

CURRICULUM VITAE

Christopher Brian Watkins

Present position: Director, Cornell Cooperative Extension, Associate Dean for Colleges of Agriculture and Life Sciences and College of Human Ecology, and Professor, Postharvest Science

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Education

1981-1985 PhD: Rutgers - The State University of New Jersey.
1976-1978 MSc, first class honors: University of Auckland, New Zealand.
1973-1976 BSc: University of Auckland, New Zealand.

Professional experience

2014 to present Director, Cornell Cooperative Extension, and Associate Dean for College of Agriculture and Life Sciences, and College of Human Ecology.
2004 to present Professor, Postharvest Physiology, Department of Horticulture, Cornell University.
2006 to 2014 Associate Director, Cornell Cooperative Extension, Agriculture and Food Systems.
1994 - 2003 Associate-Professor, Postharvest Physiology, Department of Horticulture, Cornell University.
1985 - 1994 Science manager (1986 onwards) and scientist in the Postharvest Science Group of The Horticulture and Food Research Institute of New Zealand, Auckland (formerly the Division of Horticulture and Processing, 1985-1990, and DSIR Fruit and Trees, 1990-1992).
1981-1985 Graduate student in Department of Horticulture and Forestry at Rutgers

University, NJ, USA supported by a New Zealand National Research Advisory Council fellowship.
1978-1981 Scientist in the Postharvest Physiology and Storage Section of the Division of Horticulture and Processing, DSIR.

Research Focus

My research program is focused on developing the knowledge required for use of 1-methylcyclopropene (1-MCP), a new ethylene-binding inhibitor that extends the storage life of apples. This work is now being extended to preharvest 1-MCP applications. I also conduct research on new cultivars of importance to New York growers, on the effects of postharvest techniques on the nutritional quality of fruit, and to better understand the underlying mechanisms in fruit responses to storage conditions such as temperature, atmosphere, and 1-MCP, and the interaction of these factors with the development of storage disorders. Current projects focus on the development of physiological disorders of apples such as internal browning, external carbon dioxide injury and superficial scald.

Outreach and Extension Focus

I am responsible for developing and conducting the harvest maturity management, postharvest handling, and storage technology component of the multidisciplinary statewide fruit Extension program. I work in cooperation with Extension faculty in various departments, regional fruit specialists, Extension educators, storage operators, and marketers in development, conduct, and evaluation of the Extension program.

Graduate School Affiliation

2001- Horticulture
1995 - Food Science and Technology
1994 -2001 Pomology

Honors and Awards

2013 Herman M. Cohn Professor of Horticulture
2013 The George Goodling Memorial lecture, State Horticultural Society of Pennsylvania
2010 Crystal Apple - Award of the Director of the Szczepan Pieniazek Research Institute of Pomology and Floriculture, Skierniewice, Poland.
2005 ASHS Outstanding Extension Educator Award.
2003 The 2003 Award for Excellence to the NE 103 Technical Committee by the Northeastern Regional Association of State Agricultural Experiment Station Directors.
1992 Trimble Agricultural Research Fund: Three month research project at University of Massachusetts.
1988 Winston Churchill Memorial Trust Fellowship: Six month project at University of Nottingham, England.
1981 National Research Advisory Council fellowship for PhD studies at Rutgers.
1978 First class honors for MSc.

Membership of Professional Societies

1981 - American Society of Horticultural Science, member of Postharvest working group.
1981 - American Society of Plant Biologists

2003- Institute of Food Technologists
 1986 - 1996 NZ Institute of Horticultural Science
 1986 - 1996 NZ Institute of Agricultural Science
 1996 - American Association for the Advancement of Science.

Professional Society Responsibilities

ASHS Postharvest working group: Secretary 1997-1998 and Chairman, 1998-1999.

Departmental, College and University Service

2011- Graduate admissions committee, Horticulture.
 2010 Ad Hoc promotion and tenure committee.
 2007-2012 Mentoring committee member for Neil Mattson.
 2002 - 2006 College Faculty Financial Advisory
 2002 - 2006 University Library Board
 2002 - 2005 Apple strategic planning task force (chaired by Jim Hunter and Terence Robinson).
 2005 Ad Hoc promotion and tenure committee.
 2002 - 2005 Mentoring committee member for Susheng Gan.
 2001 - Fruit PWT executive member.
 2002 Ad Hoc promotion and tenure committee.
 1999 Search committee – Pomologist, Department of Horticultural Sciences, Hudson Valley Laboratory.
 1999 - 2000 Acting Co-Chair, Statewide Planning Council, Fruit.
 1998 Search committee - Fruit and Vegetable Process Engineer, Food Science and Technology.
 Search committee - Extension Associate for Horticultural Product Marketing, ARME.
 1997 - 2000 Department Senator on CALS Senate.
 1996 - 1997 Search committee - Postharvest Extension Agent, Lake Ontario Fruit team.
 1996 - Member of the Institute of Food Science.
 1995 - 2000 Departmental representative on the Food Science and Nutrition Council.
 1995 - 2001 Apple Crop Germplasm Committee.

