CURRICULUM VITAE

# MICHAEL EDWARD WISNIEWSKI

USDA-ARS, Appalachian Fruit Research Station
45 Wiltshire Road, Kearneysville, WV 25430

PHONE: (304) 725-3451 ext. 320 (Office)
FAX: (304) 728-2340
E-MAIL: michael.wisniewski@ars.usda.gov

## EDUCATION

1983 Doctor of Philosophy Degree in Botany and Plant Pathology
University of New Hampshire, Durham, N. H.
1980 Master of Science Degree in Botany and Plant Pathology
University of New Hampshire, Durham, N. H.
1978 Bachelor of Science Degree in Plant Science
Cornell University, Ithaca, New York

## PROFESSIONAL EXPERIENCE

1985 - Present Research Plant Physiologist, USDA, ARS, Appalachian Fruit Research Station, Kearneysville, West Virginia
Current Status: **Supervisory Lead Scientist, GS-0435-15/10**

### Formal Management Training

1. Special Emphasis Program Manager Training (Hispanic Program)
November 17 – 19, 1986
2. EEO for Advisory Committee Members
December 17, 1986
3. Fundamentals of EEO for Managers
January 28, 1987
4. Introduction to Supervision
November 2 – 6, 1987
5. Managing Multiple Demands
March 30, 1989
6. How to Supervise People
July 25, 1990
7. Recognizing and Preventing Sexual Harassment
January 19, 1995
8. HIV\AIDS in the Workplace

March 30, 1995

9. Management Conflict Training
March 24, 1999

10. Critical Success Strategies for Leaders in the Public Sector
April 3 – 5, 2006

**HONORS AND AWARDS**

1987 ARS Superior Performance Award
1988 ARS Superior Performance Award
1989 **ARS Outstanding Performance Award**
1989 First Prize - Polaroid International Instant Photomicography Competition - Electron Micrography
**1989 North Atlantic Area - ARS-EEO Award**
1990 ARS Superior Performance Award
1991 ARS Superior Performance Award
1991 North Atlantic Area - ARS - Outstanding Paper of the Year
**1992 ARS - North Atlantic Area - Early Career Scientist of the Year Award $2,500.00 Cash Award, $10,000.00 for research.**
**1992 ARS Fellowship - provided funds for a six month sabbatical at Christian Albrecht University, Kiel, Germany**
1992 North Atlantic Area - ARS - Outstanding Paper of the Year Award
1993 ARS Superior Performance Award
1994 ARS Superior Performance Award
1995 ARS Superior Performance Award
**1996 Federal Lab Consortium Technology Transfer Award**
1996 ARS Superior Performance Award
**1996 ARS Technology Transfer Award**
1997 ARS Superior Performance Award
**1998 Fellow- American Society of Horticultural Science.**
**2000 Outstanding Publication of the Year Award - American Society of Horticultural Science**
2001 ARS Superior Performance Award
2002 Two Special Act Awards
2002 ARS Superior Performance Award
2003 **ARS Outstanding Performance Award**
**2003 ISHS Award for Contributions to the Organization of the International Horticultural Congress, Toronto, Canada**
2004 ARS Extra Effort Award
2004 ARS Superior Performance Award
2005 ARS Superior Performance Award
2006 ARS Superior Performance Award
2006 ARS Extra Effort Award
2009 **USDA-ARS-NAA Senior Scientist of the Year**

2011 **Amer. Soc. Hort. Science 2011 Outstanding Researcher Award**
**2016 Lifetime Honorary Member of the Canadian Phytopathological Society**
**2017 Judith and Martin Bukovac Distinguished Lectureship – Michigan State University**

## OFFICES AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:

| | |
|---|---|
| 1985-1995 | Cooperator, Western Region Project (W-130): Freeze Damage and Protection of Deciduous Fruit and Nut Crops |
| 1991 | Chair, ASHS Environmental Stress Physiology Working Group |
| 1992-1995 | ASHS Award Selection Committee for Outstanding Researcher. |
| **1997-2000** | **Associate Editor: Journal American Society of Horticultural Science: Stress** |
| 1998 - 2001 | Chair of the Deciduous Tree Fruit Grant Panel. United States - Israel Binational Agricultural Research Development Fund. (BARD) |
| 2001 -2004 | **Member of Technical Advisory Committee of BARD.** |
| 2001- | ASHS Fellows Screening Committee |
| 2001- | ASHS Nominations Committee |
| 2002 | ISHS Symposium Committee for Environmental Stress for Int. Hort. Congress, Toronto, Canada. |
| 2004- | Multinational Agricultural Research and Development Fund (MARD) Advisory Committee Member |
| 2006 | Member of the Scientific Committee – Proteolux – International Symposium on Proteomics, Luxembourg. October, 2007 |
| 2006-2007 | Member of the Scientific Committee – 8th International Plant Cold Hardiness Symposium, Saskatoon, Canada – July, 2007. |
| 2006 | US-AID-MERC – Review Panel |
| **2008 -2015** | **Associate Editor – Plant Molecular Biology Reporter** |
| 2009 - 2012 | Chair, BARD Grant Review Panel – Crop Production |
| **2010-2014** | **Co-Chair of the ISHS Working Group: Alternative Methods of Postharvest Disease Management** |
| **2010 -** | **Scientific Committee for the 9th Int. Plant Cold Hardiness Symposium, Luxembourg** |
| **2010 - 2015** | CoChair of ISHS Working Group – "Alternative Methods of Postharvest Disease Management." Organized 3 International Meetings over 6 year period. |
| **2011 – 2014** | **Editorial Board of Environmental and Experimental Botany** |
| **2011** | **Advisor and Consultant – CORPOICA, Bogota, Colombia. Review of projects on bioprospecting for agriculture.** |
| **2015 – Present** | **Associate Editor – Frontiers of Plant Science.** |
| **2016** | **Guest Editor – Special Issue of Biological Control – Metagenomics and Biological Control.** |

## PATENTS

1. Apparatus and Method for Applying Material to Agricultural Commodities. C. L. Wilson and M. E. Wisniewski. Patent #5,228,627, Issued July 20, 1993.

2. Biological Control of Diseases of Harvested Agricultural Commodities Using Strains of the Yeast *Candida oleophila* (Saito and Ota) Uden and Buckley, C. L. Wilson and M. E. Wisniewski. No. 5,425,941 1995.

3. Method for Enhanced Supercooling of Plants to Provide Frost Protection. Sekutowski, Glenn, M.; Purterka, G. and M. Wisniewski.(U.S. Patent No. 6,235,683 May 22, 2001).

4. A Method for reducing freeze and chill damage in Plants. Wisniewski, M., Glenn, M.D., Puterka, G. and Sekutowski, E. (No. 7,516,573).

## LIST OF PUBLICATIONS

### BOOK CHAPTERS

Wisniewski, M., G. Davis, and R. Arora. **1993** - The role of pit membrane structure in deep supercooling of xylem parenchyma. In: Recent Advances in Plant Cold Hardiness, Paul Li (ed), CRC Press, Boca Raton, FL pp. 215-229.

Wisniewski, M., R. Arora. **1992**. Adaptation and response of fruit trees to freezing temperatures. In: Cytology and Histology of Fruit Tree Disorders. A. R. Biggs (ed), CRC Press, Boca Raton, FL pp. 299-320.

Wisniewski, M. **1995**. The role of cell wall structure in deep supercooling of woody plants. In: Ice Nucleation in Biological Systems and Their Applications. R. Lee, G. Warren, and L. Gusta (eds). American Phytopathological Society, St. Paul, MN.

Wisniewski, M., and C. Wilson. **1994**. Biological control strategies: An overview. In: Postharvest Biological Control: Theory and Practice. C.L. Wilson and M. E. Wisniewski(eds), CRC Press, Boca Raton, FL.

Pusey, P. L., C. L. Wilson, and M. E. Wisniewski. **1994**. Management of Postharvest Diseases of Fruits and Vegetables: Strategies to Replace Vanishing Fungicides. In: Pesticide Plant Pathogen Interactions in Crop Production: Beneficial and Deleterious Effects. CRC Press, Boca Raton, FL.

