

## **Dr. Desmond R. Layne C.V. Summary "Highlights" Page**

### **Research**

#### **Publications**

Refereed Journal Articles (34); Books, Chapters or Reviews (7); Conference Proceedings/Other (21); Research Reports (32); Published Abstracts (57); Patents (1 pending); Theses (2); Theses Advised (6)  
Senior Editor, CABI Peach Book.

#### **Grants**

NSF (1 - \$11,000); USDA (8 - \$886,877); SR Small Fruit Consortium (3 - \$15,000); Industry (46 - \$187,875); CU-IPM (3 - \$22,000); CU-Internal Other (2 - \$16,000).

#### **Presentations**

Invited (75); Technical - Other (14)

### **Extension**

#### **Publications/Interviews**

Extension Bulletins (3); Extension-other (43); Grower Magazine Columns and Popular Articles (21); On-line Publications (11); Popular Press (72).

#### **Educational Programs**

Numerous and varied (see Teaching and Education sections)

#### **Websites** (2)

### **Teaching**

#### **New Course Development**

HORT 455/655 "Just Fruits" (3 Credits) Fall Semester, 2006

#### **Other Teaching, Student Mentoring and Advising**

Numerous and varied (see Teaching and Education sections)

### **Administration**

#### **Clemson University Horticulture Program Team**

Appointed Leader (effective 7/1/2006)

### **Service/Leadership**

#### **International**

President-elect, American Pomological Society  
Contributing Editor/Columnist American Fruit Grower magazine

#### **Region**

Program Chair, Southeastern Peach Convention

#### **University**

Co-Chair, CAFLS Dean Search Committee  
Secretary, Clemson University Faculty Senate  
Member, Vice-President's Cabinet

### **Awards/Honors**

Participant - 2006 LEAD21 National Leadership Training Program  
Participant - 2004 "Class 14" ESCOP/ACOP National Leadership Development Program  
2001 ASHS Outstanding Extension Publication Award

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## Curriculum Vitae of Dr. Desmond R. Layne

- I. **Name:** Desmond R. Layne
- II. **Rank:** Associate Professor
- III. **Department:** Horticulture
- IV. **Date of Employment:** August 1997
- V. **Date of Promotion:** July 1, 2003
- VI. **Date Tenure Awarded:** July 1, 2003
- VII. **Education:**



<u>Earned Degrees</u>	<u>University</u>	<u>Date of Award</u>
Ph.D.	Michigan State University Horticulture Department Emphasis: Tree Fruit Physiology	1992
M.S.	Michigan State University Horticulture Department Emphasis: Tree Fruit Physiology	1989
B.Sc. (With Honours)	Univ. of Guelph (Ontario, Canada) Horticulture Department Emphasis: Fruit Science	1986

### VIII. **Other Relevant Employment:**

**Curator**, USDA National Clonal Germplasm Repository for *Asimina* spp., Kentucky State University, Frankfort, KY 40601 (1994 - 1997). I established this repository comprising four research orchards (seedling germplasm collection, nursery/grafted tree collection, regional variety trial, and hybrid seedling orchard) totaling approximately 2800 trees, the largest collection of pawpaw germplasm in the world. We developed improved clonal and seed techniques for germplasm propagation and preservation.

**Adjunct Assistant Professor/Graduate Faculty Member**, Department of Horticulture and Landscape Architecture/College of Agriculture, University of Kentucky, Lexington, KY 40546 (1994 - 1997). Graduate student advisor and guest lecturer.

**Principal Investigator of Horticulture**, Kentucky State University, Frankfort, KY 40601 (1993 - 1997). I directed the horticultural research program at KSU. This position required developing and implementing all research projects, establishing cooperative research relationships and projects, securing extramural funding, managing program resources and personnel, and serving as the program spokesperson to communicate with all interested parties. Program personnel that I directed included one post-doctoral fellow, two full-time research technicians, one MS level graduate student, two part-time undergraduate students and one high school student (during each summer). Research projects were focused toward developing pawpaw [*Asimina triloba* (L.) Dunal] as a new commercial tree fruit crop for Kentucky and the United States. These included: i. determining optimal conditions for pawpaw seedling growth and

development; ii. characterizing the morphological and molecular variation in a diverse germplasm collection; iii. coordinating a national variety trial and development of commercial fruit production recommendations; iv. developing improved methods of clonal and seed propagation and preservation of germplasm; and v. developing an on-line computer database for pawpaw information accessible through a home page on the World Wide Web (WWW) at: <http://www.pawpaw.kysu.edu/>

**Research Plant Physiologist**, USDA Forestry Sciences Laboratory, Rhinelander, WI 54501 (1992 - 1993). Conducted growth chamber studies to examine: i. the effect of timing of drought on northern red oak (*Quercus rubra* L.) seedling growth and development; and ii. the response of northern red oak seedlings to the combined effects of drought and elevated atmospheric CO<sub>2</sub>.

**Graduate Research Assistant**, Department of Horticulture, Michigan State University, E. Lansing, MI (1986 - 1992). Graduate research projects that I conducted include the following: i. documented the physiological and biochemical responses of young, potted sour cherry trees to whole-plant source-sink manipulation; ii. established damage thresholds for trunk and leaf injury in sour cherry; iii. determined tree shape/spacing to optimize light interception and maximize yield in sour cherry orchards. In addition to graduate work on sour cherry, I collaborated with a post-doctoral associate in the Forestry department and: i. determined gas exchange response of black locust seedlings grown outdoors or in a greenhouse to light, temperature, and CO<sub>2</sub>; and ii. determined temperature effects on dark respiration and photorespiration of black locust seedlings.

**Integrated Pest Management Scout**, Ontario Ministry of Agriculture and Food, Agriculture Canada Research Station, Harrow, Ontario, CANADA (April-August, 1985). Supervised three college students. Monitored commercial apples, peaches, plums, pears, grapes, greenhouse cucumbers, and field potatoes in southwestern Ontario for insect, mite and disease infestation and damage twice weekly. Monitoring for pests included use of pheromone and sticky traps, leaf and fruit sampling, tapping and sweeping for pests and beneficials in trees, ground cover and weeds and examining tree cankers. Weather data were collected and recorded to follow and predict pest and disease threshold development. Laboratory work included pest, disease and beneficial insect identification and quantitation (i.e. mites, spotted tentiform leaf miner, scab, etc.). Managed office in supervisor's absence, including updating the Agri-phone messages for growers and writing the Weekly Hort. Report for Essex county. Collected leaf and soil samples in area vineyards. Responded to grower phone calls and questions on a daily basis. Evaluated peach trees inoculated with perennial canker (*Leucostoma* spp.) with plant pathologist, Dr. Alan Biggs. Made commercial recommendations for pesticide application based on determined threshold levels for pests/diseases.

**Research Assistant**, Western Ontario Fruit Testing Association, Agriculture Canada Research Station, Harrow, Ontario, CANADA (April-Sept. 1983, 1984). Actively participated in stone fruit breeding program by: emasculating and pollinating peach, nectarine, and apricots; planting, pruning, thinning, and harvesting peaches, apricots and nectarines; collecting budwood; inoculating and subsequent evaluation of pear trees with fireblight (*Erwinia amylovora*). Assisted in managing nursery including: transplanting and suckering seedlings; cultivating nursery; budding trees; and setting up and operating irrigation systems.

**Lifeguard**. I worked weekends as lifeguard at the pool, University of Guelph, Guelph, Ont. CANADA (Sept.-April 1982, 1983).

**Fruit Farm Laborer**. I worked at fruit farms (apples, peaches, blueberries, cherries) in Harrow, Ontario, CANADA during summers as a high school student (1977 - 1982). I pruned, thinned and removed trees, set up irrigation systems, harvested and graded fruit and vegetables, loaded trucks, etc.

**Lifeguard and Swimming Instructor**. I worked at the local beach as a summer (seasonal 1979, 1980) lifeguard and taught children's swimming lessons during the winter at the Univ. of Windsor pool.

## IX. Description of Current Duties:

**Extension Tree Fruit Specialist (30%),** I have statewide responsibilities for extension programming and serving the needs of commercial fruit growers comprising 17,000 acres of peach (my primary crop emphasis), 2,000 acres of apple and approximately 300 acres of strawberries. My extension programming involves developing regional programs for agent in-service training, providing educational programming for growers, developing extension publications for print and the web, making commercial herbicide, growth regulator, chemical thinner and nutritional spray recommendations, making on-site visits to diagnose grower problems and responding to industry concerns as expressed by phone, e-mail and FAX. I train county agents in the field and assist growers in assessing and reporting crop damage for insurance/disaster claims. I serve as an advisor to the SC Peach Council (grower organization). Further, I have developed and/or maintain web pages with information on peach and pawpaws. I also diagnose plant insect, disease and physiological problems through the Plant Problem Clinic. I serve as the primary Clemson University fruit crops contact person to the news media. I am a contributing editor and regular columnist for the American Fruit Grower magazine for stone fruit crops.

**Associate Professor of Pomology (25%),** I conduct applied and basic research that has direct application to the SC fruit industry, in particular, and to the southeastern U.S. region, in general. Recent, current and new research projects (details appear later) include examining: i. The influence of reflective film on fruit color, maturity and quality of commercial peach cultivars; ii. The influence of reflective film and ReTain on color, maturity and quality of 'Gala' apples; iii. The influence tree training system, density, rootstock, irrigation and fertility on tree growth, yield, fruit quality and labor costs for 'Redglobe' peach trees; iv. Evaluation of peach cultivars and advanced selections for suitability in SC; v. Biological control of oak root rot (*Armillaria tabescens*) in peach; vi. Assessing the usefulness of gastrodianin to engineer *Armillaria* resistant woody plants; vii. Preplant practices to manage *Armillaria* root rot disease and other soil pathogens on a commercial replant site; and viii. Genetic diversity in *Phytophthora cactorum* isolates from strawberry.