Editorial Responsibilities

1993 -2011 Editorial Board member, Postharvest Biology and Technology.
 1999 - 2004 Associate Editor, HortScience (Postharvest: temperate fruits).
 2013-2016 Editorial Advisory Board, Encyclopedia of Applied Plant Sciences
 Ad hoc reviewer of manuscripts for the International Journal of Food Science and Technology, Journal of the American Society of Horticultural Science, HortScience, HortTechnology, Journal of Experimental Botany, Annals of Applied Biology, Journal of Genetics, Journal of Horticultural Science and Biotechnology, New Zealand Journal of Crop and Horticultural Science, Postharvest Biology and Technology, Journal of the Science of Food and Agriculture, Journal of Food Science, Plant and Cell Physiology, Plant Physiology and Biochemistry, Journal of Food Processing and Preservation, Lebensmittel-Wissenschaft und –Technologie (LWT), Journal of Texture Studies,

Journal of Tree Fruit Production, Botany, Physiologia Plantarum, Scientia Horticulturae, Plant Physiology, Molecular Biology Reports, Fruits, Journal of Plant Physiology, ASHRAE Refrigeration Handbook, Commodity Storage Manual (The Refrigeration Research and Education Foundation).

Graduate Students

Graduate majors - current

Franziska Doerflinger, PhD, 2014, Horticulture

Yiyi Zhang, MPS, 2014, Food Science

Gilang Gilang, MS, 2016, Food Science

Graduate majors - completed

Jin-Wook Lee, PhD, 2011, Horticulture

Rujira Deewatthanawong, PhD, 2010, Horticulture

Fanjaniaina Razafimbelo, PhD, 2008, Horticulture

Adirek Rugkong, PhD, 2008, Horticulture

Monica Ponce-Valadez, PhD, 2007, Horticulture

Youngjae Shin, PhD, 2007, Food Science

Irene Kadzere, PhD, 2005, Horticulture

Beatriz Calderon Lopez, MS, 2003, Food Science

Jenny Zhang, PhD, 2003, Horticulture

Gurbuz Gunes, PhD, 2001, Food Science

Hongjing Xia, MS, 2001, Horticulture

Maria Elisa Garcia-Martino, MS, 1998, Food Science

Jenny Zhang, MS, 1997, Horticulture

Debra Dawson, PhD, 1993

Mette Larsen, PhD, 1993

Graduate minors – current

Cuong Nguyen, PhD, 2014, Plant Biology

Yaxin Wang, MS, 2014, Horticulture

Graduate minors - completed

Younghua He, PhD, 2012, Horticulture

Niilante Amissah, PhD, 2010, Food Science

Greg Peck, PhD, 2008, Horticulture

Susan Liou, PhD, 2006, Horticulture

Sami El-Rakshy, PhD, 2005, Horticulture

Elizabeth Fox, PhD, 2005, Plant Biology

Garry Legnani, PhD, 2004, Horticulture

Daniel Sanchez, MS, 2004, Food Science

Niilante Amissah, MS, 2003, Food Science

Guy de Capdeville, PhD, 2002, Plant Pathology

Melanie Budiman, MS, 1998, Biological Engineering

Sukwon Kang, PhD, 1996, Biological Engineering

External Examiner

Dagar Anurag, PhD, The Hebrew University of Jerusalem, Israel, 2013.

Inge Bulens, PhD, Katholieke Universiteit, Leuven, 2012.

Sarah Pilkington, PhD, University of Canterbury, Christchurch, New Zealand, 2012.
 Tan Van Pham, PhD, University of Sydney, NSW, Australia, 2008.
 Penta Pristijono, PhD, University of Newcastle, NSW, Australia, 2007.
 Paul East, PhD, Massey University, New Zealand, 2006.
 David R. Harris, PhD, University of Newcastle, Australia, 2004.
 Jason Johnston, PhD, Massey University, New Zealand, 2001
 John Golding, PhD, University of Western Sydney, Australia, 1999.
 Jennifer DeEll, PhD, University of Guelph, Canada, 1996.
 Ben Dadzie, PhD, Massey University, New Zealand, 1992.
 Elizabeth Lee, MSc, Macquarie University, Australia, 1990.