Wilson, C.L. and Wisniewski, M. E. **1992**. Future alternatives to synthetic fungicides for the control of postharvest diseases. In: Biological Control of Plant Diseases. E.S. Tjamos (Ed.). Plenum Press, NY. pp. 133-138.

Wilson, C. L. And M. E. Wisniewski. **1994**. (Eds.) Biological Control of Postharvest Diseases: Theory and Practice CRC Press, Boca Raton, FL.

Wisniewski, M. E., L. H. Fuchigami, J. J. Sauter, A. Zhen. **1996**. Effects of sublethal stress on bud dormancy in woody plants. pp. 201-212. In: GA Lang (ed), Plant dormancy: physiology, biochemistry, and molecular biology. CAB International, Oxon, UK.

Wisniewski, M. E., Wolf, T., and L. H. Fuchigami. **1997**. Biophysical and Biochemical Aspects of Cold Hardiness in Woody Plants. In: Proceedings of the 4th International Symposium on Cool Climate Viticulture and Enology.

Droby, S., E. Chalutz, M. Wisniewski, and C. Wilson. **1996**. Host response to introduction of antagonistic yeasts used for control of postharvest decay. In: Microbiology of Aerial Plant Surfaces. CE Morris, P. Nicot, C. Nguyen-the eds. Pp. 73-89. Phytopathology Press, St. Paul MN.

Wisniewski, M. **1997**. The use of infrared video thermography to study freezing in plants. In: Plant Cold Hardiness. Eds. P. Li and T. Chen. Plenum Press.

Wisniewski, M. and M. Fuller. **1999**. Ice nucleation and deep supercooling: New Insights Using Infrared Thermography. In: Cold-Adapted Organisms: Fundamentals and Applications. Margesin, R. and F. Schinner. Eds., Landes BioScience.

Wisniewski, M. and R. Arora. **2000**. Seasonally-regulated proteins in peach. What are they and What do they do? In: Dormancy in Plants. Viemont, J.D. and J. Crabbe, eds. CABI Publishing.

Wisniewski, M. and R. Arora. **2000.** Structural and biochemical aspects of cold hardiness in woody plants. In: Molecular Biology of Woody Plants. Mohan Jain, S. and S. Minocha. Eds. Kluwer Academic Publishers.

El Ghaouth, A., Droby, S.,Wilson, C., Wisniewski, M., and Smilanick, J., and L. Korsten. **2001**. Biological Control of Posharvest Diseases of Citrus. In: Biological Control of Major Crop Plant Diseases, S. Gnanamanickmam. Marcell Dekkar, NY (In Press).

Droby, S., Wilson, C., Wisniewski, M. and A. El Ghaouth. **2000**. Biologically Based Technology of the Control of Postharvest Diseases of Fruits and Vegetables. In: Microbial Food Contamination, C. Wilson and S. Droby, eds. CRC Press. Boca Raton. FL

Artlip, T. and M. Wisniewski. **2001**. Induction of proteins in response to biotic and abiotic stresses. In: Handbook of Plant and Crop Physiology, 2nd ed. M. Pessarakli, ed. Marcel Dekker, Inc. New York.

Wisniewski, M.E., C.L. Wilson, A. El Ghaouth and S. Droby. **2001**. Increasing the ability of the

biocontrol product, Aspire, to control postharvest diseases of apple and peach with the use of additives. Proc. Biocontrol Agents: Mode of Action and Interaction with Other Means of Control. eds. Y. Elad, S. Freeman and E. Monte. IOBC WPRS Bull. 24: 157-160.

Sutinen, M-J., Arora, R., Wisniewski, M., Ashworth, E., Strimbeck, R. and J. Palta. **2001**. Mechanisms of frost survival and freeze-damage in nature. Pp. 89-120. In: Conifer Cold Hardiness, eds. Bigras, F.J. and S.J. Colombo. Kluwer Academic Pub. London. 596 pp.

Wisniewski, M., Fuller, M., Glenn, D. M., Gusta, L.V., Duman, J., and Marilyn Griffith. **2002**. Extrinsic ice nucleation in plants: What are the factors involved and can they be manipulated. pp. 211-222. IN: Plant Cold Hardiness: Gene Regulation and Genetic Engineering. Eds. P.H. Li and E. T. Palva. Kluwer Acemic, NY., NY.

Wisniewski, M., Fuller, M., Palta, J., Carter, J., and R. Arora. **2004**. Ice nucleation, propagation, and deep supercooling in woody plants. Pp. 5-16. In: Adaptations and Responses of Woody Plants to Environmental Stress. Haworth Press, Inc. Binghamton, NY. 311pp.

Trischuck, R. Gusta, L.V. and M. Wisniewski. **(2006)**. Freezing Stress: Systems Biology To Study Cold Tolerance. In: Physiology and Molecular Biology of Stress Tolerance in Plants. Ed. K.V.M. Rao. Springer NL.

Wisniewski, M., Wilson, C., Droby, S., Chalutz, E., El Ghaouth, A., and C. Stevens. **(2007).** Postharvest Biocontrol: The Discovery of New Concepts and Applications. In: Biological Control: International Case Studies. Eds. C. Vincent, M. Goettal, G. Lazarovits. CABI Publishing UK.

Wisniewski, M., Gusta, L.V., Fuller, M. and D. Karlson. (**2009)** – Ice nucleation, propagation, and deep supercooling: The lost tribes of freezing studies. Pp. 1-11. In. Plant Cold Hardiness: From the Laboratory to the Field. Eds. Gusta, L.V., Wisniewski, M., and Tanino, K. CABI, Oxford, England.

Gusta, L.V.,Wisniewski, M., and Trischuck, R. **(2009)**. Patterns of freezing in plants: The influence of environment and experimental procedures. Pp. 214-225. In. Plant Cold Hardiness: From the Laboratory to the Field. Eds. Gusta, L.V., Wisniewski, M., and Tanino, K. CABI, Oxford, England.

Bassett, C.L, and M. Wisniewski. **(2009)**. Global patterns of cold-responsive genes in fruit trees. In. Plant Cold Hardiness. Pp. 72-79. In: From the Laboratory to the Field. Eds. Gusta, L.V., Wisniewski, M., and Tanino, K. CABI, Oxford, England.

Droby,S., Wisniewski, M., and Benkeblia, N. **(2011).** Postharvest pathology and strategies for decay control. In: Postharvest Biology and Technology of Tropical and Subtropical Fruits. Ed. Yahia, Elhadi, Wood head Publishing, Cambridge, MA. 500 Pp.

Wisniewski, M. and Droby, S. (**2012).** Biopreservation of food and feed by postharvest biocontrol with microorganisms. Pp. 57-66. In: Sundh, I., Wilcks, A., and Goettal, M.S. (eds.) Beneficial Microorganisms in Agriculture, Food, and the Environment. CABI Oxford 343 pp.

Wisniewski, M. and S. Droby. **(2011)** Biological Control of Postharvest Diseases: Challenges and Opportunities. Acta Horticulturae. 905. 318 pp.

Gusta, L.V. and Wisniewski, M. **(2012)**. Frost Tolerance in Plants. Pp. 132-147. In: Plant Stress Physiology. Shabala, S. (ed.). CABI, International, Oxford, England 318 pp.

Wisniewski, M., Gusta, L.V., and Willick, I. (2016). Freeze Tolerance and Avoidance in Plants. Plant Stress Physiology 2nd Edition. Shabala, S. (ed.). CABI, International, Oxford, England. (In Press).

Droby, S., Wisniewski, M., and Norelli. J. (2017). Biological Approaches for Managing Postharvest Decay. In. Postharvest Pathology of Fruits and Vegetables, Prusky, D. and Adaskaveg, J.E. eds. APS Press (In press).