**Horticulture Program Team Leader (25%),** at the request of our Vice-President for Public Service and Agriculture, I took on this partial administrative appointment. My role is to serve on the Vice President's Cabinet as an advisor and to function as the "point person" for horticulture extension in the state. This involves leading the team comprised of all researchers, state specialists and county agents with primary responsibility in horticulture crops (this includes home horticulture and Master Gardener). I am directly responsible for working with the Field Operations Associate Dean to develop the annual EPMS (employee performance management system) objectives for all county agents with a primary horticulture assignment (34 persons). I am responsible for annual goal setting and evaluation of these individuals. I direct quarterly meetings of the team, provide direction and leadership to identify programmatic training needs for these agents, identify position needs within the state and work with the administration to fill positions (prepare job descriptions, advertise, interview, and hire). I will seek to build bridges between extension field staff and specialists on campus for multidisciplinary research projects. In addition, I developed a new on-line reporting system for all extension staff as part of my ESCOP/ACOP Leadership Training program. The prototype has been forwarded to the PSA web programmer and evaluation and testing is to begin in 2007.

**Instructor of Record (20%),** at the request of horticulture students and my department chairperson, I have developed a completely new senior/graduate course on fruit crops production entitled "Just Fruits", HORT 455/655 (3 credits). This course was taught Fall semester (2006) to 29 students (24 undergraduate, 5 graduate) on Tu/Th from 12:30-1:45 pm. It introduces students to the major tree and small fruit crops and covers the main topics including taxonomy, origin and history of cultivation, folklore, medicinal properties and nonfood use, production, botanical description, general culture, harvest and postharvest handling and use in the human diet. Grading is based on quizzes, examinations, writing assignments and oral presentations. PowerPoint lectures are posted on the course website after each lecture for student review. Course syllabus and lecture materials are available upon request.

## X. Distribution of Effort 1997 - Present:

	<u>Teaching</u>	<u>Research</u>	<u>Extension</u>	<u>Administration</u>
6/06-Present	20%	25%	30%	25%
1/06-6/06	0%	50%	50%	0%
1/03-12/05	0%	50%	50%	0%
1/02-12/02	0%	50%	50%	0%
1/01-12/01	0%	50%	50%	0%
1/00-12/00	0%	50%	50%	0%
1/99-12/99	0%	50%	50%	0%
1/98-12/98	0%	50%	50%	0%
8/97-12/97	0%	50%	50%	0%

## XI. Teaching and Related Service Activities:

Prior to the Fall 2006 Semester, I had no formal teaching appointment at Clemson. However, I always welcomed opportunities to teach - both in the classroom here on campus and in my local church. My personal philosophy is that extension is teaching, as I am extending knowledge to growers through one-on-one interaction, group educational programs, on-farm research and demonstrations, etc. Teaching is a big part of what I do as a faculty member and as a citizen. It is a great privilege and one I take most seriously and endeavor to always be well prepared, current, engaging and effective.

### Organized courses -

Horticulture 455/655 "Just Fruits". Developed and taught Fall semester, 2006.

Guest Lecturer (2003): Took two lab sections from Hort 101 class to Musser Fruit Farm to discuss fruit production in South Carolina and fruit related research to undergraduate students.

Guest Lecturer (2001, 1999): Lectured on pawpaws for Dr. Judy Caldwell's "Small Fruit" class, Hort 455, Horticulture Department, Clemson Univ.

Guest Lecturer (1994-1997): Lectured in undergraduate course HOR 402: "Fruit Crop Management" and graduate course HOR 601: "Physiological Mechanisms in Horticultural Plants" in the Department of Horticulture and Landscape Architecture, University of Kentucky for Dr. Doug Archbold.

Guest Lecturer (1995): Lectured in the undergraduate course AGRO 422: "Field Crop Production" in the Department of Agriculture, Western Kentucky University, Bowling Green, KY.

Teaching Assistant (1988, 1990): Plant Propagation (HRT 221), Department of Horticulture, Michigan State University. Prepared and taught occasional lectures. Graded examinations. Prepared and taught a weekly laboratory session. Graded laboratory reports. Instructor of record for the course was Dr. Arthur C. Cameron.

### Selected Educational Programs -

Peach Field Day: Musser Fruit Farm, July 17, 2006. I provided an educational program on our peach variety evaluation research and provided fruit samples for evaluation to more than 20 growers from SC, GA, and NC.

Workshop: I convened an international workshop on July 29, 2006 for the national American Society for Horticultural Science meeting in New Orleans, LA. The workshop was entitled "Blueberries: Now and the Future!" The workshop and fruit tasting session was attended by 75 scientists, students and others. Four world leaders in the blueberry 'field' were invited speakers. A workshop proceeding is being prepared for publication in the Journal of the American Pomological Society in 2007.

SC Farm Bureau: In July, 2005, I took nearly 50 students on a tour of Clemson University peach research orchards at the Musser Fruit Research Farm and taught them about the peach industry and how to evaluate peach quality.

Governor's Agriculture School: In July, 2004, 2005, and 2006 I took nearly 30 students on a tour of Clemson University peach research orchards at the Musser Fruit Research Farm and taught them about the peach industry and how to evaluate peach quality.

Integrated Peach Pest Management School: I provided educational training in this statewide producer education program held at the Madren Center, Clemson University, Feb. 10-12, 2004. There were more than 70 peach producers in attendance.

Conference Organized: I convened and organized the "2003 Southeastern Professional Fruit Worker's Conference" held at the Madren Center, Clemson Univ., October 15-16, 2003. This conference brought together 70 scientists, specialists, county agents and growers from 10 states to present and review fruit related research from the southeastern U.S. region.

Workshop Organized: "Low-chill fruit cultivar development for the Southeastern U.S. and the World", 2002, Southern Region American Society of Horticultural Science Meeting, Orlando, FL. I co-organized this program with Dr. John Clark, Univ. of Arkansas.

Symposium Organized: "The Information Superhighway: Applications and Implications for Science" was presented at the 1995 Kentucky Academy of Science Annual Meeting (Nov. 16, 1995, Plaza Hotel and Conv. Ctr., Bowling Green, KY). I co-organized this with Dr. Elmer Gray of WKU.

Workshop Organized: "Hands-on WWW Workshop" at the 1995 Kentucky Academy of Science Annual Meeting (Nov. 18, 1995, Western Kentucky University, Bowling Green, KY). I co-organized this with Dr. Elmer Gray of WKU.

Conference Organized: First International Pawpaw Conference, held at Western Maryland Research and Education Center (W.M.R.E.C.), Keedysville, MD, Sept. 9-11, 1994. I co-organized this conference with R. Neal Peterson of The PawPaw Foundation.

### **Other Teaching/Mentoring Experiences -**

Friday Night Bible Study Teacher (2005-Present): I teach a weekly Bible study for international students at my home. I prepared these lessons based on my own study. Recently, we completed a study of the N.T. book of James. Currently, we are working through the N.T. epistle of 1 Peter. Typical attendance is 15.

On-Campus Bible Study Teacher (2002-2005): I taught a weekly Bible study class after hours on-campus for international students. I prepared these lessons based on my own study. Our studies included "What does the Bible say about...?" focusing on key Bible doctrines. Class attendance varied from 4-8 students per week.

Sunday School Teacher (2001-2004): Adult class, University Baptist Chinese Church, Clemson, SC. I

taught a 45-minute Bible study class each week. I prepared these lessons based on my own study. We studied the Gospel of Matthew. Class attendance varied from 10-20 students per week.

Sunday School Teacher (1998 - 2000): Men's class, Welcome Baptist Church, Central, SC. I taught a weekly 45 minute Bible study class based on my own study.

Soccer Coach (1997 – 2001, 2003-2006): University Baptist Church Outreach League, Clemson, SC. I taught children ages 6-14 how to play soccer and coached a team each year. Included in the program was teaching scripture memory and an occasional Bible challenge after the games.

Sunday School Teacher (1994 - 1996): High school class, Georgetown Evangelical Free Church, Georgetown, KY. I taught a weekly 45 minute Bible study class.

Instructor (1992): High School Horticulture Program, Department of Horticulture, Michigan State University. Taught high school students how to propagate different horticultural plant species during annual Agriculture and Natural Resources Week.

Instructor (1991,1992): Trickle-Down Science Program, Department of Horticulture, Michigan State University. Taught grade 6-8 students about photosynthesis and demonstrated the use of plant physiology equipment.

Instructor (1989): Master Gardener Program, Department of Horticulture, Michigan State University. Taught Master Gardeners how to bud and graft fruit trees.

Swimming Instructor. (1979, 1980) I taught children's swimming lessons during the winter at the University of Windsor pool, Windsor, Ontario, CANADA.

### **Extension Related Activities -**

8/97-Present Extension Tree Fruit Specialist: Some of my extension related activities are summarized here but otherwise are noted elsewhere in detail. I have annually written or co-authored chemical and herbicide recommendations for the Clemson University Pest Management Handbook. I have also contributed to the Southeastern Peach, Nectarine and Plum Pest Management and Culture Guide. Each year, I make on average 30-50 on-farm grower visits to provide advice and offer solutions to problems. I have given invited talks at local, state and national grower meetings. I organize and present talks at approximately 5-6 commercial grower meetings per year in SC. I serve as an advisor to the SC Peach Council. I have secured funding for county agents to attend various in-service training opportunities in SC and the Southeastern U.S. I have established three peach variety and advanced selection trial orchards at grower farms in SC for long-term evaluation. I respond to numerous phone calls, letters, and e-mails from folks needing information on fruit culture, etc. I diagnose many physical samples and digital images submitted over the internet by county agents to the Plant Problem Clinic each year. Annually, I am interviewed by newspaper, radio and television reporters and writers for various trade and popular magazines concerning peaches, strawberries and pawpaws at various times during the year. I developed the **peach website** for growers at Clemson University. I contribute articles regularly to the on-line Southeastern Regional Peach Newsletter. I organized a peach tour for EPA Administrators from Washington, D.C. concerning re-registration of two insecticides critical to the peach industry in August, 2001. I have toured hail, herbicide, freeze and fire damaged orchards and assessed damage and reported to growers and their congressional representatives at their request. In 1999 I organized or participated in industry tours of EPA administrators (June 30, 1999) and visitors from the California Tree Fruit Agreement (July 1-2, 1999). I have regularly taken visiting professionals from various foreign countries (i.e., India, Greece, the Czech Republic, South Africa, Italy and China) on tours of facilities and grower operations in the region. I assisted the SC peach growers in securing a "Special Local Needs" 24C label for Dormex - a material used to break dormancy in peach trees. This was particularly important

due to the perceived lack of chilling hours resulting from the warm winter of 1999. In 1997, shortly after I arrived at Clemson, I served on a Fruit Vision Team (scientists, county agents, growers, packers) to assist in preparation of a report including specific goals and objectives for the Fruit Program at Clemson and a clear vision and mission statement. I participated in a Fruit Program Review (Dec. 1-4, 1997).

