: Apidae). *American Bee Journal* 140:567-572.
121. Janmaat, Alida F., Mark L. Winston 2000. Removal of *Varroa*-infested brood in honey bee colonies with differing pollen stores. *Apidologie* 31:377-385.

122. Melathopolous, Adony P., Mark L. Winston, Robin Whittington, Tasha Smith, Chris Lindberg, Amy Mukai, and Margo Moore 2000. Comparative laboratory toxicity of neem pesticides to honey bees (Hymenoptera: Apidae), their mite parasites *Varroa jacobsoni* (Acari: Varroidae) and *Acarapis woodi* (Acari: Tarsonemidae), and brood pathogens *Paenibacillus larvae* and *Ascophera apis*. *J. Economic Entomology* 93:199-209.

123. Melathopolous, Adony P., Mark L. Winston, Robin Whittington, Heather Higo, and Monique Ledoux 2000. Field evaluation of neem and canola oil for the selective control of the honey bee (Hymenoptera: Apidae) mite parasites *Varroa jacobsoni* (Acari: Varroidae) and *Acarapis woodi* (Acari: Tarsonemidae). *J. Economic Entomology* 93:559-567.

124. LeDoux, Monique N., Stephen F. Pernal, Heather Higo, Mark. L. Winston 2000. Development of a bioassay to test the orientation behaviour of the honey bee ectoparasite *Varroa jacobsoni* Oudemans. *J. Apic. Res.* 39:47-54.

125. Ledoux, Monique. N., Mark L. Winston, Heather A. Higo, Christopher I. Keeling, Keith N. Slessor, Yves LeConte 2000. Queen and pheromonal factors influencing comb construction by simulated honey bee (*Apis mellifera* L.) swarms. *Insectes Sociaux* 48:14-20.

126. Pankiw, Tanya; Mark L. Winston, M. Kim Fondrk, Keith N. Slessor 2000. Selection on worker honey bee responses to queen pheromone (*Apis mellifera* L.). *Naturwiss.* 87:487-490.

127. Downey, Danielle, Mark L. Winston 2001. Honey bee colony mortality and productivity with single and dual infestations of parasitic mite species. *Apidologie* 32:567-575.

128. Rice, Nathan D., Mark L. Winston, Robin Whittington, Heather A. Higo 2002. A comparison of release mechanisms for botanical oils to control *Varroa jacobsoni* Oud. (Acari: Varroidae) and *Acarapis woodi* (Rennie) (Acari: Tarsonemidae) in colonies of honey bees (*Apis mellifera* L., Hymenoptera: Apidae). *J. Economic Entomology* 95:221-226.

129. Otis, Gard W., Orley R. Taylor, Mark L. Winston 2002. Colony size affects reproductive attributes of Africanized honey bees. *Proc. 2<sup>nd</sup> International Conference on Africanized Honey Bees and Bee Mites*, p. 25-33, eds. E. H. Erickson Jr., R. E. Page Jr., A. A. Hanna, A. I Root, Medina, Ohio.

130. Sabara, Holly A., Mark L. Winston 2003. Managing honey bees (Hymenoptera: Apidae) for greenhouse tomato pollination. *J. Economic Entomology* 96:547-554.

131. Morandin, Lora A., Mark L. Winston 2003. Effects of novel pesticides on bumble bee (*Bombus* spp., Hymenoptera:Apidae) colony health and foraging ability. *Environmental Entomology* 32:555-563.

132. Keeling, Chris I., Keith N. Slessor, Heather A. Higo, Mark L. Winston 2003. New components of the honey bee (*Apis mellifera* L.) queen retinue pheromone. *Proc. National Academy Sciences (U.S.)* 100:4486-4491.

133. Whittington, Robin, Mark L. Winston, Chris Tucker, Amy L. Parachnowitsch 2003. Pollen species collected by greenhouse bumble bees. *Canadian Journal of Plant Science* (in press).

134. Hoover, Shelley E., Christopher I. Keeling, Mark L. Winston, Keith N. Slessor 2003. The effect of queen pheromones on worker honey bee ovary development. *Naturwiss.* 90:477-480.

135. Whittington, Robin and Mark L. Winston 2003. Are bumble bee colonies in tomato greenhouses obtaining adequate nutrition? *Canadian Entomologist* 135:883-892.