## PEER-REVIEWED JOURNAL ARTICLES

### *Plant Pathology*

Wisniewski, M., Bogle, A. L., and C. Wilson. **1984**. Histopathology of canker development on peach trees following inoculation with Cytospora leucostoma. **Can. J. Bot. 62: 2804-2813.**

Wisniewski, M., Shortle, W., Wilson, C., and A. L. Bogle. **1984**. Interaction between Cytospora and host-phenolic compounds in dormant peach trees. **J. Amer. Soc. Hort. Sci. 109: 563-566.**

Wisniewski, M. And Wilson, C. **1984**. Host response to Cytospora canker and the possible role of carbohydrate reserves in the peach decline syndrome. **Proc. Ann. Workshop on Peach Decline. USDA Pub. #342.**

Wisniewski, M., Wilson, C., and A. L. Bogle. **1985**. Seasonal variation in cambial electrical resistance and its relation to growth in two cultivars of peach. **Can. J. Plant Sci. 65: 345-350.**

Wisniewski, M., Wilson, C., and Hershberger, W. **1989**. Characterization of inhibition of Rhizopus stolonifer germination and growth by Enterobacter cloacae. **Can. J. Bot.67: 2317-2323.**

Wisniewski, M., Wilson, C., Chalutz, E., and Hershberger, W. **1988**. Biological control of postharvest diseases of fruit: Inhibition of Botrytis rot on apple by an antagonistic yeast. **Proc. Electr. Microsc. Soc. Am. 46: 290-291.**

Wisniewski, M., Biles, C., and Droby, S. **1991.** The use of the yeast Pichia guilliermondii as a biocontrol agent: Characterization of attachment to Botrytis cinerea. **Proc. Binational Ag. Res. Dev. Fund (BARD) Workshop on Biological Control of Postharvest Diseases of Fruits and Vegetables. Sept. 1990.**

Wisniewski, M., C. Biles, S. Droby, R. McLaughlin, C. Wilson, and E. Chalutz. **1991.** Mode of action of the postharvest yeast, Pichia guilliermondii. I. Characterization of attachment to Botrytis cinerea. **Physiol. Molecular Plant Pathol. 39: 345-258.**

Wisniewski, M. And C. Wilson. **1991.** Biological control of postharvest diseases of fruits and vegetables: Recent advances. **HortScience 27: 94-98.**

McLaughlin, R. J., Wisniewski, M. E., Wilson, C. I., and Chalutz, E. **1990**. Effect of inoculum concentration and salt solutions on biological control of postharvest diseases of apples with Candida sp. **Phytopathology 80: 456-461.**

Droby, S., Chalutz, E., Wilson, C. L., and Wisniewski, M. **1989.** Characterization of the biocontrol activity of Debaryomyces hansenii in the control of Penicillium digitatum on grapefruit. **Can. J. Microbio. 35: 794-800.**

Wilson, C. L. And Wisniewski, M. **1989**. Biological control of postharvest diseases of fruits and vegetables: An emerging technology. **Annu. Rev. Phytopath. 27: 425-41.**

Wilson, C., Wisniewski, M., Biles, C., McLaughlin, R., Chalutz, E., and Droby, S. **1991**. Biological control of postharvest diseases of fruits and vegetables - Alternatives to synthetic fungicides. **Crop Protection 10: 172-177.**

Chalutz, E., S. Droby, C. Wilson, and M. E. Wisniewski. **1992**. UV-induced resistance to postharvest diseases of citrus fruit. **J. Photochem Photobiol. B: Biol, 15: 367-374.**

Droby, S., Hofstein, R. Wilson, C. L., Wisniewski, M., Fridlender, B., Cohen, L., Weiss, B., Daus, A., Timar, D., and E. Chalutz. **1993**. Pilot testing of Pichia guilliermondi. A biocontrol agent of postharvest diseases of citrus fruit. **Biological Control 3: 47-52.**

Wilson, C. L., Wisniewski, M., Droby, S., and E. Chalutz. **1993**. A selection strategy for microbial antagonists to control postharvest diseases of fruits and vegetables. **Scientia Horticulturae 53: 183-189.**

Droby, S. Chalutz, E. Horev, B. Cohen, L., Gaba, V. Wilson, C. L., and M. Wisniewski. **1993**.

Factors affecting UV-induced resistance in grapefruit against the green mold decay caused by Penicillium digitatum. **Plant Pathology 42: 418-424.**

El Ghaouth, A., Wilson, C. L., and M. E. Wisniewski. **1995**. Sugar analogs as potential fungicides for postharvest pathogens. **Plant Dis. 79: 254-258.**

Wisniewski, M., Droby, S. Chalutz, E., and Y. Eilam. **1995**. Effects of Ca and Mg on Botrytis cinerea and Penicillium expansum in vitro and on the biocontrol activity of Candida oleophila. **Plant Pathology. 44: 1016-1024.**

Wilson, C. L., M. Wisniewski, and B. Upchurch. **1995**. An over-the-row micronized-dust applicator for fruit trees. **HortTechnology. 5: 309-313.**

Stevens, C., C. L. Wilson, J. Y. Lu, V. A. Khan, E. Chalutz, S. Droby, M. K. Kabwe, Z. Haung, O. Adeyeye, L. P. Pusey, M. E. Wisniewski, M. West. **1996**. Plant hormesis induced by ultraviolet light-C for controlling postharvest diseases of tree fruits. **Crop Protection. 15: 129-134.**

Droby, S., M. E. Wisniewski, L. Cohen, B. Weiss, D. Touitou, Y. Eilam, and E. Chalutz **1997.** Influence of CaC12 on Penicillium digitatum, grapefruit peel tissue, and biocontrol activity of *Pichia guilliermondii*. **Phytopathology. 87:310-315.**

Wilson, C.L., M. Wisniewski, A. El-Ghaouth, S. Droby, and E. Chalutz. **1996. Feature Article:** Commercialization of antagonistic yeasts for the biological control of fruits and vegetables. **SIM (Society for Industrial Microbiology) News: 46. 237-242**.

Wilson, C. L., Solar, J. M., El Ghaouth, A., and M. Wisniewski. **1997.** Rapid evaluation of plant extracts and essential oils for antifungal activity against *Botrytis cinerea*. **Plant Dis. 81:204-210.**

El-Ghaouth, A., Wilson, C.L., and M. Wisniewski. **1997.** Antifungal activity of 2-deoxy-D-glucose on Botrytis cinerea, Penicillim expansum, and Rhizopus stolonifer: Ultrastructural and cytochemical effects. **Phytopathology 87:772-779.**

El Ghaouth, A., Wilson, C., and M. Wisniewski. **1998**. Ultrastructural and cytochemical aspects of the biological control of *Botrytis cinerea* by *Candida saitoana* in apple fruit. **Phytopathology 88: 282-291.**

Wilson, C., El Ghaouth, A., and M. Wisniewski. **1999**. Prospecting in Nature's storehouse for biopesticides. **Fitopatologia 17: 49-53**.