1993-Present International Pawpaw Expert: I respond to phone calls, e-mails, faxes, and letters from persons across the U.S., Canada, and more than a dozen foreign countries seeking information, recommendations and advice on pawpaws. Since 1996, I have sent out extension literature to over 3000 individual requests. I have interacted on the phone or in person with state and national members of Congress, the KY Commissioner for Natural Resources, processing companies, growers, and entrepreneurs. I have been interviewed numerous times per year for reports and articles in local, state and national newspapers, magazines, radio and television directed toward growers and the general public, etc. Highlights (noted later) included a radio interview featured on NPR's "All Things Considered", a TV interview featured on ABC's "World News Tonight with Peter Jennings" and interviews for articles published in National Geographic and Popular Science magazines. I have given invited lectures on pawpaws to diverse audiences across the country and in China. I have developed pawpaw extension literature and conceptualized the preparation of a WWW Home page (at K.S.U.) and on-line database with pawpaw information for scientists, county agents, commercial growers, home gardeners, and laypersons (WWW url: <http://www.pawpaw.kysu.edu>).

1994-1997 Research Updates/Tours (K.S.U.): I spoke to various groups about our pawpaw research including: Soil Conservation Service; Kentucky Organic Growers; K.S.U. Small Farm Agents; Sustainable Farm Management Workshops, etc.

### **Advising, Mentoring and Training:**

#### Graduate Student Advising (at Clemson University):

Graduate Committee Member (2005-2006): **Ms. Alexis Nagel** began a M.S. program in Plant and Environmental Science.

Graduate Committee Member (2004-2006): **Ms. Karen Bussey** completed a M.S. program in Plant and Environmental Science. I served on her advisory committee.

Graduate Committee Member (2000-2003): I served on the M.S. committee of **Mr. Samuel Njoroge** in the department of Horticulture. He completed his M.S. program in 2003.

Graduate Committee Member (2000-2002): I served on the M.S. committee of **Ms. Veronda Holcombe** in the department of Horticulture. Veronda completed her M.S. program in 2002.

Graduate Committee Member (1999-2002): I served on the Ph.D. committee of **Ms. Teresa Cerny** in the department of Horticulture. Teresa completed her Ph.D. program in 2002.

Graduate Committee Member (1997-2000): I served on the Ph.D. committee of **Mr. Phil Gibson** in the department of Horticulture. Phil completed his Ph.D. program in 2000.

#### Student Employees (at Clemson University):

I directed **Ms. Courtney McClive** and **Mr. Stephen Layne**, Clemson undergraduate and high school student who assisted us with our peach evaluation and systems trial research at the Musser Tree Fruit Farm during the summers of 2005 and 2006.

I directed **Mr. Barry Jones, III**, who was a MS e-Commerce student at Clemson University. Barry assisted me in revamping my the peach website and adding a searchable database.

I directed **Ms. Courtney McClive** and **Mr. Donnie Dinch**, Clemson undergraduate students who assisted us with our peach evaluation and systems trial research at the Musser Tree Fruit Farm during the summer of 2004.

I directed **Ms. Courtney McClive** and **Mr. Rusty Curry**, Clemson undergraduate students who assisted us with our peach evaluation and systems trial research at the Musser Tree Fruit Farm during the summer of 2003.

I directed **Ms. Sirisha Saripalli**, a MS Industrial Engineering graduate student, on updating and

redesigning my peach website during summer/fall of 2002.

I directed **Mr. Mark Ables**, BS Business undergraduate student who assisted us with our peach evaluation and systems trial research at the Musser Tree Fruit Farm in the summer of 2002.

#### Visiting Research Scientists in My Lab:

**Dr. Hongwen Huang**, Director and Professor, Wuhan Institute of Botany, Wuhan, Hubei, P.R. China. Dr. Huang worked in my program from August, 2001 - March, 2002. He worked on a joint project with Drs. Schnabel and Jeffers in the Plant Pathology and Physiology Department examining the genetic diversity of *P. cactorum* on strawberry. Dr. Huang also worked in my lab at KY State Univ. on the USDA 1890 Institution Capacity Building grant "Characterization of the geographic, morphological, and molecular variation in *Asimina triloba*" from January, 1996 through March, 1997. Also during this time we collaborated on some kiwi genetic studies.

**Mr. Zhengwang Jiang**, Wuhan Institute of Botany, Wuhan, Hubei, P.R. China. Mr. Jiang worked from July, 1998 - January, 2000 as a visiting scientist in my lab. He was actively involved in research utilizing reflective films and their effect on peach and apple in SC in collaboration with Dr. Jim Rushing of our Horticulture Department.

#### Research Technicians in My Lab:

**Eric Hitzler** (June, 2002 - May, 2005).

**Duncan Cox** (May, 2000 - May, 2002).

**S.C. Jones** (October, 1995 - July, 1997).

**Eddie B. Reed, Jr.** (October, 1995 - July, 1997).

**Michael G. Kwantes** (January, 1994 - May, 1995).

Adjunct Assistant Professor (1995-1997): I participated in weekly laboratory group meetings with faculty (Dr. Robert L. Geneve) and graduate students in the Dept. of Horticulture and Landscape Architecture, University of Kentucky, where we discussed journal articles, experimental design methods, data analysis techniques, data presentation methods, current research projects, etc.

Major Professor (1995-1997): advised **Cindy Finneseth** for MS degree (May, 1997) in Horticulture, Dept. of Horticulture and Landscape Architecture, University of Kentucky. Thesis: "Propagation of the North American Pawpaw [*Asimina triloba* (L.) Dunal]", 152p.

Research Advisor (1994-1997): directed 4 minority undergraduate students at K.S.U. in Biology 410 "Independent Research Topics" course. Students and respective projects included:

**Terrih Turner** (1996-1997): Development of a computer database of pawpaw nurseries across the U.S. and a survey concerning their operations.

**Sherisse Larkin-McMillon** (1995-1996): The influence of bottom-heat preconditioning and fertilization on post-transplanting growth and development of pawpaw seedlings grown in the greenhouse.

**Dia Prince** (1994): Leaf development of pawpaw: age effects on chlorophyll content and leaf area.

**Otis Mitchell** (1993): The influence of bottom-heat temperature on pawpaw seedling growth and development.

Research Advisor (1993-1997): directed and trained five undergraduate students at K.S.U. who worked part-time as research assistants to the horticulture program.

Research Mentor (2001): directed **Kyle Patrick**, Pickens County High School student in South Carolina Governor's School for Science and Mathematics Summer Program for Research Interns (SPRI).

Research Mentor (1994-1996): directed minority high school students involved in the USDA 1890 Research Apprenticeship (RAP) Summer Program. Students and respective projects included:

**Nikki Peters** (1996): The influence of shade and root-zone modification on early growth and development

of pawpaw seedlings.

**LaKeasha Jones** (1995): Characterization of diverse pawpaw germplasm collection utilizing physiological and conventional techniques.

**LaKeasha Jones** (1994): The influence of incident light intensity and fertilization on pawpaw seedling growth and development.

## XII. Hatch Research Projects

<u>Project Number</u>	<u>Title</u>	<u>Time Assigned to Project</u>
CRIS# 0195046 SCAFRS# SC1700239	Strategies for improving productivity and profitability of the SC peach industry.	.50
CRIS# 0181595 SCAFRS# SC01906	Improving fruit quality and yield of peach and apple orchards in the southeastern U.S.	.50
<u>At Kentucky State University, Frankfort, KY:</u>		
USDA95-38814-1721	A Centralized Research Support System for <i>Asimina</i> Germplasm and Information. 1995-1997.	.10
KYX-10-97-28P	Development of Pawpaw as a New Commercial Crop. (1997)	.70

## XIII. Record of Scholarly Work

### A. Publications:

#### Refereed Journal Articles:

#### Published. (34)

**34.** Schnabel, G., **D.R. Layne**, and I. Holb. 2006. Micronized and non-micronized sulfur sprays control peach scab equally well with negligible impacts on fruit quality. *Annals of Applied Biology*. (accepted with revisions).

**33.** Cox, K., **D.R. Layne**, R. Scorza, and G. Schnabel. 2006. Gastrodia anti-fungal protein (GAFP) from the orchid *Gastrodia elata* confers broad-spectrum root disease tolerance in transgenic tobacco. *Planta* 224:1373-1383. (also available *on-line* at <http://www.springerlink.com/content/240538n6m8932808/fulltext.html>).

(Note <http://www.bioscience.org/services/impact15.htm> Impact factor = 3.32)

**32.** Wang, Y., G.L. Reighard, **D.R. Layne**, A.G. Abbott, and H. Huang. 2005. Inheritance of AFLP markers and their use for genetic diversity analysis in wild and domesticated pawpaws (*Asimina triloba*). *J. Amer. Soc. Hort. Sci.* 130(4):561-568.

