

Cristina Paul
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Federal Employment

10/1998-present

Horticulturist CATIII GS11/10

United States Department of Agriculture, Agricultural Research Service,
Beltsville Area, Plant Science Institute, Molecular Plant Pathology
Laboratory (USDA, ARS, BA, PSI, MPPL)

Bldg. 004 Rm. 118

Beltsville, MD 20705

Dr. John Hartung 301-504-6374

8/19/89 - 12/1989

Tractor Operator WG8

USDA, ARS, BA, FMOD

Beltsville, MD 20705

Bob Hoover (retired) 301-504-5562

6/1986 – 12/1988

1040 Student Fruit Lab GS4

USDA, ARS, BA, PSI, FL

Bldg. 010A Rm. 238

Beltsville, MD 20705

Dr. R. Zimmerman (retired)

Education:

University of Maryland - Masters Degree - Horticulture 1995

Dr. Chris Walsh -major advisor

Thesis: Tissue Culture Maintenance of Citrus Tristeza Virus (CTV) in Citrus Explants.

GPA: 3.5 of possible 4.0 / 30 Credits total

University of Maryland - Bachelor of Science Degree - Horticulture 1988

GPA: 3.05 of possible 4.0 / 140 Credits total

Continuing Education through USDA:

☐ **USDA Graduate School**

- HTML programming
- Section 508 compliance
- Web graphics
- New Leader Program

☐ **Beltsville Area Supervisory Classes**

- Better communication with customers
- Interviewing people
- Employee recognition and management
- Laboratory bio-safety training
- Assertiveness skills for Managers/Supervisors
- FISH training

☐ **Continuing Adult Education (National Seminars)**

- Designing Newsletters, brochures and presentations
- Conference for Women
- Microsoft Excel Tips and Tricks and Advanced User

Experience:

1998 – Present (I began in 1991 as a cooperative science agreement employee with University of Florida)
Horticulturist Cat III **Supervisor** – Dr. John Hartung
Manager of the Citrus Quarantine Facility
USDA, ARS, BA, PSI, MPPL
Bldg. 004 Rm. 118
Beltsville, MD 20705
Full Time
Salary Level GS 11 step 10

The major role of my position is to assist in research that involves quarantined plant pathogens (bacteria, virus, and viroid) in a Bio Level 1 level facility. I evaluate and develop diagnostic tests that will rapidly detect all bio-types of citrus pathogens. I also evaluate the severity of isolates from world-wide locations, comparing them against each other in a uniform environment. Our work is published in peer reviewed scientific journal articles as well as presented at national and international meetings.

I perform single and multiple insect transmissions of citrus pathogens at our High Risk Bio Level 3 quarantine facility at Ft. Detrick, Maryland, in order to determine transmission efficacy and or changes in pathogen phenotype. The facility is governed by the select agent program in the Animal Plant Health Inspection Service (APHIS) so I am also involved in updating and maintaining our Standard Operations Procedures manual and ensuring that the facility is in compliance with all rules and regulations. I have extensive knowledge of quarantine rules and regulations at both State and Federal levels. I am also familiar with the importation and exportation processes involved in the transport of quarantine and select agent plant pathogens.

I review and evaluate research related to citrus, grape, and strawberry pathogens and assist in the development or modification of protocols, which facilitate the research and follow all quarantine safeguards. Some of the laboratory techniques that I am familiar with include purification of DNA, RNA, viruses, and bacteria from plant samples, Double Antibody Sandwich Indirect Enzyme Linked Immunosorbent Assay and gel electrophoresis for pathogen detection. I serve as a team member and coordinator for scientists from Funde de Citrus in Brazil, University of Sao Paulo, Brazil, Reunion, France, Spain, and China as well as and national locations (Florida, Texas, and California) who perform experiments in my facility.

I maintain detailed records for all experiments performed and transmit the data in any format requested to our cooperators. I contribute recommendations for new experimental design based on personal observation, review of scientific publications and analysis of the collected data. I manage both a quarantined laboratory and greenhouse. Greenhouse management includes all facets of plant care and maintenance, development of insecticidal spray and fertilizer programs, and operation and maintenance of the Argus greenhouse climate control system. The greenhouse holds both healthy plants and numerous collections of plants that are infected with a wide variety of plant pathogens.

Computer Graphic Artist - 1993 - Present - An additional duty assignment is as the computer graphics specialist for my laboratory which includes development of large format poster (Hewlett Packard HP5000 and HP 25000 large format printers) presentations using various graphics software packages. Part of my graphics knowledge includes expert skill in digital editing and photography. I have produced hundreds of scientific and general knowledge posters that have been presented at national and international meetings. I have the ability to tailor each poster to the knowledge level of the intended audience, from fellow scientists to the general public. The USDA was reorganized in 2007 and prior to that I was also web master for the Fruit Lab creating and maintaining over 50 informational web pages for ten years. I am skilled in html and JavaScript code.

I currently sit on several committees at USDA. I serve as one of the chief contacts for the American Red Cross, and help to organize 6 blood drives a year at USDA, BARC. As a member of the greenhouse and greenhouse design committees I serve as a consultant for all greenhouse and greenhouse design issues from growth problems and general maintenance and structure repair to quarantine and security problems. I assist and MC the annual pesticide recertification classes along with our greenhouse manager, contacting speakers and organizing the agenda and program.