International Speaking Invitations

- 2013** Australia, December 5: ‘Understanding the mechanisms in fruit response to various storage conditions’ and ‘Storage disorders – can they be predicted with precise and timely diagnostics?’. Postharvest Cool Store Seminar, Melbourne.
China, October 21 and 22: ‘Maximizing the best of 1-MCP application to apples and other fruit, while minimizing the negative’ and ‘Development of CA storage and latest innovations’. Nanjing Agricultural University.
England, September 3: ‘Maximizing the responses of apple fruit to 1-MCP to enhance the best and minimize the worst’. VI International Postharvest Conference. Managing Quality in Chains, Cranfield University, September 2-5.
Turkey, April 29: ‘Insights into physiological disorders of horticultural products revealed by 1-methylcyclopropene (1-MCP)’. 2nd International Symposium on Discovery and Development of Innovative Strategies for Postharvest Disease Management, Kusadasi, April 28-May 2.
- 2012** New Zealand, March 22: ‘Pre- and post-harvest uses of 1-MCP as a tool to investigate ethylene responses in fruit’. The IXth International Conference on the Plant Hormone Ethylene, Rotorua, March 19-23.
Korea, June 12: ‘Pre- and post-harvest 1-MCP on quality of apples’.
Spain, October 1: ‘Effect of 1-MCP on apple fruit physiological disorders’. Genomic and metabolomic approaches. X Simposio Nacional y VII Ibérico sobre Maduración y Postcosecha de Frutas y Hortalizas, Lleida, October 1-4.
Belgium, December 13: ‘The American experience using SmartFresh™ on pipfruit’. Katholieke Universiteit, Leuven, Belgium.
- 2011** Canada, February 24: ‘Updates on McIntosh and Empire apple storage’. Ontario Fruit & Vegetable Convention, Brock University, St. Catherines, Ontario.
Canada, April 13: ‘Drop control program’s influence on storage quality’. AgroFresh Crunch Clinic, Montreal, Quebec.
Canada, April 13: ‘Carbon dioxide injury control’. AgroFresh Crunch Clinic, Montreal, Quebec.
Canada, April 13: ‘Experiences with repeated SmartFresh applications’. AgroFresh Crunch Clinic, Montreal, Quebec.
China, June 28: ‘Managing ethylene before and after harvest’. Chinese Agricultural University, Beijing.
China, July 1: ‘Managing ethylene before and after harvest’. Beijing Forestry Institute, Beijing.
Australia, September 21: ‘1-MCP and apples – a marriage made in heaven, with a

- few rough patches!' Australasian Horticulture Society, Lorne, Victoria.
- China, October 27: 'Insights into physiological disorders of horticultural products revealed by 1-methylcyclopropene (1-MCP)'. International Workshop on Biology of Fruit Quality', Hangzhou
- China, November 21: 'Using 1-MCP to manage fruit quality, especially apples'. Chinese Academy of Agricultural Sciences (CAAS), Xingcheng.
- 2010** Canada, May: 'Managing CO₂ injury in McIntosh and other cultivars'. AgroFresh Crunch Clinic, Kelowna, BC.
- Poland, May: 'The effects of pre- and post-harvest 1-MCP treatment on quality of fruits and vegetables'. Skierniewice.
- Canada, November: 'Harvista and ReTain interactions with storage of Honeycrisp apples grown in three regions of New York'. Great Lakes fruit Worker Meeting, Leamington, Ontario.
- 2009** Turkey, April: Postharvest 2009, Antalya.
- Canada, May: 'Control of internal browning, carbon dioxide injury, and Harvista technology research update'. AgroFresh Crunch Clinic, Toronto.
- New Zealand, November: Postharvest Pacifica, Napier.
- 2008** Israel, March: COST Action 924, Tel Aviv.
- Greece, November: Departmental seminars, Athens.
- 2007** Germany, November: COST Action 924, Ravensburg.
- 2006** Italy, June: Ethylene 2006, Pisa.
- Korea, August: International Horticulture Society of Horticulture, Seoul.
- China, August: International Apple Symposium, Yantai; Northwestern University, Yangling; Chinese Agricultural University, Beijing.
- Canada, September: Ontario Apple School, Norfolk.
- 2005** Sultanate of Oman, January: Postharvest Technology & Quality Management in Arid Tropics.
- 2004** Canada, February: Ontario Fruit and Vegetable Conference, St. Catherines.
- Italy, June: Postharvest 2004, Verona.
- Australia, November: Postharvest Downunder, Sydney.
- 2003** Thailand, August: APEC Symposium on Postharvest Handling Systems, Bangkok.
- 2002** Spain, April: NATO workshop on ethylene, Murcia.
- India, July: Cornell Agribusiness Conference, Pune.
- 2000** Israel, March: Postharvest 2000, Jerusalem.
- Canada, July: Apple storage school, Clarksburg, Ontario.
- 1999** Canada, February: Forum sur la concertation en recherche et transfert technologique du secteur de la production horticole au Quebec.
- China, October: International Symposium and Exhibition on Fruit/Vegetable Processing Technology and Industrialization, Yantai.
- South Korea, October: Korean Society of Postharvest Science and Technology of Agricultural Products, Yeungnam University, Taegu.
- 1997** Israel, March: International Congress on the Uses of Plastics in Agriculture, Tel Aviv.
- Canada, February: Apple Growing Information Day, St-Hyacinthe Agricultural Technology Institut, Quebec.
- 1996** New Zealand, August: Controlled Atmosphere Storage workshop, Hastings.
- 1995** Chile, October: To present two papers on calcium research, to advise growers, and to review the postharvest research program at University of Talca.