**31.** Faust, J.E., V. Holcombe, N.C. Rajapakse, and **D.R. Layne**. 2005. The effect of daily light integral on bedding plant growth and flowering. *HortScience*. 40(3):645-649.

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**Layne, D.R.** 2007. The influence of tree density, training system, irrigation and fertilization on growth and fruit production of 'Redglobe' peaches in South Carolina. *HortScience* (in preparation).

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**4. Layne, D.R.** 2006. Peach. *The South Carolina Encyclopedia*. Univ. of South Carolina Press, Columbia, SC. (This was an invited contribution). pp. 706-707.

**3.** Pomper, K.W. and **D.R. Layne**. 2005. The North American pawpaw: botany and horticulture. *Horticultural Reviews* 31:351-384. (This was an invited comprehensive review).

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#### **Manuscripts in Press (2).**

**2.** Pomper, K.W. and **D.R. Layne**. 2007. Pawpaw. In: A.F. Smith (Ed.), *Encyclopedia of American food and drink*. Oxford Univ. Press, NY.

**1.** Pomper, K.W. and **D.R. Layne**. 2007. American/Mountain Pawpaw. In: J. Janick (Ed.), *The Encyclopedia of Fruits and Nuts*. CABI Publishing, UK.

#### **In Preparation (1).**

**Senior Editor:** I was invited to lead this project to develop a comprehensive international research volume entitled: **"The Peach: Botany, Production and Uses"** for CABI Publishing, UK (<http://www.cabi-publishing.org>). I have enlisted a total of 46 world authorities to write 21 chapters for this premier and definitive text due on the market in 2007.

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**56.** \*Pomper, K.W., S.B. Crabtree, and **D.R. Layne.** 2006. Early flower bud production and field establishment of two pawpaw cultivars on five seedling rootstocks. *HortScience* 41(4):1039.

**55.** \***Layne, D.R.** and G. Schnabel. 2006. Preplant practices to manage *Armillaria* root rot disease and other soil pathogens on a commercial peach replant site. *HortScience* 41(4):1028.

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**53.** Zeng, G., S. Birchfield, C.E. \*Wells, and **D.R. Layne.** 2006. Automatic detection of fine roots in minirhizotron images. *HortScience* 41(4):996.

**52.** \*Cox, K., **D.R. Layne,** R. Scorza, and G. Schnabel. 2005. Evaluation of gastrodianin anti-fungal protein (GAFP) in transgenic tobacco - a first step in the development of a root disease tolerant rootstock for *Prunus* sp. *Proc. ISHS International Symposium on Biotechnology of Temperate Fruit Crops and Tropical Species (Oct. 10-14, 2005)*. p.32.

**51.** Schnabel\*, G. and **D.R. Layne.** 2005. Impact of reduced fungicide and sulfur-based fungicide programs on scab control and fruit quality in peach. *Phytopathology* 95:S93.

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- 42. Wells\***, C.E. and **D.R. Layne**. 2003. Peach fine root dynamics under three irrigation/fertilization regimes. *HortScience* 38(5):739.
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- 31. Pomper\***, K.W., **D.R. Layne**, R.N. Peterson, and D. Wolfe. 2001. The pawpaw regional variety trial: background and early data. *Program and Abstracts, The Second International Pawpaw Conference, Sept. 21-22, 2001, Kentucky State University, Frankfort, KY. p. 12.*
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## Local

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"Way down yonder in the pawpaw patch", *Intelligencer Journal*, Lancaster, PA, Food Section C1&3, October 2, 1996.

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"Pawpaw: The fruit tree of the future". *The Floyd County Times*, Prestonsburg, KY, Up a Tree Section, June 5, 1996.

"Pawpaw tree discussed at PCC", *The Weekly Progress*, Prestonsburg, KY, Section B:7; May 29, 1996.

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"The finer points of pawpaws", *The Thorobred News* (Kentucky State University newspaper, November 1, 1995, p.1, 11.

"College to grow, study unusual fruit", *Kentucky New Era*, Section C:6, October 26, 1995.

"University to grow and study pawpaw plants", *Corbin Times Tribune*, Corbin, KY, Oct. 25, 1995, p.3.

"Pickin' Up Pawpaw's", *Journal and Courier*, Lafayette-West Lafayette, IN. Section B1: March 13, 1995.

"Going bananas: Love it or hate it, pawpaw's one 'sexy species'", *The Windsor Star*, Windsor, Ont., Canada, Section A:3, Oct. 20, 1994.

"Pawpaw breeders hope native fruit can be improved", *The State Journal*, Frankfort, KY, Section A:10, Oct. 8, 1993.

## **B. Oral Presentations**

### Invited Lectures and Presentations (75)

**75.** "The South Carolina Peach Industry and Clemson's Peach Research Program", President Jim Barker's Council meeting, Clemson University, September 11, 2007.

**74.** "New selections of yellow-fleshed peaches suitable for South Carolina growers", Peach Update Meeting, March 16, 2006, Ridge Spring, SC.

**73.** "White fleshed peaches and nectarines suitable for the Southeastern U.S.A.", Peach Production Update Meeting, Feb. 23, 2006, Gaffney, SC.

**72.** "Opportunities with white peaches", Commercial Apple/Peach Producer Meeting, Feb. 21, 2006, Walhalla, SC.

**71.** "Peach systems trial: first four years of production", Southeastern Peach Convention, Jan. 7, 2005, Savannah, GA.

**70.** "Peach cultivar evaluations in South Carolina and web site features", Southeastern Peach Convention, Jan. 7, 2005, Savannah, GA.

**69.** "Clemson peach systems trial research", Chilton Area Peach Conference, Jan. 25, 2005, Clanton, AL.

**68.** "Clemson peach variety evaluations and website", Chilton Area Peach Conference, Jan. 25, 2005, Clanton, AL.

**67.** "Peach varieties suitable for higher elevations", Peach Field Day, Musser Fruit Research Farm, Clemson University, July 27, 2004, Seneca, SC.

**66.** "Peach variety selection and website", Commercial Apple/Peach Producer Meeting, Monday, March 8, 2004, Seneca, SC.

**65.** "Peach variety selection and website", Peach Production Update Meeting, Thursday, March 4, 2004, Gaffney, SC.

**64.** "Peach variety selection", Integrated Peach Pest Management School, Feb. 10-12, 2004, Clemson, SC.

- 63.** "Peach varieties for the southeastern U.S." 2004 Southeastern Peach Convention, Jan. 9-11, 2004, Savannah, GA.
- 62.** "Scientific "bridge-building" with China", Department of Horticulture Spring Seminar Series, Clemson University, March 28, 2003.
- 61.** "Oak root rot: a serious disease in the southeastern United States.". USDA-ARS Appalachian Fruit Research Station, Kearneysville, WV, March 18, 2003. I was co-author of talk presented by G. Schnabel.
- 60.** "Peach germplasm and the peach genome project at Clemson University", Forestry and Horticultural College, Henan Agricultural University, Zhengzhou, Henan, P.R. China, February 26, 2003.
- 59.** "Peach orchard systems management trial", Forestry and Horticultural College, Henan Agricultural University, Zhengzhou, Henan, P.R. China, February 26, 2003.
- 58.** "Peach germplasm and the peach genome project at Clemson University", Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences, Zhengzhou, Henan, P.R. China, February 25, 2003.
- 57.** "Peach orchard systems management trial", Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences, Zhengzhou, Henan, P.R. China, February 25, 2003.
- 56.** "Peach germplasm and the peach genome project at Clemson University", Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, Hubei, P.R. China, February 24, 2003.
- 55.** "Oak root rot disease management and new research", Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, Hubei, P.R. China, February 24, 2003.
- 54.** "Peach orchard system management trial", Department of Pomology, Huazhong Agricultural University, Wuhan, Hubei, P.R. China, February 24, 2003.
- 53.** "Peach cultivar and advanced selection evaluations and Clemson peach web site", Southern Pines Peach Meeting, Pinehurst, NC, Jan. 28, 2003.
- 52.** "Management of peach orchards: training, density, irrigation and fertilization", Southern Pines Peach Meeting, Pinehurst, NC, Jan. 28, 2003.
- 51.** "Peach variety and advanced section evaluations from 2002", Southeastern Peach Convention, Savannah, GA, Jan. 10-12, 2003.
- 50.** "Sustainable Fruit Production: Clemson's Research and Extension Efforts", Sustainable Agriculture, Forestry and Horticulture Futures Conference, Feb. 22-25, 2002, Clemson, SC.
- 49.** "Orchard systems", 2002 Southeastern Peach Convention, January 11-13, 2002, Savannah, GA.
- 48.** "Preharvest factors that influence color management", 2002 Southeastern Peach Convention, January 11-13, 2002, Savannah, GA.
- 47.** "Faculty Professional Homepage" with John Clemens, CU-AIMS, Department of Horticulture Seminar, Clemson University, April 20, 2001.
- 46.** "Reflective film improves color of peaches and apples in SC", 2000 Ag. Expo., Columbia, SC: January 11, 2000.