Ippolito, A., El Ghaouth, A., Wilson, C. and M. Wisniewski. **2000.** Control of postharvest decay of apple fruit by *Aureobasidium pullalans* and induction of defense responses. Posharvest **Biology and Technology 19: 265 -272.**

El Ghaouth, A., Smilanick, J.L., Wisniewski, M. and C. Wilson. **2000.** Improved control of apple and citrus fruit decay with a combination *Candida saitoana* and 2-deoxy-D-glucos. **Plant Dis. 84: 249-253.**

El Ghaouth, A., Smilanick, J., Brown, E.G., Ippolito, A., Wisniewski, M., and C.L. Wilson. **2000**. Application of Candida saitoana and glycolchitosan for the control of postharvest diseases of apple and citrus fruit under semi-commercial conditions. **Plant Dis. 84: 243-248.**

Wisniewski, M., Wilson, C. El Ghaouth, A. and S. Droby. **2001**. Non-chemical approaches to postharvest disease control. **Acta Hort. 553: 407- 412.**

Droby , S., Cohen, L., Wiess, B., Daus, A. and M. Wisniewski. **2001**. Microbial control of postharvest diseases of fruits and vegetables - Current status and future outlook. **Acta Hort. 553: 371 -376.**

Wisniewski, M., Wilson, C., El Ghaouth, A., and S. Droby. **2001**. Increasing the ability of the biocontrol product, Aspire, to control postharvest diseases of apple and peach with the use of additives. Proc. Biocontrol Agents: Mode of Action and Interaction with Other Means of Control. eds. Y. Elad, S. Freeman and E. Monte. **IOBC WPRS Bull. 24: 157-160.**

El Ghaouth, Wilson, C., and M. Wisniewski. **2001**. Evaluation of two biocontrol products, Bio-Coat and Biocure, for the control of postharvest diseases of pome and citrus fruit. **IOBC WPRS Bull. 24: 161-165.**

El Ghaouth, Wilson, C., and M. Wisniewski. **2001**. Induction of systemic resistance in apple by the yeast antagonist, *Candida saitoana*. **IOBC WPRS Bull. 24: 309-312**

Yehuda, H., Droby, S., M.E. Wisniewski, and M. Goldway. **2002**. Cloning and analysis of *CoEXG1*: A secreted 1,3 - B - glucanase of the biocontrol agent, *Candida oleophila.* .**Yeast 19: 1171-1182.**

Vero, S., Mondino, P., Burgueno, J., Soubes, M. Wisniewski, M. **2002**. Characterization of biocontrol activity of two yeast strains from Uruguay against blue mold of apple. **Postharvest Biol. and Tech. 26: 91-98.**

Yehuda, H., S. Droby, M. Bar-Shimon, M. Wisniewski, and M. Goldway. **2003**.The effect of under-and overexpressed CoEXG1-encoded exoglucanase secreted by Candida oleophila on the biocontrol of Penicillium digitatum. **Yeast 20: 771-780.**

Yehuda, H., S.Droby, M.E. Wisniewski and M. Goldway. **2001.** A transformation system for the biocontrol yeast, *Candida oleophila,* based on hygromycin B resistance. **Curr. Gen. 40: 282-287.**

Wisniewski, M.E., S. Droby, A. El Ghaouth and C.L. Wilson. **2003**. Influence of food additives on the control of postharvest rots of apple and peach and efficacy of the yeast-based biocontrol product Aspire. **Postharvest Biol. Tech. 27: 127-135.**

Droby, S. Wisniewski, M., El Ghaouth, A., Wilson C. **2003**. Biological control of postharvest diseases of fruits and vegetables: current achievements and future challenges. **Acta Hort. 628: 703-713.**

Wisniewski, M., Bassett, C.L., Artlip, T., Webb, R.P., Janisiewicz, W., Norelli, J.L., Goldway, M., and S. Droby. **2003**. Characterization of a defensin in bark and furit tissues of peach and antimicrobial activity of a recombinant defensin in the yeast, Pichia pastoris. **Physiol. Plant. 119: 563-572.**

Bar-Shimon, M., Yehuda, H., Cohen, L., Weis, B., Kobeshnikov, A., Daus, A., Goldway, M., Wisniewski, M., Droby, S. **2004.** Characterization of extracellular lytic enzymes produced by the yeast biocontrol agent *Candida oleophila*. **Curr. Genet. 45: 140-148.**

Wisniewski, M., Bassett, C., Artlip, T., Janisiewicz, W., Norelli, J., Droby, S., and Goldway, M. **2005.** Overexpression of a peach defensin gene can enhance the activity of postharvest biocontrol agents. **Acta Hort. 682: 1999 – 2005.**

Stevens, C., Kahn, VA., Wilson, D., Lu, J., Pusey, L., Bassett, C., Emmanuel, C., Igwegve, K., Wisniewski, M., Chalutz, E., Droby, S., El Ghaouth, A. **2006.** Photobiological effects of radiation hormesis on the control of postharvest decay and delayed senescence and ripening of postharvest crops. **Recent Res. Devel. Bioener. 4: 43-80.**

Janisiewicz, W., Bastos Pereira, I., Almedia, M.S., Roberts, D.P., Wisniewski, M., and E. Kurtenbach. **(2008).** Improved biocontrol of fruit decay fungi with *Pichia pastoris* recombinant strains expressing Psd1 antifungal peptide. **Postharvest Biol. Technol. 47:218-225.**

Macarisin, D., Cohen, L., Eick, A., Rafael, G., Belausov, E., Wisniewski, M., Droby, S. (**2007**). Suppression of the defense-related oxidative burst by *Penicillium digitatum* during infection of citrus fruit. **Phytopathology 97: 1491-1500.**

Droby, S., Eick, A., Macarisin, D., Cohen, L., Rafael, G., Stange, R., McColum, G., Dudai, N., Nasser, A., Wisniewski, M., and R. Shapira. **(2008)** Role of citrus volatiles in host recognition, germination and growth of Penicillium digitatum and Penicilium italicum. **Postharvest Biol. and Technol. 49: 386-396.**

Vero, S. Garmendia, G., Gonzalez, M., Garat M., and Wisniewski, M. **2009**. Aureobasidium pullulans as a biocontrol agent of postharvest pathogens of apples in Uruguay. **Biocntrol Sci. and Technol. 1-17.**

Droby, S., Wisniewski, M., Macarisin, M., Wilson, C. **(2009).** Twenty years of postharvest biocontrol research: Is it time for a new paradigm? **Postharvest Biol. and Technol. 52: 137-145.**

Macarisin, D., Droby, S., Bauchan, G., Wisniewski, M. **(2010)**. Superoxide anion and hydrogen peroxide in the yest antagonist-fruit interaction: a new role for reactive oxygen species in postharvest biocontrol? **Postharvest Biol. and Tech. 58: 194-202**.

Hershkovitz, V., Ben-Dayan, C., Raphael, G., Pasmanik-Chor, M., Liu, J., Belausov, E. Aly, R., Wisniewski, M., and S. Droby. (2012). Global changes in gene expression of grapefruit peel tissue in response to the yeast biocontrol agent *Meschnikowia fructicola*. **Molec. Plant Pathol. 13: 338-349.**

Liu, J., Wisniewski, M., Droby, S., Tian, S., Hershkovitz, V., Tworkoski, T. (2011). Effect of heat shock treatment on stress tolerance and biocontrol efficacy of *Metshnikowia fructicola*. **FEMS Microbiol. Ecology 76: 145-155.**

Liu, J., Wisniewski, M., Droby, S., Vero, S, Tian, S, Hershkovitz, V. 2011. Glycine betaine improces oxidative stress tolerance and biocontrol efficacy of the antagonistic yeast *Cystofilobasidium infirmominiatum.* **International J. Food Microbiol. 146: 76-83.**

Wilson, C.L., Wisniewski, M. Droby, S. and E. Chalutz. **2011**. Historical perspective on biological control of postharvest diseases – past, present, and future. In. Biological Control of Postharvest Diseases: Challenges and Opportunities. Wisniewski, M. and S. Droby. (eds). **Acta Hort. 905: 23-30**.

Fiori, S., Scherm, B., Migheli, Q., Budroni, M., Farrell, R. and M. Wisniewski. **2011**. Diofferential gene expression during the pathogenic interaction between *Pichia fermentans* and peach fruit. In. Biological Control of Postharvest Diseases: Challenges and Opportunities. Wisniewski, M. and S. Droby. (eds). **Acta Hort. 905:103-106.**

Macarisin, D., Bauchan, G. Droby, S. and M. Wisniewski. **2011**. Novel role for reactive oxygen species (ROS) in host-antagonistic yeast-pathogen interactions in postharvest biocontrol systems. In. Biological Control of Postharvest Diseases: Challenges and Opportunities. Wisniewski, M. and S. Droby. (eds). **Acta Hort. 905:113-122.**

Vero, S., Garmendia, G., Garat, M., de Aurrecoechea, I., and M. Wisniewski. **2011. Cystofilobasidium infirmominiatum** as a biocontrol agent of postharvest diseases on apples and citurs. In. Biological Control of Postharvest Diseases: Challenges and Opportunities. Wisniewski, M. and S. Droby. (eds). **Acta Hort. 905:169-180.**

Fiori, S., Scherm, B., Liu, J., Farrell, R., Mannazzu, I., Budroni, M. Maserti, B., Wisniewski, M., and Q. Migheli. **2012**. Identification of differentially expressed genes associated with changes in the morphology of Pichia fermentans on apple and peach fruit. **FEMS Yeast Res. 12: 785-795.**

Liu, J., Sui, Y., Wisniewski, M., Droby, S., Tian, S. Norelli, J. and V. Hershkovitz. **2012**. Effect of heat treatment on inhibition of Monilinia fructicola and induction of disease resistance in peach fruit. **Postharvest Biol. and Tech. 65: 61-68**.