Collateral Duty Safety Officer - 1998 – Present - I serve as the collateral duty safety officer for my lab and alternate safety chair for the Plant Science Institute. I was requested by management to teach several safety classes to other employees. As part of my involvement with safety I also initiated a centrifuge rotor safety inspection, fluorescent bulb recycling pick ups (over 2,500 bulbs), and a printer and toner cartridge recycling program. I will also be a committee member of the general recycling program in the safety office. My position also requires that I conduct safety inspections of all of our lab, office, and greenhouse spaces on a regular basis to ensure compliance with all safety regulations.

Feb. 1991 – Oct. 1998 – Senior Biological Scientist/Assistant Citrus Pathologist

USDA, ARS, BA, PSI, FL, Bldg. 010A Rm. 238 Cooperative agreement with University of Florida, CREC, 700 Exp. Station Rd. Lake Alfred, Florida 32850.

Position was the same as current, funding changed from University of Florida to USDA in October 1998

Nov. 1998 – present – Integrated Pest Manager

Greenstreet Growers, 391 West Bay Front Rd. Lothian, MD 20711. Ray Greenstreet (owner).

I inspect all of the production fields and greenhouses at Greenstreet Growers Inc. a wholesale and retail grower operation and report findings of insect pests and or disease incidence to the owner and production managers. I advise them on proper treatment and or potential problems that I have were observed. As part of my position I am also called upon to give lectures about gardening to interested groups and serve as a plant advisor to customers with questions.

Jan. 2000 to present – Web Master

- ☐ **Maryland Greenhouse Growers association** <http://www.mdgga.org>
- ☐ **Lothian Ruritan –** <http://www.lothianruritans.org>
- ☐ **South County Concert Association –** <http://www.southcountyconcerts.org>

May 2004-Present – President DC Chapter of Sigma Xi

Sigma Xi is a nationally based organization of research scientists from all facets of research and is not restricted to any set field of study. Chapter members interact at meetings and lectures to learn about current research in various areas of study. As chapter president I organize each meeting, create informational newsletters, and host all events, briefing members on activities at the national level of our society. I am also currently the Associate Director for the Multi Institutional Constituency as well as sit on the Committee for Qualifications and Nominations.

2006-Present – Maryland Nursery and Landscape Association – Board member

I am the guest MGGA representative on the MNLA board. This group is an organization of nursery owners in the state of Maryland. The purpose of the group is to provide education, training, and networking for its members. Funds for events are gained from the Mid Atlantic Nursery and Trade Show which the MNLA owns and puts on each year in Baltimore.

2004-Present – Maryland Greenhouse Growers Association – Board of directors - Secretary

I sit on the MGGA board of directors as Secretary and web master. The group is an organization of greenhouse growers in the state of Maryland. We plan educational events for members and their employees through the year. These events include training days highlighting new production methods, energy conservation, alternative fuels, and pesticide recertification. We also fund scholarships by organizing money raising events such as golf tournaments and fishing trips. I organize the silent auction at our biggest event of the year, "Chesapeake Green", a two-day seminar featuring speakers from all aspects of greenhouse and nursery production.

1998-present – Scapes Alive! –Owner/president

I write Nutrient Management plans for greenhouses so that my customers can maintain there operations in compliance with Maryland Department of Agriculture standards. I also perform landscape and greenhouse Integrated Pest Management (surveying plants for pests and disease and advising on the best solution), and serve as a horticultural consultant for landscape and greenhouse pest and pathogen issues.

Prior employment includes:

- **EPCOT Center** – Horticultural internship at “The Land” pavilion
Dec 1988-June 1989
I maintained the various hydroponic exhibits and gave behind the scenes walking tours to guests informing them of the various methods of hydroponic vegetable and fruit production.
- **Lab tech** – University of Maryland – post harvest physiology
June 1983- June 1986
I conducted research involving ethylene and carbon dioxide release from stored food crops, the result was to determine better ways to maintain peak taste of fruits and vegetables longer in cold storage. I was also the teaching assistant for the graduate post harvest physiology class that my supervisor taught. I helped to develop and test lab protocols, editing them as needed, and aided the students while they were working in my laboratory.
- **Student Lab Tech** – USDA-ARS Fruit Lab – Tissue culture and orchard management –
June 1986 – Dec 1988
I assisted in research involving tissue culture of apple cultivars as a quick method of tree reproduction. Laboratory duties included the sub-culture and division of tissue cultured plantlets and media preparation. I was also the primary orchard specialist involved with all aspects of orchard care and maintenance once the trees were planted out. These duties included the installation and maintenance of a large drip irrigation system, insect and pathogen monitoring, and the collection of all data points to include growth measurements and fruit production.

Job Related Skills:

I am familiar with the following computer software packages: MS Office, Word Perfect, Corel 7/8/9/11 Photo Paint and Draw, PowerPoint, HomeSite 4.5, MS FrontPage, MS Publisher, Windows95/98/XP, Dos, Java script and Html.