45. "Results of 1999 studies with reflective films", 2000 Fruit and Vegetable Winter Conference, Savannah, GA: January 8, 2000.
44. "Influence of reflective film and ReTain on color and maturity of 'Gala' apples in South Carolina", 2000 Southeastern Apple Growers Meeting, Asheville, NC: January 6, 2000.
43. "Reflective film improves color in South Carolina peaches and apples", Department of Horticulture Fall Seminar Series, Clemson University, Clemson, SC: November 19, 1999.
42. "Reflective film improves apple color", Oconee County Apple Meeting, Long Creek, SC: April 1, 1999.
41. "Peaches are redder with reflective film", Peach Update Meeting, Gaffney, SC: March 11, 1999.
40. "Reflective film and potential for peach growers in GA", Middle Georgia Peach Update Meeting, Byron, GA: February 4, 1999.
39. "Influence of reflective film on skin color and fruit maturity in late season peaches", 1999 National/Southeastern Peach and Roadside Market Convention, Myrtle Beach, SC: January 24, 1999.
38. "Impact of reflective film on peaches and apples", 1999 Ag. Expo, Columbia, SC: January 12, 1999.
37. "Low, medium and high-density training systems for peach", South Georgia–North Florida Peach Meeting, Madison, FL: Dec. 3, 1998.
36. "Reflective film enhances color of 'Cresthaven' and 'Encore' peaches in South Carolina", South Georgia – North Florida Peach Meeting, Madison, FL: December 3, 1998.
35. "Tree training options and reflective film studies", Regional Agent In-Service Training, Edgefield, SC: August 12, 1998.
34. "Pawpaw: an uncommon fruit for the next century", State Master Gardener Training Conference, Clemson University, Clemson, SC: May 14, 1998.
33. "Peach research and production practices in California - an overview", Cherokee County Peach Update meeting, McBee, SC: March 4, 1998.
32. "Peach research and production practices in California - an overview", Spartanburg County Peach Update meeting, Gaffney, SC: Feb. 23, 1998.
31. "Peach tree nutrition: a refresher course", Regional Peach Meeting, Edgefield, SC: Feb. 18, 1998.
30. "High density, pruning and other cultural practices to improve yield and quality of peaches", York County Peach Update meeting, York, SC: Feb. 17, 1998.
29. "China - a first timer's perspective", Department of Horticulture Winter Seminar Series, Clemson University, Clemson, SC: January 30, 1998.
28. "Peach tree pruning and training - conventional and higher density systems", SC Extension Pruning and Training Workshop, Civic Center, Ridge Spring, SC: January 20, 1998.
27. "Tree training options - perpendicular V, 4-scaffold vase, open vase?", National Peach/Vidalia Onion and Roadside Marketing Convention, Savannah, GA: January 19, 1998.

26. "Stone fruit production in the central valley of California, updates and highlights", SC Peach Seminar, Edgefield County Extension Office, Edgefield, SC: Nov. 4, 1997.
25. "Pawpaw: a new fruit crop for American farmers", Horticulture club of Clemson University, Clemson, SC: October 29, 1997.
24. "Everything you always wanted to know about pawpaws but were afraid to ask", California Rare Fruit Growers Association Annual 'Festival of Fruits' Meeting, Arcadia, CA: October 4, 1997.
23. "Higher education and opportunities in the U.S.", English Salon, Wuhan Institute of Botany, The Chinese Academy of Sciences, Moshan, Wuchang, Wuhan city, Hubei, The People's Republic of China: May 7, 1997.
22. "The Pawpaw: research efforts toward development as a new fruit crop", Department of Horticulture, Huazhong Agricultural University, Wuhan, Hubei, The People's Republic of China: May 6, 1997.
21. "The Pawpaw: research efforts toward development as a new fruit crop", Wuhan Institute of Botany, The Chinese Academy of Sciences, Moshan, Wuchang, Wuhan city, Hubei, The People's Republic of China: May 5, 1997.
20. "The Pawpaw: potential as a new crop and landscape plant for Kentucky", Kentucky Garden Club Annual Meeting, Bowling Green Convention Center, Bowling Green, KY: April 16, 1997.
19. "The Pawpaw: research efforts toward development as a new fruit crop", Department of Horticulture Seminar, Clemson University, Clemson, SC: April 3, 1997.
18. "The Pawpaw: a potential new fruit crop for Michigan farmers", Annual Agriculture and Natural Resources Week Meeting, Michigan State University, E. Lansing, MI: March 8, 1997.
17. "Pawpaws for Kentucky farmers: outlook for the future", Shelbyville Rotary Club, Shelbyville, KY: February 25, 1997.
16. "Pawpaw production in Kentucky", Sustainable Farm Management Workshop, K.S.U. Research Farm: February 20, 1997.
15. "Pawpaws for Kentucky farmers: outlook for the future", Frankfort Rotary Club, Frankfort, KY: January 22, 1997.
14. "Pawpaw: A new fruit crop for Kentucky", Kentucky Nut Growers Association Meeting, Georgetown, KY: Oct. 26, 1996.
13. "The Pawpaw: research efforts toward development as a new fruit crop", Department of Horticulture Seminar, Purdue University, W. Lafayette, IN: Sept. 25, 1996.
12. "Research efforts to develop pawpaw as a new fruit crop", Northern Nut Growers Annual Meeting, University of California, Davis: Aug. 13, 1996.
11. "The Pawpaw tree: the 21<sup>st</sup> century fruit", Division of Biological Sciences and Related Technologies, Prestonsburg Community College, Prestonsburg, KY: May 1, 1996.
10. "Pawpaw research at Kentucky State University", Kentucky State University Biology Area Seminar Series, Division of Math and Sciences, Frankfort, KY: March 8, 1996.

9. "Everything about pawpaw [*Asimina triloba* (L.) Dunal]", USDA-ARS Fruit Lab Seminar, Beltsville, MD: Jan. 19, 1996.
8. "Pawpaws: A new fruit crop for Kentucky and the United States", National Audubon Society, Kentucky Chapter, Frankfort, KY: Nov. 28, 1995.
7. "Pawpaws for Kentucky", Kentucky State Horticultural Society and Vegetable Growers Assoc. Annual Meeting, Lexington, KY: Feb. 9, 1995.
6. "Early enhancement of pawpaw seedlings", First International Pawpaw Conference, Western Maryland Research and Education Center, Keedysville, MD: Sept. 9, 1994.
5. "Tart cherry production and research", Kentucky State Horticultural Society and Kentucky Vegetable Growers Association Annual Meeting, Lexington, KY: Dec. 2, 1993.
4. "Physiological studies in sour cherry, northern red oak, and pawpaw: past, present, and future", Department of Horticulture and Landscape Architecture Fall Seminar Series, Univ. of Kentucky, Lexington, KY: Sept. 29, 1993.
3. "Physiological responses of *Prunus cerasus* to whole-plant source-sink manipulation", Department of Horticultural Science Seminar, Cornell University, Geneva, NY: June 2, 1992.
2. "Damage thresholds for trunk and leaf injury in 'Montmorency' sour cherry", Hudson Valley Laboratory Seminar, Cornell University, Highland, NY: June 1, 1992.
1. "Physiological responses of *Prunus cerasus* to whole-plant source-sink manipulation", USDA Forestry Sciences Laboratory Seminar, Rhinelander, WI: Feb. 18, 1992.

**Technical Society Presentations: (14)**

NOTE: I made all oral presentations for published abstracts noted previously (Section XIII) where there is an asterisk (\*) beside my name. Some presentations were posters that did not result in a published abstract as noted below:

14. Layne, D.R. 2006. Peach orchard systems management trial. Southeastern Peach Convention, Jan. 6-8, 2006, Savannah, GA.
13. Layne, D.R. and G. Schnabel. 2006. Preplant practices to manage oak root rot disease (*Armillaria* spp.) and other soil pathogens on a commercial replant site. Southeastern Peach Convention, Jan. 6-8, 2006, Savannah, GA.
12. Layne, D.R. and W.R. Okie. 2006. White fleshed peaches and nectarines for the southeastern USA. Southeastern Peach Convention, Jan. 6-8, 2006, Savannah, GA.
11. "Peach variety evaluations and website", Southeastern Professional Fruit Worker's Conference, Clemson, SC. October 16, 2003.
10. "Peach systems trial – first four years", Southeastern Professional Fruit Worker's Conference, Clemson, SC. October 16, 2003.
9. "Fine root dynamics under irrigated and non-irrigated peach trees" Southeastern Professional Fruit Worker's Conference, Clemson, SC. October 15, 2003. (co-author on talk presented by C.E. Wells).

8. "SC Peach variety evaluations for 2002: Including selections from the Clemson and Byron Peach Breeding Programs", Byron, GA. October 9, 2002.
7. "Monitoring peach feeder root production under three irrigation/fertilization regimes", Byron, GA. October 10, 2002. (I am co-author on this paper that was given by Dr. Christina Wells.
6. "Peach variety evaluations: 2001 results", Southeastern Professional Fruit Workers Conference, Fletcher, NC. September 18, 2001.
5. "Peach systems trial: 2001 data", Southeastern Professional Fruit Workers Conference, Fletcher, NC. September 18, 2001.
4. "Peach systems trial and irrigation scheduling", Southeastern Professional Fruit Worker Meeting, McMinnville, TN: September 20, 2000.
3. "Peach variety evaluation and web site development", Southeastern Professional Fruit Worker Meeting, McMinnville, TN: September 21, 2000.
2. "The influence of reflective film on color and maturity of peaches in South Carolina", Southeastern Professional Fruit Worker Meeting, Columbiana, AL: October 5, 1999.
1. "The influence of reflective film on color and maturity of apples in South Carolina", Southeastern Professional Fruit Worker Meeting, Columbiana, AL: October 5, 1999.

### **C. Web Site Development (2)**

#### **2. Clemson University Peach Web Site**

I developed and maintain a website with peach information and links for SC peach growers (<http://www.clemson.edu/hort/peach/index.php>). It has evaluation information on over 300 varieties and advanced selections over 6 years and 3 locations in the state. It has a completely searchable database including digital photos, variety descriptions, etc. It is used by growers all over the U.S.A.

#### **1. Kentucky State University Pawpaw Web Site**

I secured federal grant funds and developed infrastructure and conceptual design for KSU's pawpaw web site (<http://www.pawpaw.kysu.edu>). This website was launched shortly after I left KSU and came to Clemson Univ.

## **XIV. Grants and Proposals** (proposals submitted but not funded are not listed)

My CRIS (or Hatch) project entitled "Strategies for improving productivity and profitability of the SC peach industry" was approved in Washington, D.C. and began effective July 1, 2003. CRIS Accession No. is 0195046 and SCAFRS Project No. is SC-1700239.

**Note:** My CRIS (or Hatch) project entitled "Improving fruit quality and yield of peach and apple orchards in the southeastern U.S." was approved in 1999. CRIS Accession No. is 0181595 and SCAFRS Project No. is SC01906. This project ended June 30, 2003.