Liu, J., Wisniewski, M., Droby, S., Norelli, J., Hershkovitz, V., Tian, S., and R. Farrell. **2012**. Increase in antioxidant gene transcripts, stress tolerance and biocontrol efficacy of Candida oleophila following sublethal oxidative stress exposure. **FEMS Microbiol Ecol. 80: 578-590.**

Sui, Y., Liu, J., Wisniewski, M., Droby, S., Norelli, J. and V. Hershkovitz. **2012.** Pretreatment of the yeast antagonist, *Candida oleophila*, with glycine betaine increases oxidative stress tolerance in the microenvironment of apple wounds. **Int. J. Food Microbiol. 157: 45-51.**

Liu, J., Macarisin, D., Wisniewski, M., Sui, Y., Droby, S., Norelli, J., and V. Hershkovitz. **2012**. Production of hydrogen peroxide and expression of ROS-generating genes in peach flower petals in response to host and non-host fungal pathogens. **Plant Pathology: 62: 820-828.**

Vero, S., Garmendia, G., Gonzalez, M.B., Bentancur, O. and M. Wisniewski. **2012**. Evaluation of yeasts obtained from Antarctic soil samples as biocontrol agents for the management of postharvest diseases of apple (*Malus x domestica*). **FEMS Yeast Res**. **13: 189-199.**

Hershkovitz, V., Sela, N. Taha-Salaime, L., Liu, J., Rafael, G., Kessler, C., Aly, R., Levy, **Wisniewski, M.,** Droby, S. **2013**. *De novo* assembly and characterization of the transcriptome of *Meschnikowia fructicola* reveals differences in gene express flowing interaction with *Penicillium digitatum* and grapefruit peel. **BMC Genomics 14: 168**.

Sangorrin, M.P., Lopes, C.A., Vero, S., Wisniewski, M**. 2013.** Cold-adapted yeasts as biocontrol agents. Pp. 441-464. In: Cold-Adapted Yeasts: Biodiversity, Adaptation Strategies and Biotechnological Significance. Eds. P. Buzzini and R. Margesin. Springer-Verlag.

Liu, J., Sui, Y., Wisniewski, M., Droby, S. Liu, Y.**2013.** Review: Utilization of antagonistic yeasts to manage postharvest fungal diseases of fruit**. Int. J. Food Microbiol. 167:153-160.**

Liu, J., Wisniewski, M., Artlip, T., Sui, Y., Droby, S., Norelli, J. **2013.** The potential role of PR-8 gene of apple fruit in the mode of action of the yeast antagonist, *Candida oleophila*, in postharvest biocontrol of *Botrytis cinerea*. **Postharvest Biology and Technology 85: 203-209.**

Zhao, W., Wisniewski, M., Wang, W. Liu, J., Liu, Y. **2013.**Heat-induced oxidative injury contributes to inhibition of *Botrytis cinerea* spore germination and growth. **Curr. Microbiology DOI 10.1007/s11274-013-1513-z**.

Villanova, L., Wisniewski, M., Norelli, J., Vinas, I., Torres, R., Usall, J., Phillips, J., Droby, S., and Teixido, N. **2014.** Transcriptomic profiling of apple in response to inoculation with a pathogen (*Penicillium expansum*) and a non-pathogen (*Penicillium digitatum*)**. Plant Molecular Biology Reporter 32: 566-583.**

Spadoni, A., Guidarelli, M., Phillips, J., Mari, M. and Wisniewski, M. **2015.** Transcriptional profiling of apple fruit in response to heat treatment: Involvement of a defense response during *Penicillium expansum* infection. **Postharvest Biol. Technol. 101: 37-48**.

Buron-Moles, G., Winsiewski, M., Vinas, I., Teixido, N., Usall, J., Droby, S. and Torres, R. **2015**. Characterizing the proteome and oxi-proteome of apple in response to a host (*Penicillium expansum*) and a non-host (*Penicillium digitatum)* pathogen. **J. Proteomics 114: 136 -151.**

Ballester, A-R. Marcet-Houben, M., Levin, E., Sela, N., Selma-Lazaro, C., Carmona, L., Wisniewski, M., Droby, S., Gonzalez-Candelas, L., and Gabaldon, T. **2015.** Genome, transcriptome, and functional analyses of *Penicillium expansum* provide new insights into secondary metabolism and pathogenicity. **Molecular Plant-Microbe Interactions (MPMI): 28: 232-248.**

Sui, Y. Wisniewski, M., Droby, S., Liu, J. **2015.** Responses of yeast biocontrol agents to environmental stress. **Applied and Environmental Microbiol. 81: 2968 – 2975.**

Chen, H., Cheng, Z., Wisniewski, M., Liu, Y., Liu, J. **2015.** Ecofriendly hot water treatment reduces postharvest decay and elicits defense response in kiwifruit. **Environmental Science and Pollution Research. 22: 5037 – 5045.**

Abdelfattah, A., Wisniewski, M., Nicosa, M., Cacciola, O., and Schena L. **2016**. Metagenomic analysis of fungal diversity on strawberry plants and the effect of management practices on the fungal community structure of aerial organs. **PLos1:(DOI:10.1371/journal.pone.0160470)**

Wisniewski, M., Droby, S, Norelli, J., Liu, J., and Schena, L. **2016**. Alternative management technologies for postharvest disease control: The journey from simplicity to complexity. **Postharvest Biol. Technol. 122:3-10.**

Wisniewski, M., Norelli, J., Droby, S., Levin, E., Ballester, A-R., Abdelfattah, A. **2016**. Genomic tools for developing markers for postharvest disease resistance in Rosaceae crops. **Acta Hort. (1144 DOI 10.17660/ActaHortic.2016.1144.2).**

Droby, S., Wisniewski, M., Teixido, N., Spadaro, D., Jijakli, M..H. **2016.** The science, development, and commercialization of postharvest biocontrol products. **Postharvest Biol. Technol. (122: 22-29).**

Cheng, Z., Chi, M., Li, G., Chen, H., Sui, Y., Wisniewski, M., Norelli, J., Liu, Y., Liu, J. **2016.** Heat shock improves stress tolerance and biocontrol performance of *Rhodotorula mucilaginosa*. **Biological Control 95: 49-56.**

Sui, Y., Wisniewski, M., Droby, S., Norelli, J., Liu. J. **2016.** Recent advances and current status of the use of heat treatments in postharvest disease management systems: Is it time to turn up the heat? **Trends in Food Science and Technology. 51: 34-40.**

Liu, Y., Wisniewski, M., Kennedy, J.F., Jiang, Y., Tang, J., Liu, J. **2016.** Chitosan and oligochitosan enhance ginger (*Zingiber officinale*) resistance to rhizome rot caused by *Fusarium oxypsorum* in storage. **Carbohydrate Polymers 151: 474 -479.**

Liu, J., Sui, Y., Wisniewski, M., Xie, Z., You, Y, Zhang, X., Sun, Z., Li, W, Li, Y, and Wang, Q. **2017.** The impact of the postharvest environment on the viability and virulence of decay fungi. C**ritical Reviews in Food Science and Nutrition.** (**In Press**).