Job Related Awards:

- **Preston Teasdale Safety Award – USDA- BARC 2008**
- **Support Scientist of the Year – Plant science institute 2001**
- **Outstanding Performance Award – Dec 2000, Dec 2002, Dec 2003, Dec 2004, Dec 2005, Dec 2006**
- **Merit Award – USDA** – Saving the Citrus Quarantine collection after the tornado 9-25-01
- **Merit Award – USDA** – Graphic artwork for USDA history posters on permanent display July 2000

Job Related Certificates and Licenses:

- **EPA Expert Pesticide applicators panel** for creation of new Core Exam for the USA and Canada
- **Maryland Class X (10) pesticide applicators license**
- **Corel 8** Photo Paint/Draw short course 5/6/98
- **Pi Alpha Xi** – Horticultural honor society – inducted 1986
- **Corel 9 Photo-Paint Boot Camp** (Unleashed Productions) Dec 2-4, 1999
- **Maryland Nutrient Manager Certification – August, 2001 - Present**

Publications

Hartung, J.S., C.C. Paul, D. Achor, R. Brlansky. Colonization of dodder, *Cuscuta indecorans*, by *Ca. Liberibacter asiaticus* and *C. Liberibacter Americans*. *Pytopathology*. 100:8 2010

Garnsey, S.M., E.L. Civerolo, D.J. Gumpf, C. Paul, M. Hilf, R.F. Lee, R.H. Brlansky, R.K. Yokomi, J.H. Hartung. 2004. Biocharacterization of an international collection of Citrus Tristeza virus (CTV) isolates. *International Organization of Citrus Virologists Proceedings*. Nov. 2004.

Hartung, J.S., Gouin, C.C., Lewers, K.S., Maas, J.L., Hokanson, S. 2003. Identification of sources of resistance to bacterial angular leafspot disease of strawberry. *Acta Horticulturae* 626:155-159.

Lewers, K.S., Maas, J.L., Hokanson, S.C., Gouin, C., Hartung, J.S. 2003. Inheritance of resistance in strawberry to bacterial angular leafspot disease caused by *Xanthomonas fragariae*. *Journal of the American Society for Horticultural Science* 128 (2):209-212.

Maas, J.L., Gouin, C., Hokanson, S.C. and Hartung, J.S. 2002. Strawberry parent clones US 4808 and US 4809 resistant to Bacterial Angular Leafspot Disease caused by *Xanthomonas fragariae*. HortScience: 37(4):716-717.

Hartung, J., Gouin, C., Hokanson, S., Maas, J. 2001. Identification of sources of resistance to bacterial angular leafspot disease of strawberry. ASHS meeting abstract.

Maas, J.L., Gouin-Behe, C., Hartung, J.S. and Hokanson, S.C. 2000. Sources of resistance for two differentially pathogenic strains of *Xanthomonas fragariae* in *Fragaria* genotypes. HortScience 35(1): 128-131.

John L. Mass, Cristina Gouin-Behe, John S. Hartung, and Stan C. Hokanson. 1999. Potential Sources in Strawberry for Resistance to Bacterial Angular Leafspot Disease. Abstract.

S.M. Garnsey, C.G. Behe, and B.E. Lockhart. 1998. Transmission of citrus yellow mosaic badnavirus by the citrus mealybug. Poster American Phytopathology Society annual meetings.

J.L. Smilanick, C.C. Gouin-Behe, D.A. Margosan, C.T. Bull, and B.E. Mackey. 1996. Virulence on Citrus of *Pseudomonas syringae* Strains that Control Postharvest Green Mold of Citrus Fruit. Plant Disease 80:1123-1128.

Tissue Culture Maintenance of Citrus Tristeza Virus (CTV) in Citrus explants. 1995. Cristina Gouin-Behe. University of Maryland, College Park, Horticulture Department, Masters Thesis.

Personal:

Interests include: Landscaping, gardening, body building, weight lifting, jogging, cycling, inline skating, gourmet cooking, reading, horseback riding, camping, RV'ing, hiking, canoeing, stained glass, horseshoe pitching, and crafts.

2011-present Member Muddy Creek Artists Guild – Stained glass

2000 - Competed in the **Athens to Atlanta 86 mile inline skate race** for Team In Training benefiting the Leukemia and Lymphoma society, \$3,400 raised.

1998 - **2nd Place Ms. Annapolis Lightweight Body building** competition.

1997 –1998 Member of **User Board of Directors for SportFit** Laurel Fitness and Racquet club Laurel Maryland.

1991 - 2007 - **Progressive Equestrian Therapy Services (PETS)**- assist instruction of horseback riding as therapy for emotionally and physically disabled young adults. Safety Manager on the Board of Directors since December 1996.

References:

Dr. Steve Garnsey, retired, USDA, ARS, SAA - 40635 De Luz Rd., Fallbrook, CA 92028 407-628-3172

Dr. Kathy Kamo USDA BARC 301-504-5350.

Dr. Talo Pastor-Corrales USDA BARC 301-504-0125.

David Prevar, USDA-SOHES, Bldg 003, Beltsville, MD 20705 301-504-5319