**N.S.F. Multi-User Biological Equipment and Instrumentation Competitive Grant Program (1;\$11,000)**

A FY94 proposal entitled "Acquisition of High Performance Liquid Chromatography Equipment" **was funded at \$11,000** (in cooperation with Drs. Webster, Weston, Mims and Byers at K.S.U.).

**USDA-NRI Grants Program (1; \$74,000)**

A FY2002 proposal entitled "The usefulness of gastrodianin to engineer *Armillaria* resistant woody plants" **was funded for \$74,000 for 2 years**. Dr. Guido Schnabel and I are co-principal investigators. Dr. Ralph Scorza, USDA-ARS, Kearneysville, WV is collaborator.

**USDA-Special Grant (4; \$86,945)**

A FY2006-2007 proposal entitled "Peach tree short life in South Carolina", **was funded at \$212,981 for 1 year**. I am co-investigator on this grant with Drs. Wells, Schnabel, Kluepfel and Reighard. My personal portion of the award is \$23,428.

A FY2005-2007 proposal entitled "Peach tree short life in South Carolina", **was funded at \$247,238 for 1 year**. I am co-investigator on this grant with Drs. Wells, Schnabel, Kluepfel and Reighard. My personal portion of the award is \$27,398.

A FY2004-2006 proposal entitled "Peach tree short life in South Carolina", **was funded at \$217,299 for 1 year**. I am co-investigator on this grant with Drs. Wells, Schnabel, Kluepfel and Reighard. My personal portion of the award is \$17,501.

A FY2003-2005 proposal entitled "Peach tree short life in South Carolina", **was funded at \$243,324 for 1 year**. I am co-investigator on this grant with Drs. Wells, Schnabel, Kluepfel and Reighard. My personal portion of the award is \$18,618.

**USDA-CSREES Southern Region IPM Grants Program (2; \$151,000)**

A FY2005 proposal entitled "Novel approaches to integrated management of *Armillaria* root rot in peach" **was funded for \$151,000 for 2 years**. I am co-investigator on this grant with Drs. Guido Schnabel and Kerik Cox. at Clemson Univ.

A 1999-2001 proposal entitled "Improving pest and disease monitoring and demonstrating integrated pest management in peaches" **was funded at \$215,357 for 3 years**. I was a regional cooperater on this multi-state IPM grant but did not receive direct funding.

**USDA Capacity Building Competitive Grants Program (2; \$574,932)**

A FY97 proposal (#97-33814-4156) entitled "Molecular genetic characterization, evaluation and enhancement of pawpaw germplasm" **was funded at \$298,615 for 3 years**. NOTE: Proposal ranked **third** out 16 funded research proposals (120 submitted). I was sole PI on this grant while at KSU. It was inherited by my successor, Dr. Kirk Pomper, after I came to Clemson University.

A FY95 proposal (#95-33814-1721) entitled "A centralized research support system for *Asimina* germplasm and information" **was funded at \$276,317 for 3 years**. NOTE: Proposal ranked **first** out 18

funded research proposals (119 submitted). I was sole PI on this grant while at KSU. It was inherited by my successor, Dr. Kirk Pomper, after I came to Clemson University.

### **Southern Region Small Fruit Consortium Grants Program (3; \$15,000)**

A 2003 proposal entitled "Evaluation of reduced sensitivity of southeastern U.S. *Phytophthora cactorum* isolates to metalaxyl (Ridomil Gold)" **was funded at \$5,000 for one year**. I am research collaborator on this grant submitted by Dr. Guido Schnabel (Plant Path. and Physiol.) with another collaborator, Dr. Steve Jeffers (Plant Path. and Physiol.).

A 2002 proposal entitled "Fingerprinting *Phytophthora cactorum* isolates from SC and other states" **was funded at \$5,000 for one year**. I was research collaborator on this grant submitted by Dr. Guido Schnabel (Plant Path. and Physiol.) with another collaborator, Dr. Steve Jeffers (Plant Path. and Physiol.).

A 2001 proposal entitled "Genetic diversity of *Phytophthora cactorum* isolates from SC and other states in the U.S." **was funded at \$5,000 for one year**. I was research collaborator on this grant submitted by Dr. Guido Schnabel (Plant Path. and Physiol.) with another collaborator, Dr. Steve Jeffers (Plant Path. and Physiol.).

### **Southern Region SARE Grants Program**

A 2004 proposal entitled: "The Southern region organic fruit production initiative: identifying barriers, needed research, markets and opportunities" **was funded at \$17,555 for one year**. I served as SC cooperator for fruit crops but did not receive direct funding. Proposal was developed and submitted by Dr. C.R. Rom, Univ. of Arkansas.

### **North American Strawberry Grower's Association (1; \$5,000)**

A 2001 proposal entitled "Identification of the source of *Phytophthora cactorum* infections in strawberry fields" **was funded at \$5,000 for one year**. I was research collaborator on this grant submitted by Dr. Guido Schnabel (Plant Path. and Physiol.) with another collaborator, Dr. Steve Jeffers (Plant Path. and Physiol.).

### **CU-IPM Grants Program (3; \$22,300)**

A 2005 proposal entitled "Development of an IPM program for Armillaria root rot disease of stone fruit" in collaboration with Drs. Guido Schnabel and Kerik Cox **was funded at \$4,800 for one year**.

A 2002 proposal entitled "Biological control of oak root rot with *T. harzianum* and non-pathogenic *Armillaria* species" in collaboration with Dr. Guido Schnabel (co-principal investigator) **was funded at \$7,500 for one year**.

A 2001 proposal entitled "Biological control of oak root rot and nematodes" in collaboration with Dr. Guido Schnabel (co-principal investigator) **was funded at \$10,000 for 1 year**. This was the #1 ranked proposal. Funding was a combination of \$10,000 from CU-IPM and a matching grant from the SC Peach Council (see below).

### **International Society of Arboriculture Research Trust: John Z. Duling Grant Program (1; \$5,000)**

A 2001 proposal entitled "Fungicidal activity of gastrodianin to pathogenic *Armillaria* sp. from North America" **was funded for \$5,000 for 1 year**. I was co-investigator on this proposal with Dr. Guido Schnabel in Plant Pathology.

### **South Carolina Peach Council (40 funded for \$162,700)**

A 2007 proposal entitled "Peach and nectarine evaluation and website" was submitted with funding consideration of \$8000 for one year. Dr. W.R. Okie is co-investigator on this project

A 2007 proposal entitled "Multiyear evaluation of Remedier for oak root rot control of peach" was submitted for funding consideration of \$6000 for one year. I am co-principal investigator with Dr. Guido Schnabel on this project.

**40.** A 2006 proposal entitled "Peach and nectarine evaluation and website" **was funded for \$4,000 for one year**.

**39.** A 2005 proposal entitled "Timing of fertilizer application in relation to feeder root activity" was submitted by Dr. Christina Wells and I am co-PI on this grant. The request **was funded at \$3,000 for one year**.

**38.** A 2005 proposal entitled "Development of transgenic oak root rot resistant rootstocks" was submitted by Dr. Guido Schnabel with Dr. Kerik Cox and I as Co-PI's. The request **was funded at \$7,000 for one year**.

**37.** A 2005 proposal entitled "Preplant practices to manage oak root rot disease (*Armillaria* spp.) and other soil pathogens on a commercial replant site" was submitted with Dr. Guido Schnabel as co-PI **was funded at \$1,000 funding for one year**.

**36.** A 2005 proposal entitled "Orchard systems management trial" **was funded at \$4,000 funding for one year**.

**35.** A 2005 proposal entitled "Peach and nectarine evaluation and website" was submitted with Dr. Dick Okie, USDA-ARS, as co-PI **was funded at \$4,000 funding for one year**.

**34.** A 2004 proposal entitled "Timing fertilizer application in relation to feeder root activity" was submitted with C.E. Wells as co-PI and **was funded at \$3,000 for one year**.

**33.** A 2004 proposal entitled "Preplant practices to manage oak root rot disease on a commercial replant site" was submitted with G. Schnabel and C.E. Wells as co-PI's and **was funded at \$4,000 for one year**.

**32.** A 2004 proposal entitled "Orchard systems management trial" was submitted with E.J. Hitzler as co-I and **was funded at \$5,000 for one year**.

**31.** A 2004 proposal entitled "Peach and nectarine evaluation and website" was submitted with W.R. Okie and E.J. Hitzler as co-I's and **was funded at \$5,000 for one year**.

**30.** A 2004 proposal entitled "Towards oak root rot resistant rootstocks" was submitted with G. Schnabel as co-PI and **was funded at \$7,500 for one year**.

**29.** A 2004 proposal entitled "Development of a pathogenicity assay for the oak root rot pathogen

*Armillaria* on peach” was submitted with G. Schnabel as co-PI and **was funded at \$4,000 for one year.**

28. A 2003 proposal entitled “Orchard systems management trial” **was funded at \$5,000 for one year.**

27. A 2003 proposal entitled “Peach variety evaluation, advanced selection testing and web site” **was funded at \$5,000 for one year.**

26. A 2003 proposal entitled “Timing fertilizer application in relation to feeder root activity” **was funded at \$3,000 for one year.** Co-PI on this grant is Dr. Christina Wells, Department of Horticulture.

25. A 2003 proposal entitled “Towards oak root rot resistant rootstocks” **was funded at \$8,000 for one year.** Co-PI on this grant submitted by Dr. Guido Schnabel, Dept. of Plant Path. and Physiol.

24. A 2003 proposal entitled “Biological control of oak root rot” **was funded at \$6,000 for one year.** Co-PI on this grant submitted by Dr. Guido Schnabel, Dept. of Plant Path. and Physiol.

23. A 2003 proposal entitled “Cultural practices to manage oak root rot disease” **was funded at \$5,000 for one year.** Co-PI’s on this grant are Dr. Guido Schnabel, Dept. of Plant Path. and Physiol. and Dr. Christina Wells, Department of Horticulture.