Arrarte, E., Garmendia, G., Rossini, C., Wisniewski, M., and Vero. S. **(2017).** Volatile organic compounds produced by Antarctic strains of Candida sake control postharvest pathogens of apple. **Biological Control (In Review).**

Abdelfattah, A., Wisniewski, M., Droby, S, and Schena, L. **(2016).** Spatial and compositional variation in the fungal communities of organic and conventionally grown apple fruit at the consumer point-of-purchase. **Horticulture Research 3, 16047; doi:10.1038/hortres.2016.47.**

Norelli, J.L., Wisniewski, M., Fazio, G., Burchard, E., Guiteirrez, B., Levin, E. and Droby, S. (**2017).** Genotyping-By-Sequencing markers facilitate the identification of quantitative trait loci controlling resistance to *Penicillium expansum* in *Malus sieversii*. **PLoS (In Press).**

Parafati, L, Cirvilleri, G., Restuccia, C, and Wisniewski, M. **(2016).** Potential role of exoglucanases (*WaEXG1 and WaEXG2*) in the biocontrol activity of *Wickerhamomyeces anomalus*. **Microbial Ecology: DOI 10.1007/s00248-016-0887-5.**

Buron-Moles G., Wisniewski, M, Vinas, I, Teixido, N., Usall, J., Droby, S., and Torres. R. **(2016)** Proteomic and oxi-proteomic response of apple to a compatible and non-host pathogen. **Acta. Hort. 1144. ISHS 2016. DOI 10.17660/ActaHortic.2016.1144.3.**

Vilanova, L, Wisniewski, M., Norelli, J., Vinas, I, Torres, R., Usall, J., Phillips, J., Droby, S, and Teixido, N. **2016.** Differential apple transcriptomic responses to *Penicillium expansum* (pathogen) and *Penicillium digitatum* (non-host pathogen) infection. **Acta Hortic. 1144. ISHS 2016. DOI 10.17660/ActaHortic.2016.1144.7.**

***Stress Physiology***

Wisniewski, M. And E. Ashworth. **1985**. Changes in the ultrastructure of xylem parenchyma cells of peach and red oak in response to a freezing stress. **Amer. J. Bot. 72: 364-1376.**

Wisniewski, M. And E. Ashworth. **1986**. A comparison of seasonal ultrastructural changes in stem tissues of peach (Prunus persica (L.) Batch) that exhibit contrasting mechanisms of cold hardiness. **Bot. Gaz. 147: 407-417.**

Wisniewski, M. And E. Ashworth. **1985**. Seasonal variation in deep supercooling and dehydrative resistance. **HortScience 21: 503-505.**

Wisniewski, M., Schaffer, K., and W. Hershberger. **1987**. The use of lanthanum to characterize cell wall permeability in relation to the freezing response of woody plants. **Proc. Electr**. **Microscop. Soc. Am. 45: 988-989.**

Wisniewski, M., Ashworth, E. N., Schaffer, K. **1987a**. The use of lanthanum to characterize cell wall permeability in relation to deep supercooling and extracellular freezing in woody plants: I. Intergeneric comparisons between Prunums, Cornus and Salix. **Protoplasma 139: 105-116.**

Wisniewski, M., Ashworth, E. N., Schaffer, K. **1987b**. The use of lanthanum to characterize cell wall permeability in relation to deep supercooling and extracellular freezing in woody plants: II. Intrageneric comparisons between Betula lenta and Betula papyrifera. **Protoplasma 141: 160-168.**

Wisniewski, M. And Davis, G. **1989**. Evidence for the involvement of a specific cell wall layer in regulation of deep supercooling of xylem parenchyma. **Plant Physiol. 91: 151-156.**

Wisniewski, M., Lightner, G., Schiavone, F.M., and Davis. G. **1990**. System configuration for computer-controlled differential thermalanalysis of plants at low temperatures. **J. Comp. Electron. Agric. 5: 223-232.**

Wisniewski, M., Davis, G., and Schaffer, K. **1991**. Mediation of deep supercooling of peach and dogwood by enzymatic modifications in cell wall structure. **Planta 184: 254-260.**

Wisniewski, M., Davis, G., and Arora, R. **1991**. The effect of macerase, oxalic acid, and EGTA on deep supercooling and pit membrane structure of xylem parenchyma of peach. **Plant Physiol 96: 1354-1359.**

Schaffer, K. And M. Wisniewski. **1989**. Development of the amorphous layer (protective layer) in xylem parenchyma of cv. Golden Delicious apple, cv. Loring peach, and willow. **Amer. J. Bot. 76: 1569-1582.**

Schaffer, K. And M. Wisniewski. **1990**. Colloidal gold in prescribed sizes as an apoplastic tracer for the determination of pore size in woody plant tissues. **J. Electron Microsc. Tech. 15: 318-319.**

Ashworth, E. N., Davis, G. A., and M. E. Wisniewski. **1989**. The formation and distribution of ice within dormant and deacclimated peach flower buds. **Plant. Cell. Env. 12: 521-528.**

Ashworth, E. N. And M. E. Wisniewski. **1991**. Response of fruit tree tissues to freezing temperatures. **HortScience 26: 501-504.**

Arora, R., Wisniewski, M., and D. Makus. **1992**. Cold hardiness in asparagus. **HortScience 27: 823-824.**

Arora, R., Wisniewski, M., and R. Scorza. **1992**. Cold acclimation in genetically related (sibling) deciduous and evergreen peach (Prunus persica [L.] Batch). **Plant Physiol 99: 1562-1568.**

Rodriquez, A. J., Sherman, W. B., Scorza, R., Okie, W. R., and M. Wisniewski. **1994**. 'Evergreen' peach, It's Inheritance and Dormant Behavior. **J. Amer. Soc. Hort. Sci. 119: 789-792.**

Takeda, F., Arora, R., Wisniewski, M., and M. B. Warmund. **1993**. Assessment of freeze injury in overwintering 'Books Giant' black currant buds. **HortScience 28: 652-654.**

Arora, R. And M. E. Wisniewski. **1994**. A 60 kD polypetide in cold acclimated bark tissues of peach is heat stable and related to the dehydrin family of proteins. **Plant Physiol. 105: 95-101.**

Arora, R. And M. Wisniewski. **1995**. Ultrastructural and protein changes in cell suspension

cultures of peach associated with low-temperature-induced cold acclimation and ABA treatments. **Plant Cell, Tissue and Organ Cult. 40: 17-24.**

Wisniewski, M. And G. Davis. **1995.** Immunogold localization of pectins and glycoproteins in tissues of peach with reference to deep supercooling. **Trees: Structure and Functions 9: 253-260.**

Rowland, L., Levi, A., Arora, R., Ogden, E., Muthalif, M., Vorsa, N., Novy, R., and M. Wisniewski. **1995**. Progress toward identifying markers linked to genes controlling chilling requirements and cold hardiness in blueberry. **Small Fruits J. 3: 39-52.**

Wisniewski, M., Close, T. J., Artlip, T., and R. Arora. **1996**. Seasonal patterns of dehydrins and 70-kDa heat-shock proteins in bark tissues of eight species of woody plants. **Physiol.Plant. 96: 496-505.**

Wisniewski, M. **1996**. Recent advances in plant responses to stress: Bridging the gap between science and technology: Introduction to the colloquium. **HortScience 31: 30-31.**

Arora, R., Wisniewski, M., and Rowland, L. J. **1996**. Cold acclimation in dehydrin-like and bark storage proteins in the leaves of sibling deciduous and evergreen peach. **J. Amer. Soc. Hort. Sci. 121:915-919.**

Arora, R. and Wisniewski. **1996.** Accumulation of 60 kD dehydrin protein in peach xylem tissues and its relationship to cold acclimation. **HortScience 31: 923-925.**

Sauter, J., Wisniewski, M., and W. Witt. **1996**. Interrelationships between ultrastructure, sugar levels, and frost hardiness of ray parenchyma cells during frost acclimation and deacclimation in poplar (*Populus x canadensis* Moench *'robusta'*) wood. **J. Plant Physiol. 149:451-461.**

Fuchigami, L. And M. Wisniewski. **1997.** Quantification of bud dormancy-Physiological approaches. **HortScience. 32:618-623.**

Wisniewski, M., J. Sauter, L. Fuchigami, and V. Stepien **1997.** Effects of near-lethal heat stress on budbreak, heat-shock proteins and ubiquitin in dormant poplar (*Populus nigra Charkowiensis x* P. *Nigra incrassata*). **Tree Physiol. 17:453-460.**

Artlip, T., Callahan, A., and M. Wisniewski **1997**. Seasonal expression of a dehydrin gene in peach (*Prunus persica* L. Batsch). **Plant Molec. Biol. 33: 61-70**.