136. Whittington, Robin, Mark. L. Winston 2003. Effects of *Nosema bombi* and its treatment fumagillin in bumble bee (*Bombus occidentalis*) colonies. *J. Invertebrate Pathology* 84:54-58.

137. Sabara, Holly A., David R. Gillespie, Elizabeth Elle and Mark L. Winston 2004. Influence of brood, vent Screening, and time of year on honey bee (Hymenoptera: Apidae) pollination and fruit quality of greenhouse tomatoes. *J. Economic Entomology* 97:727-734.
138. Higo, Heather A., Nathan D. Rice, Mark L. Winston, Bob Lewis 2004. Supplementary pollination of commercial greenhouse tomatoes with honey bees (Hymenoptera: Apidae). *J. Economic Entomology* 97:163-170.
139. Birmingham, Anna, Mark L. Winston 2004. Orientation and drifting of bumble bees in commercial greenhouses. *Canadian J. Zoology* 82:52-59.
140. Franklin, Michelle, Mark L. Winston, Lora Morandin, 2004. Effects of clothianidin on *Bombus impatiens* (Hymenoptera: Apidae) colony health and foraging ability. *Ecotoxicology* 97:369-373.
141. Rice, Nathan D., Mark L. Winston, Heather A. Higo 2004. Integrated pest management for the parasitic mite *Varroa destructor* (Anderson and Grueman) in colonies of honey bees (*Apis mellifera* L.). *American Bee Journal*
142. Morandin, Lora A. and Mark L. Winston 2004. Wild bee abundance differences in conventional, organic and genetically modified canola and its effect on seed production. *Ecological Applications* (in press).
143. Whittington, Robin, Mark. L. Winston 2004. Comparison and examination of *Bombus occidentalis* and *Bombus impatiens* (Hymenoptera: Apidae) as pollinators of greenhouse tomatoes. *J. Economic Entomology* (in press).
144. Lin, Huarong, Mark L. Winston, Keith N. Slessor, Norbert Haunerland 2004. The effect of bee pheromones on worker honey bee (*Apis mellifera* L.) ovary development and vitellogenesis. *J. Chemical Ecology* (in press).
145. Hoover, Shelley R., Ben P. Oldroyd, T.C. Wossler, and Mark L. Winston 2005. Anarchistic queen honey bees have normal queen mandibular pheromones. *Insectes Sociaux* (in press).
146. Tommasi, Désirée, Alice Miro, Heather A. Higo, Mark L. Winston 2005. Bee diversity and abundance in an urban setting. *Canadian Entomologist* (in press)
147. Birmingham, Anna, Shelley Hoover, Ron Ydenberg, Mark L. Winston 2005. Social implications of bumble bee drift. *Canadian J. Zoology* (in press)

## **OTHER PUBLICATIONS**

### **Books**

Winston, M.L. 1987. *The Biology of the Honey Bee*. Harvard University Press, 281 pp.  
 1993. *La biologie de l'abeille*. Frison-Roche (French translation)  
 2003. *A Biologia da Abelha*. Porto Alegre, Brazil (Portuguese translation)

Winston, M.L. 1992. *Killer Bees: the Africanized Honey Bee in The Americas*. Harvard University Press, 162 pp.

Winston, M.L. 1997. *Nature Wars: People vs. Pests*. Harvard University Press., Cambridge, Mass.  
 2003. Chinese translated edition, Beijing University Press, Beijing, China.

Received Sterling Prize in Support of Controversy, 1998  
 Short-listed, BP Natural World Book Prize, 1998

Winston, M.L. 1998. *From Where I Sit: Essays on Bees, Beekeeping, and Science*. Cornell University Press, Ithaca, N.Y.

Winston, M.L. 2002. *Travels in the Genetically Modified Zone*. Harvard University Press  
 2002. Australian edition. Scribe Publications, Australia  
 2003. India/Southeast Asia edition. Universities Press, Hyderabad, India  
 2004. Japanese edition, Seiryu Publishing Company, Japan

R.K. Vandermeer, M.D. Breed, M.L. Winston, K. Espelie 1998. *Chemical Communication in Social Insects*. Westview Press, Boulder, Colo.

### **Book Chapters**

Winston, M.L. 1983. Honeybees. *In: Costa Rican Natural History*. D. Janzen, Ed. University of Chicago Press 816 pp.