- 1993** Malaysia, November: IILP International Symposium and Workshop on Commercial Production of Fruit, Vegetables and Flowers, Universiti Pertanian.
USA, March: International Symposium on Storage Scald and the 9th Annual Washington Tree Fruit Postharvest Conference, Wenatchee, WA,

National Speaking Invitations

- 2013** January 29: Use of SmartFresh on different apple varieties. Mid-Atlantic Fruit and Vegetable Convention, Hershey, Pennsylvania.
March 1: 1-MCP and the apple fruit: applied and basic aspects. Department of Plant Biology and Pathology, Rutgers, New Jersey.
May 7: ‘DPA use with 1-MCP’. Pace International Postharvest Academy, Ellensburg, Washington.
- 2012** Dec 5: ‘Why is Honeycrisp so tricky?’. Washington State Horticulture Show, Yakima, Washington.
Dec 5: ‘Carbon dioxide injury of apples’. Washington State Horticulture Show, Yakima, Washington.
- 2011** May 26: ‘Managing ethylene for storage of horticultural products’. Postharvest Unlimited, Leavenworth, Washington.
- 2010** March: ‘The role of ethylene both pre- and postharvest on apple responses to 1-MCP’. 53rd IFTA Conference, Grand Rapids, Michigan.
March: ‘Bitterpit development and control, especially in Honeycrisp’. 53rd IFTA Conference, Grand Rapids, Michigan.
March: ‘1-MCP effects on physiological disorders’. 53rd IFTA Conference, Grand Rapids, Michigan.
June: 1-MCP effects on physiological disorders. Gordon Conference on Postharvest Physiology, GRC, New Hampshire.
July: ‘Recent Honeycrisp research’. AgroFresh Crunch Clinic, Hershey, Pennsylvania.
- 2009** May: ‘Honeycrisp maturity and storage – the east coast experience’. Washington State University Fruit School, Ellensburg, Washington.
May: ‘Controlling carbon dioxide injury and flesh browning’. Washington State University Fruit School, Ellensburg, Washington.
June: ‘Control of bitter pit and carbon dioxide injury’. Crunch Clinic, Grand Rapids, Michigan.
August: ‘Current and future research and uses of 1-MCP on apples’. National Growth Regulation Society, Asheville, North Carolina.
- 2008** January: ‘Managing bitter pit’. Indiana Horticulture Congress, Indianapolis, Indiana.
January: ‘Harvista – A new tool for harvest management’. Indiana Horticulture Congress, Indianapolis, Indiana.
- 2007** February: ‘Reviews on 1-MCP’, AgroFresh Apple Camp, Wilkes Barre, Pennsylvania.
March: ‘Harvista, a new tool for the NE apple industry’, NE Horticulture Society, Sturbridge, New Hampshire.
March: ‘Postharvest handling of vegetables to maintain quality’, NE Horticulture Society, Sturbridge, New Hampshire.
November:
- 2006** March: ‘Postharvest delivery of high quality product to consumers’ and