22. A 2002 proposal entitled “Orchard systems management trial” **was funded at \$5,000 for one year.**

21. A 2002 proposal entitled “Timing fertilizer application in relation to feeder root activity” **was funded at \$2,500 for one year.** Co-PI on this grant is Dr. Christina Wells, Department of Horticulture.

20. A 2002 proposal entitled “Peach variety evaluation, advanced selection testing and web site development” **was funded at \$5,000 for one year.** Co-PI on this grant is Dr. Dick Okie, USDA-ARS, Byron, GA.

19. A 2002 proposal entitled “Developing a tree-ripe program for SC peaches” **was funded at \$1,100 for one year.** I am co-I on this grant submitted by Dr. Jim Rushing.

18. A 2002 proposal entitled “Towards oak root rot resistant rootstocks” **was funded at \$10,000 for one year.** Co-PI on this grant submitted by Dr. Guido Schnabel, Dept. of Plant Path. and Physiol.

17. A 2002 proposal entitled “Biological control of oak root rot” **was funded at \$10,000 for one year.** Co-PI on this grant submitted by Dr. Guido Schnabel, Dept. of Plant Path. and Physiol.

16. A 2001 proposal entitled “Peach variety evaluations and peach web site” **was funded at \$1,500 for one year.**

15. A 2001 proposal entitled “Peach systems trial” **was funded at \$3,000 for one year.**

14. A 2001 proposal entitled “Irrigation and fertility management” **was funded at \$3,000 for one year.**

13. A 2001 proposal entitled “Testing of advanced peach selections in SC” **was funded at \$2,000 for one year.**

12. A 2000 proposal entitled "Peach system trial" **was funded at \$5,000 for one year.**

11. A 2000 proposal entitled "Irrigation and fertility management in peach" **was funded at \$5,000 for one year.**

10. A 2000 proposal entitled "Testing of advanced selections in South Carolina" **was funded at \$3,000 for one year.**
9. A 2000 proposal entitled "Summer pruning and reflective film to improve color in midseason peaches" **was funded at \$1,000 for one year.**
8. A 2000 proposal entitled "Peach variety and advanced selection web site" **was funded at \$1,500 for one year.**
7. A 2000 proposal entitled "Development of a SAR-based strategy for pest and disease management in peach" **was funded at \$3,000 for one year.**
6. A 2000 proposal entitled "Summer pruning and reflective film to improve color of midseason peaches" **was funded at \$1,000 for one year.**
5. A 2000 proposal entitled "Prediction of fruit firmness in SC tree ripe peaches" **was funded at \$600 for one year.**
4. A 1999 proposal entitled "Peach system trial" **was funded at \$5,000 for 1 year.**
3. A 1999 proposal entitled "Irrigation and fertility management in peach" **was funded at \$4,000 for 1 year.**
2. A 1999 proposal entitled "Testing of advanced peach selections in South Carolina" **was funded at \$3,000 for 1 year.**
1. A 1999 proposal entitled "Critical weed free period for optimum peach growth" **was funded at \$3,000 for 1 year.** Note: I was a co-investigator on this grant.

**Clemson University Research Grant Committee (1; \$2,000)**

A FY99 proposal entitled "A comprehensive approach to apple quality management in South Carolina" **was funded at \$2,000 for 1 year.**

**CU-Cooperative Extension Initiative Team Grant (1; 14,000)**

2000-2001 proposal for county agent in-service training and other agent training **was funded for Initiative 105 at \$14,000.**

**ISAGRO Biofarming (Milan, Italy) (1: \$6000)**

Multiyear evaluation of biocontrol agent (Remedier) to prevent or delay *Armillaria* root rot (ARR) disease in peach.

**Novartis Crop Protection, Inc. (Greensboro, NC) (1; \$5,000)**

A 2000 proposal entitled "Activation of peach with Actigard for disease control" **was funded at \$5,000 for 1 year.** This project is in cooperation with Dr. Guido Schnabel (Plant Path. and Physiology Dept., Clemson Univ.).

### **Sonoco Products Company (Hartsville, SC) (1; \$1,500)**

A 1999 proposal entitled "The influence of reflective film on color of peaches and apples in South Carolina" **was funded at \$1,500 for 1 year**. Sonoco donated film used in studies over 2 years.

### **Northern Nut Growers Association Competitive Grant Program (1; \$2,675)**

A FY95 grant proposal entitled "Estimating the Breeding Value of Superior Pawpaw [*Asimina triloba* (L.) Dunal] clones" **was funded at \$2,675 for one year**.

## **XV. Interdisciplinary Cooperation**

Through funded proposals and other projects noted elsewhere, cooperative work between myself and the following organizations/individuals was established and conducted:

1. The PawPaw Foundation (R. Neal Peterson, cooperator).
2. The University of Kentucky, Department of Horticulture and Landscape Architecture, Lexington, KY (Dr. R.L. Geneve, cooperator).
3. U.S. Forest Service, USDA Forestry Sciences Laboratory, Rhinelander, WI (Dr. D. Riemenschneider, cooperator).
4. U.S. Forest Service, Southern Institute of Forest Genetics, Saucier, MS (Dr. T.L. Kubisiak, cooperator).
5. USDA-ARS, National Plant Germplasm System, Beltsville, MD (Dr. E.L. Garvey, cooperator).
6. USDA-ARS, National Clonal Germplasm Repository, Corvallis, OR (Dr. K.E. Hummer, cooperator).
7. USDA-GRIN (Germplasm Resource Information Network), Beltsville, MD (J.D. Mowder, cooperator).
8. USDA-National Agricultural Library, Beltsville, MD (Pamela Q.J. Andre, cooperator).
9. Stetson University, DeLand, FL (Dr. Eliane M. Norman, cooperator).
10. University of Georgia, Department of Horticulture, Coastal Plain Exp't. Stn., Tifton, GA (Dr. D.E. Evert, cooperator).
11. Purdue University, Dept. of Medicinal Chemistry and Pharmacognosy, Purdue University, (Dr. J.L. McLaughlin, cooperator).
12. USDA-ARS Southeastern Fruit & Tree Nut Research Lab, Byron, GA (Dr. W.R. Okie, cooperator).
13. Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, Moshan, Wuchang, PR China (Dr. H. Huang, cooperator).
14. USDA-ARS, Appalachian Fruit Research Center, Kearneysville, WV (Dr. Ralph Scorza, cooperator).
15. Kentucky State University, Frankfort, KY (Dr. Kirk Pomper, cooperator).
16. Clemson University, Department of Horticulture (Dr. Jim Rushing, cooperator).
17. Clemson University, Department of Plant Pathology and Physiology (Drs. Guido Schnabel and Steven Jeffers, cooperators).
18. University of Milan, Italy, Dip.to di Produzione Vegetale (Dr. Daniele Bassi, cooperator).
19. CABI Publishing, A Division of CAB International, UK (<http://www.cabi-publishing.org>) (Tim Hardwick, Publisher).
20. Clemson University, Department of Horticulture (Dr. Christina Wells, cooperator).

Through the Pawpaw Regional Variety Trial that I co-directed with R. Neal Peterson of the PawPaw

Foundation, we established cooperative agreements with the following institutions/individuals:

1. Florida State Univ. (Jill Alford, cooperator).
2. Purdue Univ. (Dr. Bruce Bordelon, cooperator).
3. Iowa State Univ. (Dr. Bill Graves, cooperator).
4. Kentucky State Univ. (Dr. Kirk Pomper, cooperator).
5. Univ. of Kentucky (Dr. Jerry Brown, cooperator).
6. Louisiana State Univ. (Dr. Charles Johnson, cooperator).
7. Univ. of Maryland (Dr. Chris Walsh, cooperator).
8. Michigan State Univ. (Dr. Dennis Fulbright, cooperator).
9. Univ. of Nebraska (Dr. Bill Gustafson, cooperator).
10. Cornell Univ. (Dr. Ian Merwin, cooperator).
11. North Carolina State Univ. (Dr. Mike Parker, cooperator).
12. Ohio State Univ. (Tom Wall, cooperator).
13. Oregon State Univ. (Drs. Anita Azarenko and Kim Hummer, cooperators).
14. Clemson Univ. (Dr. Greg Reighard, cooperator).
15. Univ. of Tennessee (Dr. Carl Sams, cooperator).
16. Institute of Forestry, Chinese Academy of Forestry, Beijing, CHINA (Dr. Xi Sheng-Ke, cooperator).
17. Wuhan Institute of Botany, Chinese Academy of Sciences, Wuhan, CHINA (Dr. Hongwen Huang, cooperator).
18. University of Chile, Santiago, CHILE (Dr. Luis Luchsinger, cooperator).

## **XVI. Leadership of Committees/Organizations**

### **National**

Member: Strategic Planning Committee (2005-2007) of the American Society for Horticultural Science.

**Chair:** Wilder Silver Medal Award Committee (1999-2005) of the American Pomological Society.

Member: Board of Directors, The PawPaw Foundation (1994 - Present).

Member: Environmental Stress Physiology Working Group, American Society for Horticultural Science (1994-Present).

Member: Pomology Working Group, American Society for Horticultural Science (1996-Present).

Member: Membership Committee (1998-2001) of the American Society for Horticultural Science.

**Chair:** Outstanding Researcher Award Committee (1997-1998) of the American Society for Horticultural Science. Member (1995-1998).

Member: Agricultural Sciences Section, Kentucky Academy of Science (1993-1997).

### **University/Industry**

**Chair:** Educational Program Committee for the Southeastern Peach Convention in Savannah, GA, Jan. 7-9, 2007.

Member: Alan Schaffer Service Award of the Faculty Senate (2006-Present).

**Co-Chair:** Search and Screen Committee for Dean, College of Agriculture, Forestry and Life Sciences (2005 - 2006). We hired Dr. Alan Sams, Texas A&M Univ. who will begin Jan. 1, 2007.