Wisniewski, M., Lindow, S. and Ashworth, E. **1997**. Observations of ice nucleation and propagation in plants using infrared video thermography. **Plant Physiol. 113:**

Arora, R., Wisniewski, M.E., and L.J. Rowland. **1997.** Low temperature-induced expression of dehydrins in deciduous fruit crops and their relation to cold acclimation and/or dormancy. In"

Proceedings V. Int. Symp. On Temp. Zone Crops. A.B. Kuden, F. Dennis, eds. **Acta Horticulturae. 441: 175 - 182.**

Artlip, T. and M. Wisniewski. **1997**. Tissue specific expression of a dehydrin gene in one-year-old 'Rio Oso Gem' Peach Trees. **J. Amer. Soc. Hort. Sci. 122: 784-787.**

Fuller, M.P. and M. Wisniewski. **1998**. The use of thermal imaging in the study of ice nucleation and freezing of plants. **J. Thermal Biol. 23: 81-89. 327-346.**

Vasudevan, L., Wolf, T.K., Welbaum, G.G. and M. Wisniewski. **1998**. Reductions in bud carbohydrates are associated with grapevine bud necrosis. **Vitis 37: 189-190**.

Vasudevan, L., Wolf, T.K., Welbaum, G.G. and M. Wisniewski. **1998**. Anatomical developments and effects of artificial shade on bud necrosis of Riesling grapevines. **Am. J. Enol. Vitic. 49: 429 - 438.**

Wisniewski, M., Webb, R., Balsamo, R. Close, T. Yu, X-M., and Griffith, M. **1999**. Purification, immunolocalization, cryoprotective, and antifreeze activity of PCA60: a dehydrin from peach. **Physiol. Plant.105: 600-608**.

Sauter, J., Westphal, S., and M. Wisniewski. **1999.** Immunological identification of dehydrin-related proteins in the wood of five species of *Populus* and in *Salix caprea* L. **J. Plant Physiol. 154: 781-788.**

Carter, J., Brennan, R., and M. Wisniewski. **1999**. Low-temperature tolerance of blackcurrant flowers. **HortScience 34: 855-859.**

Workmaster, B-A., Palta, J., and M. Wisniewski. **2000**. Ice nucleation and propagation in cranberry uprights and fruit using infrared video thermography. **J. Amer. Soc. Hort. Sci. 124: 619-625.**

Carter, J., Brennan, R., and M. Wisniewski. **2001.** Patterns of ice formation and movement in blackcurrant. **HortScience 36: 1027-1033.**

Wisniewski, M., Glenn, M. and M. Fuller. **2002** The use of a hydrophobic particle film as a barrier to extrinsic ice nucleation tomato (*Lycopersicon esculentum* L.) plants. **J. Amer. Soc. Hort. Sci. 128: 358-364.**

Fuller, M.P., F. Hamed, M. Wisniewski, and D.M Glenn. **2003**. Protection of plants from frost using hydrophobic particle film and acrylic polymer. **Ann. Appl. Biology 143: 93-97.**

Huang, T.J. Nicodemus, D. Zarka, M. Thomashow, M.E. Wisniewski and J.G. Duman. **2002**. Expression of an insect (Dendroides Canadensis) antifreeze protein in Arabidopsis thaliana results in a decrease in plant freezing temperature. **Plant Mol. Biol. 50: 333-344.**

Wisniewski, M., Bassett, C. and Gusta, L.V. **2003.** An overview of cold hardiness in woody plants: seeing the forest through the trees. **HortScience 38: 952-959.**

Wisniewski, M., Glenn, DM, Gusta, LV, Fuller, M., Duman, J., Griffith, M. **2003.** Using infrared thermography to study ice nucleation and propagation in plants. **Acta Hort 618: 485-492.**

Griffith, M., Lumb, CL, Wiseman, SB, Johnson, RW, Wisniewski, M. **2003**. Winter rye antifreeze proteins are not cryoprotective, rather they modify the growth of ice in planta. **Acta Hort. 618: 31-37.**

Fuller, M., Hamed, F., Wisniewski, M., Glenn, M. **2003.** Protection of plants from frost using hydrophobic particle film and acrylic polymer. **Ann. Appl. Biol. 143: 93-97.**

Gusta, LV., Wisniewski, M., Nesbitt, NT, and Tanino KT. **2003**. Factors to consider in artificial freeze tests. **Acta Hort. 618: 493-507**.

Stier, J.C., Filiault, D., Wisniewski, M. and Palta, J. **2003.** Visualization of freezing progression in turfgrasses using infrared video thermography. **Crop Science 43: 415-420.**

Wisniewski, M. C. Bassett, and R. Arora. **2004**. Distribution and partial characterization of seasonally expressed proteins in different aged shoots of Loring peach. **Tree Physiology 24: 339-345.**

Gusta, LV, Wisniewski, M., Nesbitt, NT, and ML Gusta**. 2004.** The effect of water, sugars, and proteins on the pattern of ice nucleation and propagation in acclimated and nonacclimated canola leaves. **Plant Physiol. 135: 1642-1653**.

Bassett, C., Nickerson, M., Farrell, R., Jr., Artlip, T., El Ghaouth, A., Wilson, C., and M. Wisniewski. **2005.** Characterization of an S-locus receptor protein kinase-like gene from peach. **Tree Physiol. 25: 403-411.**

Wang, Y., Wisniewski, M., Meilan, R., Cui, M., Webb, R., and L. Fuchigami. **2005**. Overexpression of cytosolic ascorbate peroxidase in tomato (*Lycopersicon esculentum* L.) confers tolerance to chilling and salt stress. **J. Amer. Soc. Hort. Sci. 130: 167-173.**

Griffith, M., Lumb, C., Wiseman, S., Wisniewski, M., Johnson, R., and Marangoni, A. **2005.** Antifreeze proteins modify the freezing process in planta. **Plant Physiol. 138: 1-11.**

Renaut, J., Hausman, J.F. and M.Wisniewski. **2006**. Proteomics and low temperature studies: Bridging the gap between gene expression and metabolism. **Physiol. Plant. 126: 97-109.**

*Wisniewski, M., Bassett, C., Renaut, J., Farrell, R., Jr., Tworkoski, T., and T. Artlip. **2006**. Differential regulation of two dehydrin genes from peach (*Prunus persica* L. Batsch) by photoperiod, low temperature, and water deficit. **Tree Physiol. 26: 575-584.**

Bassett, C., Wisniewski, M., Artlip, T., Norelli, J., Renaut, J., Farrell, R. Jr. **2006**. Global analysis of genes regulated by low temperature and photoperiod in peach bark. **J. Amer. Soc. Hort. Sci. 131: 551-563.**

Kalberer, S., Wisniewski, M., and Arora, R., **2006.** Deacclimation and reacclimation of cold-hardy plants: Current understanding and emerging concepts. **Plant Science 171: 3-16.**

Wang, Y., Wisniewski, M., Meilan, R., Cui, M. and L. Fuchigami. **(2006).** Transgenic tomato (*Lycopersicon esculentum)* overexpressing cAPX exhibits enhanced tolerance to UV-B and heat stress. **Journal of Applied Hort. 8: 87-90.**

Wisniewski, M., Bassett, C., Norelli, J., Artlip, T., Renaut, J. (**2007**). Using biotechnology to improve resistance to environmental stress in fruit crops: The importance of understanding physiology. **Acta Hort. 738:145-156.**