- ‘Managing Honeycrisp apples’, International Tree Fruit Association, Hershey, Pennsylvania.
- June: ‘Pre- and post-harvest handling for maximum response to SmartFresh (1-MCP)’, AgroFresh Apple Camp, Atlantic City, New Jersey.
- June: ‘Effects of SF on storage disorders’, AgroFresh Apple Camp, Atlantic City, New Jersey.
- 2005** August: ‘Browning disorders in apple fruit’. Fruit Quality Workshop, Yakima, Washington.
- August: ‘Honeycrisp maturity and storage’. Fruit Quality Workshop, Yakima, Washington.
- 2004** August: ‘Control of storage disorders of Honeycrisp’ and ‘New York perspective on 1-MCP’. MSU CA Clinic, Clarksville, Michigan.
- 2003** December: ‘The potential of 1-MCP for eastern apple industries’. Great Lakes Fruit, Vegetable & Farm market Expo, Michigan.
- 2001** January: ‘Update on MCP’. New England Fruit Meetings, Massachusetts.
- 2000** January: ‘Storage physiology 101 – fundamentals of product response to CA’, and ‘Effects of packing, cooling, and transport’. Vermont Fruit Quality Fruit School, Killington, Vermont.
- 1999** January: ‘What can we learn for the New Zealand apple industry’, and ‘Harvest and postharvest handling of fruit – issues for the apple industry’. Virginia and West Virginia Horticultural Societies Meeting, Roanoke, West Virginia.
- 1998** July: ‘Harvest and Storage Management for High Quality Fruit’. University of Massachusetts Extension Storage School, Belchertown, Massachusetts.
- 1997** January: ‘Harvesting, handling and storage for fruit quality’. 1997 Kansas Fruit Growers Annual meeting, Kansas.
- 1996** October: ‘Are the effects of heat treatments on physiology due to heat shock proteins?’. Workshop at ASHS Annual Meeting, Lexington, Kentucky.
- 1995** April: ‘Maturity and storage considerations for ‘Gala’ and ‘Fuji’’. Controlled Atmosphere Storage and Warehousing Clinic, Michigan State University, Michigan.

Statewide Speaking Invitations

- 2013** January 22: ‘Keys to early success with NY1 and NY2’, Empire State Producers Expo, Syracuse [84].
- April 9: ‘Harvest New York’, Alpha Zeta's National Agricultural Leadership Conference, Ithaca. [24]
- 2012** January 24: ‘Regional and harvest date relationships with storage quality of Honeycrisp apples’, Empire State Fruit and Vegetable Expo, Syracuse. [88]
- 2011** January 26: ‘Effect of stop drop materials on storage quality’, Empire State Fruit and Vegetable Expo, Syracuse.
- 2010** January: ‘Honeycrisp maturity and storage’, Western New York Tree Fruit Schools, Newark and Orleans.
- 2009** February: ‘Harvista – stop drop and storage effects on NY varieties’, Empire State Fruit and Vegetable Expo, Syracuse.
- February: ‘Harvest and storage for high quality strawberries’, Empire State Fruit and Vegetable Expo, Syracuse.
- February: Update on Harvista and storage protocols for McIntosh, Upper Hudson and Champlain Tree-Fruit School, Lake George.