Fewell, J.H. and M.L. Winston. 1990. The relationship between food stores and foraging effort in the honey bee *Apis mellifera* L. *In: Social Insects and the Environment*. eds. G.K. Veeresh, B. Mallik, C.K. Viraktamath. Oxford Publishing, New Delhi.

Winston, M.L. 1991. The Inside Story: Internal Colony Dynamics of Africanized Honey Bees. *In: The African Honey Bee*. Eds. M. Spivak, D.J.C. Fletcher, M.D. Breed, Westview Press, Colorado.

Winston, M.L. 1992. The honey bee colony: life history. *In: The Hive and the Honey Bee*. Dadant and Sons, pp. 73-101.

Winston, M.L. and K.N. Slessor. 1993. The essence of royalty: honey bee queen pheromone. *In: Exploring Animal Behavior*. Ed. D.W. Sherman and J. Alcock, Sinauer, pp. 128-139 (reprint of Winston and Slessor 1992, American Scientist).

Winston, M.L. 1997. Insects and Insect Pests. The Greater Vancouver Book.

### **Popular Articles (sample)**

1992. The Africanized Killer Bee. Encyclopaedia Britannica, Year in Science pp. 98-111.  
 1992. Honey, they're here. The Sciences, March/April, 22-28.  
 1993. Where's the Buzz? The Demise of Wild Bees in a Managed World. Orion Magazine, September issue.  
 1999. An Inadequate Arsenal for the Insect Invasion, Op-Ed page, New York Times, 11 Sept.  
 1999- Columns, Insight/Forum/Commentary sections, Vancouver Sun and affiliated newspapers

## **Beekeeping Popular Articles (sample)**

Monthly Column: Bee Culture Magazine, 1994-present.

Research Review: Column, B.C. Honey Producers' Association Newsletter, 1981-1996.

Winston, M.L. 1983. Trends in Canadian beekeeping. Amer. Bee J. 123: 837-840.

Winston, M.L. and C.D. Scott. 1984. The value of bee pollination to Canadian apiculture. Can. Beekeeping 11: 134.

Otis, G.W., O.R. Taylor and M.L. Winston. 1984. Capturing wild honey bee colonies. Amer. Bee J. 124: 372-374.

Winston, M.L. 1986. Can package bees and nuclei be produced commercially in British Columbia, Canada? American Bee J. 126: 36-38.

Wyborn, M.H., M.L. Winston, P.H. La Flamme. 1993. Storing mated queens during the winter in managed honey bee colonies. Amer. Bee J. 133: 201-205.

Winston, M.L. 2003. Bees and Biotechnology. Guest editorial, Bee World, 84: 141-143.

## **Book Reviews**

Winston, M.L. 1988. Interindividual Behavioral Variability in Social Insects, ed. R. Jeanne, in Science 242: 121.

Winston, M.L. 1990. Ecology and Natural History of Tropical Bees by D. Roubik, in Science: 248: 1026-1027.

Winston, M.L. 1992. Diversity in the Genus *Apis*. Ed. D. Smith, in J. of Insect Behavior 5: 539-541.

Winston, M.L. 1994. Behavior and Social Evolution of Wasps, Y. Itô, in EcoScience 1: 93.

Winston, M.L. 1994. Pioneer Naturalists. H. Evans, in Quarterly Review of Biology 69: 256.

Winston, M.L. 1996. The Wisdom of the Hive, T. Seeley, in Science 272: 967.

Winston, M.L. 1998. Queen Rearing and Bee Breeding, H.H. Laidlaw and R.E. Page, Bee Culture May:14-15; American Bee Journal 138:494-495.

## **Television**

Apiculture: An Introduction to Bees and Beekeeping.  
9 hr television series first broadcast on the Knowledge Network of British Columbia.  
February - April, 1983, rebroadcast 1984, 1986, 1988, 1989, 1990, 1991, 1992, 1993.

## **Patents**

1990. Novel pheromone composition for use in controlling honey bee colonies (granted in U.S., no. 4,990,331, also in Canada, Australia, New Zealand).

## **Other**

Winston, M.L. 1999. Editor, Apimondia Proceedings, 36<sup>th</sup> International Beekeeping Congress, 316 pp.