Swietlik, D., Vann, C., Wisniewski, M., Artlip, T., Norelli, J. and Kochian, L. (**2007**). The effect of transporter genes on zinc stress in apple. **Acta Hort. 738: 345-352.**

Renaut, J.,Wisniewski, M., Bassett, C., Artlip, T., Cauchie, H-M., Witters, E., Laukens, K, Hausman, J-F. (**2008**). Quantitative proteomic analysis of short photoperiod and low temperature responses in bark tissues of peach. **Tree Genetics and Genomes. 4:589-600.**

Wang, Y, Wisniewski, M., Uratsu, SL, Cui, M., Dandekar, A., and L. Fuchigami. **(2007).** Ectopic expression of Mn-SOD in *Lycopersicon esculentum* leads to enhanced tolerance to salt and oxidative stress. **Journal of Applied Hort. 9: 1-5.**

Wisniewski, M, C Bassett, J Norelli, D Macarisin, T Artlip, K Gasic, and S Korban. (**2008**) Expressed sequence tag analysis of the response of aplle (*Malus x domestica*) to low temperature and water deficit. **Physiol Plant. 33:298-317.**

Wisniewski, M, Glenn, D.M., Gusta, L., and M.P. Fuller **(2008).** Using infrared thermography to study freezing in plants. **HortScience 43: 1648-1651.**

Norelli, J., Farrell, R., Bassett, C., Baldo, A., Lalli, D, Aldwinckle, H. and M. Wisniewski **(2009).** Rapid transcriptional response of apple to fire blight disease revealed by cDNA suppression subtractive hybridization analysis. **Tree Genetics and Genomes 5: 27-40.**

Gasic, K., Han, Y., Kerbudnit, S. Shulaev, V, Iezzoni, A., Stover, E., Bell, R., Wisniewski, M. and S. Korban. **(2009)**. Characteristics and transferability of new apple EST-derived SSRs to other Rosaceae species. **Mol. Breeding. 23:397-411.**

Gasic, K., Gonzalez, D., Thimmapuarm, J., Liu, L., Malnoy, M., gong, G., Han, Y., Vodkin, L., Aldwinckle, H., Carrol, N., Orvis, K., Godsbrough, P., Clifton, S., Pape, D., fulton, L.,

Martin, J., Theising, B., Wisniewski, M., Fazio, G, Feltus, F., and S. Korban. **(2009).** Comparative analysis and functional annotation of a large expressed sequence tag collection of apple. **Plant Genome 2:23-38.**

Bassett, C., Wisniewski, M., Artlip, T., Richart, G., Norelli, J., and Farrell, R., Jr. **(2009).** Comparative expression and transcript initiation of three peach dehydrin genes. **Planta 23: 107-118.**

Macarisin, D., Wisniewski, M., Bassett, C., and T. Thannhauser. **(2009).** Proteomic analysis of ß-aminobutyric acid priming and abscisic acid-induction of drought resistance in crabapple (*Malus pumila*): effect on general metabolism, the phenylpropanoid pathway and cell wall enzymes. **Plant Cell and Enviroment 32: 1612-1631.**

Wisniewski, M., Norelli, J., Bassett, C., Artlip, T., Macarisin, D. **(2011).** Ectopic expression of a novel peach (*Prunus persica*) *CBF* transcription factor in apple (*Malus* x *domestica*) results in short-day induced dormancy and increased cold hardiness. **Planta 233: 971-983.**

Lin, X., Wisniewski, M., Duman, J.G. **2011**. Expression of two self-enhancing antifreeze proteins from the beetle, *Dendroides canadensis* in *Arabidopsis thaliana,* **Plant Molec. Biol. Rep. 29: 802-813.**

Soria-Guerra, RE, Rosales-Mendoza, S, Gasic, K, Wisniewski, ME, Band, M, Korban, SS. **2011**. Gene expression is highly regulated in early developing fruit of apple. **Plant Mol. Biol Rep. 29:885-897.**

Bassett, C., Glenn, D.M., Forsline, P.L., Wisniewski, M.E. and Farrell, R. **2011**. Characterizing water use efficiency and water deficit responses in apple (Malus x domestica and Malus sieversii**. HortScience** 46: 1079 – 1084.

Tworkoski, T. Wisniewski, M. and Artlip. T. **(2011**). Interaction of BABA and s-ABA for drought resistance in apple. **J. Applied Hort. 13: 85-90.**

Gusta, L.V, and Wisniewski, M. **(2013).** Understanding plant cold hardiness: an opinion. **Physiol Plant. 147: 4-14.**

Wisniewski, M. Nassuth, A., Teulieres, C., Marque, C., Rowland, J., Cao, P-B., and A. Brown. **(2014)** Genomics of cold hardiness in woody plants. **Critical Reviews in Plant Science 33:92-124.**

Artlip, T., Wisniewski, M., Bassett, C., Norelli, J**. 2013.**CBF gene expression in peach and leaf and bark tissues is gated by a circadian clock. **Tree Physiology 33:866-877.**

Wisniewski, M., Gusta, L., Neuner, G. **2014**. Adaptive mechanisms of freeze avoidance in plants: A brief update. **Env. Exp. Botany 99:133-140**.

Artlip, S., Wisniewski, M. and Norelli, J. **2014**. Field evaluation of apple overexpressing a peach CBF gene confirms its effect on cold hardiness, dormancy, and growth**. Env. Exp. Bot. 106: 79-86.**

Wisniewski, M., Gusta, L., Neuner, G. **2014.** Adaptive mechanisms of freeze avoidance in plants: A brief update. Env. Exp. Botany **99: 133-140**.

Wisniewski, M., Neuner, G. and Gusta, L.V. **2015.** The use of high-resolution infrared thermography (HRIT) for the study of ice nucleation and ice propagation in plants. **J. Visualized Experiments (JoVE) 99: e52703.**

Wisniewski, M., Norelli, J. and Artlip, T. **2015.** Overexpression of a peach CBF gene in apple: A model for understanding the integration of growth, dormancy, and cold hardiness in woody plants. **Frontiers of Plant Science. 6: Article 95.**

Artlip, T., Wisniewski, M., Norelli, J., Arora, R. **2016**. An apple rootstock overexpressing a peach CBF gene alters growth and flowering in the scion but does not impact cold hardiness or dormancy. **Horticultural Research 3: 1600. doi:/10.1038/hortres.2016.6**

Tang, W., Zheng, Yi, Dong, J., Yu, J. Yue, J., Liu, F., Guo, X., Huang, S, Wisniewski, M., Sun, J., Niu, X, ding, J., Liu, J., Fei, Z, Liu, Y. **2016.** Comprehensive transcriptome profiling reveals long noncoding RNA expression and alternative splicing regulation during fruit development and ripening in kiwifruit (*Actinidia chinensis*). **Frontiers in Plant Science. Article 335.**

Artlip, T., Wisniewski, M. Takatsui, H., and Bassett, L. **2016.** Engineering carpel-specific cold stress tolerance: a case study in Arabidopsis. **Physiol. Plant. 157: 469-478.**

**GENERAL PUBLICATIONS**

Wisniewski, M. and A. L. Bogle. **1982**. The ontogeny of the inflorescence and flower of *Liquidambar styraciflua* L. (Hamamelidaceae). **American Journal of Botany 69: 1612-1624.**

Takeda, F. and Wisniewski, M. **1989**. Organogenesis and patterns of floral bud development in

two eastern thornless blackberry cultivars. **J. Amer. Soc. Hort. Sci. 114: 528-531.**

Takeda, F., M. Wisniewski, and D. Glenn. **1991**. Occlusion of water pores prevents guttation in older strawberry leave. **J. Amer. Soc. Hort. Sci. 122-1125.**

Brown, M., D. Glenn, and M. Wisniewski. **1991**. Functional and anatomical disruption of apple roots by the woolly apple aphid. **J. Econ. Entomol. 84: 1823-1826.**