- March: Postharvest physiological disorders and mineral nutrients, March 24 in Ballston Spa, (March 24) and Newark (March 25)
- August: Cornell University and sustainability, Finger Lakes Sustainable Farming Center Conference (August 19)
- 2008**
- January: ‘Update on harvest and handling of apples -2007 and beyond’, Western New York Tree Fruit Schools, Newark and Orleans.
- February: ‘Harvista - a new tool for harvest management’, Empire State Fruit and Vegetable Expo, Syracuse.
- February: ‘Innovative pre-harvest use of 1-MCP in apple orchards’, Upper Hudson and Champlain Tree-Fruit School, Lake George.
- February: ‘Controlling bitter pit’, Hudson Valley Fruit School, Kingston.
- April: ‘SmartFresh and Harvista updates’, AgroFresh Crunch Clinic, Buffalo.
- June: ‘Postharvest principles’, Cornell Agribusiness program, Ithaca.
- August: ‘Initiatives at Cornell University to research and promote agricultural sustainability’, Creative Agriculture – Approaches to Sustainability on the Farm, Canandaigua.
- 2007**
- January: ‘Growing and selling healthy food: exploring the latest in production and postharvest handling’, Direct Marketing Conference, Owego
- March: ‘Postharvest handling for better quality and food safety’, Community Markets Vendor meeting, Cold Spring.
- March: ‘Controlling storage disorders’, Hudson Valley Fruit Grower School, Kingston.
- March: ‘Postharvest handling of vegetables’, Southeast Vegetable/Onion School, Newburg.
- June: ‘Is Harvista a reality for New York?’, Premier Apple Forum, Syracuse.
- November: ‘Postharvest technologies for direct marketing – reinforcing the message’, Strategic Marketing Workshop, Hyde Park.
- 2006**
- January: ‘Managing bitter pit to improve apple quality’, Western New York Tree Fruit Schools, Newark and Orleans.
- February: ‘SmartFresh for the Hudson Valley’, Hudson Valley Fruit Grower School, Kingston.
- March: ‘Making 1-MCP work for NY’, Upper Hudson and Champlain Tree-Fruit School, Lake George.
- November: ‘Postharvest technologies for direct marketing’, Beyond growing – strategies and technologies that transform your products to meet market demand, Strategic Marketing Workshop, Hyde Park.
- 2005**
- June: The future of 1-MCP for the New York apple industry. Premier Apple Forum, Syracuse.
- 2004**
- February: ‘What we know about 1-MCP’, New York Agriculture and Markets Inspector Training, Verona.
- February: ‘The impact of 1-MCP on future planting decisions’, New York Expo, Rochester.
- March: ‘What we know about 1-MCP’, New York Agriculture and Markets Inspector Training, Verona.
- 2003**
- February: ‘Update on maturity and storage of Honeycrisp’, Western New York Tree Fruit Schools, Newark and Orleans.
- March: ‘Calcium Nutrition and Control of Ca-related Disorders’. In-depth Fruit School Apple Mineral Nutrition, Ballston Spa, and Albion

- 2002** January: '1-MCP: It's Effects On Fruit Quality In And Out Of Storage'. Western New York Tree Fruit Schools, Medina and Newark.
February: '1-MCP effects on fruit quality'. Hudson Valley Fruit School, Kingston;
February: '1-MCP effects on fruit quality' and 'What we have learned about 'Honeycrisp', Upper Hudson and Champlain Tree-Fruit School, Lake George.
- 2001** August: 'Postharvest GAPs for Apples'. Good Agricultural Practices (GAPs) Workshop on Cabbage and Apples for NYS Department of Agriculture and Markets Farm Inspectors, Geneva.
- 2000** June: 'CA storage of McIntosh' and 'Storage of Honeycrisp'. International Dwarf Fruit tree Association Summer tour, Champlain.
- 1999** January: 'Harvesting and handling of sweet cherries'. Annual Meeting of the New York Horticultural Society, Rochester.
February: 'Temperature variation and fruit quality: the carton-pack-out connection'. Upper Hudson and Champlain Tree-Fruit School, Lake George.
February: 'Postharvest Physiology 101' (with A. Rangarajan). New York State Vegetable Conference, Syracuse.
February: 'The handling and storage of Fuji, Gala and other new varieties'. Hudson Valley Commercial Fruit Growers School, Kingston.
- 1998** February: 'Issues in post harvest and controlled atmosphere storage'. Upper Hudson and Champlain Tree-Fruit School, Lake George.
March: 'Optimizing your efforts: post harvest handling of small fruit'. Eastern New York 1998 Commercial Small fruit School, Latham.
- 1997** January: 'Postharvest research and extension needs for New York'. Annual Meeting of the New York Horticultural Society/1997 Western New York Tree Fruit School, Rochester.
February: 'Maintaining quality of Empire apples'. Hudson Valley Fruit School, Kingston.
- 1996** January/February: 'Tackling the wholesale fruit market - Approaching the buyer, Keeping them happy, Postharvest handling'. Member of panel discussions at Berry School # 1, Hort. Show, Rochester, January 11, and Berry School # 2, North American Farmers Direct Marketing Conference, Saratoga Springs, February 22.
February: 'Calcium and fruit quality', presented at the following Fruit Schools Kingston, February 7, Plattsburg, February 8, Ballston Spa, February 9, and two in Western New York, February 23 and 24.
- 1995** January: 'Storage of 'Bosc' pears with and without apples'. New York Pear growers Association, HortShow, Rochester.
January: 'Postharvest handling of strawberries (and how to build a precooler)'. New York Berry Growers Association, Tully.
March: 'Apple disorders: the ins and outs'. CCE Northeast New York Area Fruit Program, Plattsburg, March 22, and Ballston Spa, March 23.
August: 'Postharvest fruit handling'. Hudson Valley Growers' Preharvest Meeting, Kingston.
- 1994** September: 'Maturity and controlled atmosphere recommendations', Champlain, Hudson Valley, Western New York (x2).
November: 'New Zealand experience with Gala, Braeburn, and Fuji apples. Production agriculture inservice education week.

