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## EDUCATION

Ph.D. in Plant Science, *expected* January, 2003.  
Utah State University

M.S. in Horticulture, May, 1999.  
Purdue University

B.S. in Biochemistry, May, 1996. (Minors in Chemistry and Biology)  
Virginia Polytechnic Institute and State University

## TEACHING EXPERIENCE

— *Utah State University* —

**Greenhouse Management / Crop Production** Spring 2002

Guest lecture for Craig Aston in PLSC 3050

Topic: Plant lighting needs and measurement

**Plant Nutrition** Fall 2001

Taught half a semester of PSB 5430/6430

Topics: Root growth, rhizosphere environment, symbiosis, and biochemical role of each mineral nutrient.

**Crop Physiology** Spring 2000, 2001, 2002

Guest lecture for Dr. Bruce Bugbee in PSB 5210/6210

Topics: Energy balance models, growth analysis, and crop respiration

**Crop Physiology Laboratory** Spring 1999, 2000, 2001

Graduate teaching assistant for Dr. Bruce Bugbee in PSB 5210/6210

Topics: Measuring radiation, photobiology, growth analysis, transpiration, open and closed system gas-exchange

— *Purdue University* —

**Horticultural Production Technologies** Fall 1997

Guest lecture for Dr. Steve Weller in HORT 401

Topic: Controlled environment agriculture.

**Horticultural Production Technologies** Fall 1997

Graduate teaching assistant for Dr. Steve Weller in HORT 401

Topic: growth structures, growth media, irrigation, supplemental lighting, pruning, fertilization, crop production, mechanization, and post-harvest handling.

## AWARDS / MEMBERSHIPS / HONORS

### — Awards —

American Society for Gravitational and Space Biology meeting; November 2001  
Third Place: Graduate Poster Competition  
NCR-101 / UK Controlled Environment Users Group meeting; September 2001  
Graduate Student Travel Award  
NASA Graduate Student Research Program Fellowship; July 2000 to present  
Vice-Presidential Fellowship at Utah State University, Spring 1999  
American Society for Gravitational and Space Biology meeting, 1998  
Honorable Mention: Graduate Poster Competition

### — Memberships —

American Association for the Advancement of Science 2001 to present  
American Agronomy and Crop Science Society of America 1999 to present  
American Society of Horticultural Science 1996 to present

### — Honors —

Graduated Cum Laude from VT, May, 1996.  
Outstanding Undergraduate Student Award in the Biochemistry Department at VT, May, 1996  
Dean's List all semesters at VT, 1992 to 1996.  
Phi Kappa Phi 1994 to present  
Alpha Phi Omega 1993 to 1996

## INVITED TALKS

National Onion Growers Association summer meeting in Ogden, UT, July 18, 2002. “What’s Next?... Onions in Space.” *In place of B. Bugbee.*  
Space Botany Meeting in Beijing, China, March 21 to 31, 2002. “Breeding and Selecting Plants for Use in Space” and “NASA funded research at Utah State University.” *Part of seminar with B. Bugbee.*  
NASA Johnson Space Center, July 12, 2000. “Respiration and Carbon Use Efficiency in Crop Plants.” *Co-presenter with B. Bugbee.*

## PUBLICATIONS

### — Refereed publications —

Klassen, S. P., Ritchie, G., **Frantz, J. M.**, Pinnock, D., and Bugbee, B. Real time imaging of ground cover: relationships with radiation capture, canopy photosynthesis, and relative growth rate. *Crop Sci.* *Accepted 10-17-02.*  
**Frantz, J. M.** and Bugbee, B. 2002. Anaerobic conditions improve germination of a gibberellic acid deficient rice. *Crop Sci.* 42:651-654.  
**Frantz, J. M.**, Joly, R. J. and Mitchell, C. A. 2001. Intracanopy lighting reduces electrical energy utilization by closed cowpea stands. *Life Support and Biosphere Sci.* 7:283-290.  
Welbaum, G. E., **Frantz, J. M.**, Gunatilaka, M. K., and Shen, Z. 2001. A comparison of the growth, establishment, and maturity of direct-seeded and transplanted *sh<sub>2</sub>* sweet corn. *HortSci.* 36:687-690.  
**Frantz, J. M.**, Joly, R. J., and Mitchell, C. A. 2000. Intracanopy lighting influences radiation capture, productivity, and leaf senescence in cowpea canopies. *J. of Am. Soc. Hort. Sci.* 125:694-701.  
**Frantz, J. M.**, Frick, J., and Mitchell, C. A. 1999. A solid-matrix/liquid hybrid hydroponic system for establishment of small-seeded crop species. *HortTech.* 9:165-168.

- Frantz, J. M.**, Chun, C., Joly, R. J., and Mitchell, C. A. 1998. Intracanopy lighting of cowpea canopies in controlled environments. *Life Support and Biosphere Sci.* 5:183-189.
- Frantz, J. M.**, and Welbaum, G. E. 1998. Producing horticultural crops using hydroponic tobacco transplant systems. *HortTech.* 8:392-395.
- Frantz, J. M.**, and Welbaum, G. E. 1998. Comparison of cabbage seedling growth in four transplant production systems. *HortSci.* 33:976-979.

— *Non-Refereed Publications / Conference Proceedings* —

- Gunatilaka, M. K., **Frantz, J. M.**, and Welbaum, G. E. 1997. Growing SH2 sweet corn from transplants. 5th International Symposium on Stand Establishment, Conference Proceedings. June 1-4, 1997, Columbus, Ohio. pp. 249-253.
- Frantz, J. M.**, and Welbaum, G. E. 1995. A comparison of four cabbage transplant production systems. 3rd International Symposium on Stand Establishment, Conference Proceedings. April 23-26, Monterey, California. pp. 169-174.
- Frantz, J. M.**, and Welbaum, G. E. 1995. Growing SH2 sweet corn from transplants. Proceedings of the 3rd International Symposium on Stand Establishment, Conference Proceedings. April 23-26, Monterey, California. pp. 199-202.

— *Completed Manuscripts in Internal Review* —

- Frantz, J. M.** and Bugbee, B. Carbon use efficiency is influenced by altered night temperatures in lettuce, tomato, and soybean.
- Frantz, J. M.** and Bugbee, B. Response of photosynthesis, respiration, and carbon use efficiency to shade in lettuce and tomato.
- Frantz, J. M.**, Ritchie, G., Cometti, N. N., Robinson, J., and Bugbee, B. Exploring the limits of crop productivity: quantum yield, radiation capture, and carbon use efficiency of lettuce in a high light, temperature, and CO<sub>2</sub> environment.
- Frantz, J. M.**, Pinnock, D., Klassen, S., and Bugbee, B. Characterizing the environmental response of a gibberellic acid deficient rice for use as a model crop.
- Frantz, J. M.**, Cometti, N. N., van Iersel, M. and Bugbee, B. Acclimation of tomato to high and low temperature and Light
- Dougher, T. A., **Frantz, J. M.**, and Bugbee, B. Role of temperature in carbohydrate status, growth, development, and recovery from long-term darkness.

**PRESENTATIONS AT NATIONAL MEETINGS**

- First author: 9 oral and 8 poster presentations  
 Co-author: 6 oral and 4 poster presentations.