Storage workshops

- 2013** Storage workshop: Ithaca, August. [123]
- 2012** Preharvest workshop: Western New York, August 22 [26]
- 2011** Storage workshop: Ithaca, August. [95]
- 2010** Preharvest workshop: Hudson Valley, Western New York, August.
- 2009** Storage workshop: Ithaca, August.
- 2008** Preharvest workshop: Peru, Hudson Valley, Western New York, September.
- 2007** Storage workshop: Ithaca, August.
Preharvest workshop: Hudson Valley, Western New York, August.
- 2006** Storage workshop: Peru, Hudson Valley, Western New York, September.
- 2005** Storage workshop: Ithaca, Hudson Valley, Western New York, August.
- 2004** Storage workshop: Hudson Valley, Peru, Western New York, August.
- 2003** Storage workshop 2003, Ithaca, July.
- 2002** Storage workshop: Hudson Valley, Peru, Western New York, August.
- 2001** Storage workshop 2001, Ithaca, August.
- 2000** Storage workshop: Hudson Valley, August; Peru, August
- 1999** CA Storage: Meeting the market requirements, Ithaca, August.
- 1998** Storage workshop: Hudson Valley, August; Peru, August; Western New York, September.
- 1997** Harvesting, handling, and storage workshop, Ithaca, August.
- 1996** Storage workshop: Hudson Valley, July; Western New York, August; Peru, September.

University seminars

- 2007** 'Action and uses of 1-MCP on food crops', Department of Food Science, January 30
- 2005** 'The potential of 1-MCP for horticultural industries', Department of Horticulture, Ithaca, September 12.
- 2001** '1-Methylcyclopropene (1-MCP), Smartfresh™, a revolution for storage of apples?' Department of Horticulture, Ithaca, October 18.
- 1997** 'Practices, problems and progress in postharvest storage of apples in the Northeast'. Department of Horticultural Science, Geneva, March 24:.
'A tale of two controlled atmosphere-related disorders'. Department of Fruit and Vegetable Science, Ithaca, April 10.
- 1996** 'Effects of postharvest stress treatments on quality and storage ability of fruit'. Department of Food Science, Ithaca, March 5.
'Opportunities to enhance nutritional status through improved post-harvest methods'. Food Systems for Improved Health Colloquium, Ithaca, December 16.
- 1995** 'Stressing fruit for fun and profit'. Plant Biology, Ithaca, April 14.
- 1994** 'Forward and retro views'. Department of Fruit and Vegetable Science, Ithaca, December 1.

Consultancies - insurance

- 2009** Legal assessment and deposition - Damage on Gala apples (Olympic Fruit Company, LLC v. CH2O; Stocker, Smith, Luciani & Staub, WA)

- Legal assessment and deposition – Damage to D’Anjou pears (Diamond Fruit Growers, Inc. v. Pace International, LLC., and United Agriproducts, INC. (Banducci Woodard Schwartzman PLLC, ID)
- 2004** Legal assessment and deposition continuing from 1999 ‘Gala’ damage claim (Cozen and O’Connor, CA)
- 2003** Assessment of apple and pear losses on arrival in US from Chile (Fox Rothschild O’Brien & Frankel, PA).
- 2001** Legal assessment requiring specialist postharvest knowledge: problem with damaged ‘Granny Smith’ apples in California (CNA Commercial Insurance, NY).
- 1999** Legal assessment requiring specialist postharvest knowledge: problem with damaged ‘Gala’ apples in California.
- 1998** Legal assessment requiring specialist postharvest knowledge: problem with damaged ‘Fuji’ apples in California.
- 1996** Legal assessment requiring specialist postharvest knowledge: problem with damaged ‘Granny Smith’ apples in California.
- 1995** Legal assessment requiring specialist postharvest knowledge: problem with a shipment of bananas from the West Indies to the US.

Overseas consultancies

- 2014** Training Smallholder Apple Farmers in China for Sustainable Production and Domestic Market Access, Shandong and Shaanxi Provinces, China, March 1-14, 2014. Walmart Foundation Project.
- 2013** Training Smallholder Apple Farmers in China for Sustainable Production and Domestic Market Access, Shandong and Shaanxi Provinces, China, March 4-11, 2013. Walmart Foundation Project.
- 2011** Preharvest and Postharvest Needs of the Serbian Apple Industry STTA June 14-17, USAID Serbia Agribusiness Project
- 2010** Postharvest Needs of the Serbian Apple Industry STTA February 15-26, USAID Serbia Agribusiness Project
- 2009** Postharvest Needs of the Serbian Apple Industry with Focus on ULO Storages, STTA February 20-March 6, USAID Serbia Agribusiness Project
- 2002** Agribusiness program in India and visits to industry facilities coordinated by Dr. K. V. Raman, Associate Director, Special Projects.
- 1997** Member of the Postharvest Program Review Committee organized by the New Zealand Foundation for Research, Science and Technology, New Zealand, February.
World Bank-sponsored visit to advise commercial growers on latest developments in handling and storage of horticultural products, Zimbabwe, November.
Member of Cornell team which prepared a document for the Brazilian research organization, EMBRAPA, on the future directions for biotechnological research and make recommendations on investment priorities.
- 1996** Member of FAO consultancy team to formulate priorities for research investment in biotechnology of horticultural crops, India, November.

Administration responsibilities

I was the leader of the Postharvest Physiology Section of the two DSIR divisions operating during that time from 1985 to 1992, and since the formation of HortResearch I was the

Science Manager of the Postharvest Science Group until October 1993. The Postharvest group consisted of five scientists and three technicians when I accepted the role in 1985. By the time I resigned in anticipation of taking up my new position at Cornell the group had expanded to 37 (17 scientists and 20 technicians) with an annual budget of \$3.7m.

I am currently the Associate Director of Cornell Cooperative with responsibility for Agriculture and Food Systems.

Other

1. 1996-1999, and 2002-2003: Admissions Committee for Field of Food Science and Technology.
2. Appointed as Associated member of the Faculty of Graduate Studies at the University of Guelph, Canada (1996-1998).
3. NE103 regional 'Postharvest physiology of fruit' working group: member of the rewriting committee, 1998.
4. NE1018 regional 'Postharvest physiology of fruit' working group: member of the rewriting committee, 2003.
5. Vice-Chairman and Chairman for the Gordon Conference on Postharvest Physiology, 2002 and 2006, respectively.
6. Member of the International Scientific Organizing Committee, VI International Meeting on Biology and Biotechnology of the Plant Hormone Ethylene, Murcia, Spain, April, 2002.
7. Member of the International Scientific Organizing Committee, Postharvest 2004, Verona, Italy.
8. Regularly invited to review promotion packages both nationally and internationally (US, 11; UK, 3; Israel, 6; West Indies, 1; Canada, 5; Oman, 1).
9. Member of the International Scientific Organizing Committee, Southeast Asia Symposium on Quality Management in Postharvest Systems (SEAsia2011), Thailand (3-6 December 2011).
10. RosBREED Advisory Panel member, 2009-2013.
11. Member of the Administrative Council, Northeast SARE: 2010 to present.
12. Member of the International Scientific Organizing Committee, XI International Controlled & Modified Atmosphere Research Conference Trani, Italy (3-7 June 2013).
13. Member of the International Scientific Organizing Committee, 2nd Southeast Asia Symposium on Quality Management in Postharvest Systems (SEAsia2013), Vientiane, Laos, (4-6 December 2013).

PUBLICATIONS

1. Journal Articles

Peer reviewed.

- Dong, X., Huber, D.J., Ramírez-Sánchez, M., Rao, J., Lee, J., Watkins, C.B. Cultivar differences in gaseous 1-methylcyclopropene accumulation in whole and fresh-cut apple fruit. *Postharvest Biol. Technol.* (submitted).
- Jung, S.K., Watkins, C.B. Internal ethylene concentrations in apple fruit at harvest affect sensitivity of fruit to 1-methylcyclopropene. *Postharvest Biol. Technol.* (submitted).
- Leisso, R.S., Buchanan, D.A., Lee, J., Mattheis, J.P., Watkins, C.B., Sater, S., Rudell, D.R. Chilling-related cell death of apple fruit cortical tissue impacts antioxidant, lipid, and phenolic metabolism (*Malus x domestica* Borkh.). *Physiologia Plantarum* (submitted)
135. Amissah, J.G.N., Hotchkiss, J.H., Watkins, C.B. 2013. Nitric oxide inhibition of alcohol dehydrogenase in fresh-cut apples (*Malus domestica* Borkh). *J. Agric. Food Chem.* 61: 11076-11081 DOI: 10.1021/jf4021224
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