Member: Search and Screen Committee for two regional extension horticulturist positions (2005-2006).

Member: Alumni Distinguished Service Award Committee (2005).

Member: Robert and Lois Coker Trustees Chair in Molecular Genetics Search and Screen Committee (2005).

Member: Clemson University Grievance Board (2005-2007). In 2006, we reviewed four grievances, two that involved the controversial termination of tenured full professors.

Member: Clemson University Martin Luther King Jr. Award For Excellence in Service Committee (2004-Present).

Member: University-wide "Sustainable Environment Emphasis Area" Planning Committee (2004-2005)

**Chair:** Educational Program Committee for the Southeastern Peach Convention in Savannah, GA, Jan. 7-9, 2005.

**Lead Faculty Senator** for College of Agriculture, Forestry and Life Science (2005-2006).

Senator: Elected member of Clemson University Faculty Senate (2005-2007); Alternate (2004-2005).

Member, Faculty Senate Executive and Advisory Board (2005-present).

Member: Faculty Senate Policy Committee (2005-2006).

Member: Appointed by President Jim Barker to serve on Clemson University's Alcohol and Other Drugs Task Force (AODTF) to reduce student high-risk drinking (2004-2005).

**Chair:** Faculty and Staff Sub-Group of AODTF (2004-2005)

Member: Faculty Senate Select Committee on PSA Organization Structure (2003 – 2004).

Member: Search and Screen Committee, Regional Apple Position at Mountain Horticultural Crops Research Center, Fletcher, NC (2002 - 2003).

Member: CU-IPM Advisory Committee, Clemson University (2001 – 2003).

Member: Educational Program Committee for the 2002 National Peach Convention in Savannah, GA, Jan. 11-13, 2002.

**Chair:** Educational Program Committee for the 2001 National Peach Convention in Savannah, GA, Jan. 5-7, 2001.

Member: Educational Program Committee for the 2000 National Peach Convention in Savannah, GA, Jan. 7-9, 2000.

Member: Crop Variety Recommendation and Release Committee, Clemson University (1998 – Present).

Member: Virtual Small Fruit Center Committee (1998 - 2000). I worked with colleagues from NC State Univ. and U. GA to develop a regional 'virtual' small fruit center. <http://www.smallfruits.org>

**Co-Director:** Clemson University Cooperative Extension Initiative Team105: Sustainable Agricultural Production Systems (8/99 - Present).

Member: Search and Screen Committee, Extension Fruit Pathology position, College of Agriculture and Life Sciences (9/99 – 6/00).

Fruit Team: I am a member of this multi-disciplinary team of researchers, extension personnel, growers and others at Clemson University (1997 - Present).

Member: Advisory Board, South Carolina Peach Council and Promotion Board (1997-Present).

Member: Professional Home Page Development Advisory Team, South Carolina Agriculture and Forestry System, Clemson University (1998 - Present).

## **Department**

Member: Post-Tenure Review Committee, Department of Horticulture, Clemson University (2005-Present).

**Chair:** Search Committee for Assistant Professor of Plant Physiology, Department of Horticulture, Clemson University (2004-Present).

Member: Mentoring Committee for Dr. Christina Wells, Department of Horticulture, Clemson University (2001 – Present).

**Chair:** Department Faculty Affairs Committee, Department of Horticulture, Clemson University (2005); Member (2003 - 2005; 1998 – 2001).

**Chair:** Department Chair Evaluation Committee, Department of Horticulture, Clemson University (2005).

Member: Promotion and Tenure Committee, Department of Horticulture, Clemson University (2006-2008; 2003-2005; 1999-2001).

Member: Search and Screen Committee, Woody Plant Physiology position, Department of Horticulture (2001).

Fiber Optic Wiring Committee, Atwood Research Facility, KSU (1996).

## **XVII. Professional Development and Service**

### **Membership in Professional Societies/Organizations**

International Society for Horticultural Science  
American Society for Horticultural Science  
American Pomological Society  
National Peach Council  
California Rare Fruit Growers Association (honorary life member)  
South Carolina Peach Council

## **Professional Leadership, Administration and Service**

Horticulture Program Team Leader (2006-Present): See Section IX Current Duties.

Steering Committee (2006-Present): Southern Region Small Fruit Consortium (<http://www.smallfruits.org/>). I am responsible for advising Consortium members and evaluating 20 grant proposals per year for consideration of research and extension funding.

External Reviewer: I reviewed 2006 USDA-CSREES Hatch project proposal by Dr. Dan Ward, Rutgers University, entitled "Optimizing peach fruit quality by improving harvest and postharvest handling" at the request of the Assistant Director, New Jersey Agricultural Experiment Station.

I was selected by Clemson University Vice-President and Provost, Dr. Dori Helms, to represent the university as a participant in the 2006 **Higher Education Leadership Program**, a joint program between Clemson University and Tri-County Technical College.

Special Project (2006-Present). At the request of Dr. John Kelly, V.P.-P.S.A., I assisted Dr. Bruce Pinkerton, Assoc. Dean for Agriculture and Natural Resources, on the 2007-2011 five year federal "Plan of Work" for Cooperative Extension at Clemson University. I have developed a template for a new PSA on-line reporting scheme. This includes the development of six new program teams: horticultural crops, agronomic crops, livestock systems, forestry, wildlife, and water resources. As part of this long-term project, I am communicating with all related specialists and county agents to refine the scheme that which will form the basis for the new reporting system for CUMIS.

CARET Hill Visit (2006). I represented Clemson University during the annual "CARET" (Council for Agricultural Research, Extension and Teaching) visit to Capitol Hill in Washington, D.C., February 27, 2006. I traveled with the V.P. for P.S.A., our federal relations director, and other CARET representatives from South Carolina to visit with members or aids from South Carolina of the United States House of Representatives and Senate. We discussed the research and extension priorities of the nations Land-Grant universities, and Clemson University, in particular and we answered questions. I also participated in the eighth annual NASULGC "Agriculture Research and Education Serving the Nation: Nutrition/Wellness, Rural and Economic Development, and Water Quality/Quantity - A University Science Exhibition on Capitol Hill" in the Rayburn House Office Building.

I was selected by the Dean, College of Agriculture, Forestry and Life Sciences, and the Vice President for Public Service Activities (PSA) of Clemson University, to participate in the **2006 LEAD21** "Leadership for the 21st Century" **National Leadership Training Program** at the University of Maryland.

I was selected by the Dean, College of Agriculture, Forestry and Life Sciences, and the Vice President for Public Service Activities (PSA) of Clemson University, to participate in the **2004 "Class 14" ESCOP/ACOP National Leadership Development Program** in Indianapolis, IN.

**Contributing Editor and Stone Fruit Columnist** (2004-Present), American and Western Fruit Grower Magazines, Meister Publishing. I write 5-6 columns/year on stone fruit that is read by an international audience of approx. 36,000 in North American and many foreign countries.

**1st Vice President/President-Elect (2006)**: American Pomological Society (The oldest fruit organization in North America, founded by Marshall P. Wilder in 1848 to foster the science and practice of fruit growing and variety development, <http://americanpomological.org/>). I am also a member of the Executive Advisory Board.

**2<sup>nd</sup> Vice President (2005)**: American Pomological Society. I am also a member of the Executive Advisory Board.

Peer Review Panelist (2002-Present): Horticulture Committee, Council for International Exchange of Scholars (CIES), **Fulbright Senior Scholar Program**.

Secretary (2001-2005): American Pomological Society. I am also a member of the Executive Advisory Board.

**Chair** (2001): Fruit Section, Southern Region - American Society for Horticultural Science. Chair-Elect: (2000).

Occasional Reviewer: HortScience, the Journal of A.S.H.S., HortTechnology, Journal of the American Pomological Society, Tree Physiology and Annals of Botany. (1992 – Present).

**Review Panelist** (2001, 2000): I served as a peer review panelist for the competitive USDA-1890 Institution Capacity Building Grants program. Each year, I personally reviewed 14-16 institution grants and participated in a two-day panel review in Washington, D.C. where we made final recommendations on proposals for funding.

Review Panelist (2001): I served as a peer reviewer for the IPM Competitive Grants program at Clemson University and I personally reviewed and made recommendations on 28 proposals.

Reviewer/Contributor: Reviewed and contributed to 2001 MSU Extension Bulletin E-2747 entitled "Unusual fruit plants for gardens in the North Central region" by S.F. Berkheimer and E. Hanson, Mich. State University.

External Reviewer: I reviewed 2005 USDA-CSREES Evans-Allen proposal by Dr. Kirk W. Pomper, Kentucky State University, entitled "Development of pawpaw and primocane fruiting blackberries as niche crops for Kentucky and the Southeastern United States" at the request of the Associate Research Director.

External Reviewer: I reviewed 2001 USDA-CSREES Evans-Allen proposal by Dr. Kirk W. Pomper, Kentucky State University, entitled "Development of new commercial crops for Kentucky and the southeastern United States." at the request of the Research Director.

Solicited Grant Reviewer: 2000 - reviewed Biogrants proposal for Auburn University Office of the Associate Provost and Vice President for Research entitled: Agricultural Freeze Protection Using Distributed Super High Frequency Electromagnetic Waves".

**President:** The PawPaw Foundation (1996 - 1999). This is a non-profit organization of 350+ members from the U.S. and several foreign countries "dedicated to research and development of *Asimina triloba* as a new fruit crop for American farmers and consumers". I coordinated mailings, membership, and information requests. I also contributed to the semi-annual newsletter, "From the Pawpaw Patch". I prepared the agenda and chaired the annual business meeting held in Washington, D.C.

**Chair:** Environmental Stress Physiology Working Group, American Society for Horticultural Science (1996-1997). Chair-elect (1995-1996).

**Chair:** Agricultural Sciences Section, Kentucky Academy of Science (1995-1996). Secretary (1994-1995).

**Chair:** Fruit Publication Award Committee (1994-1995) of the American Society for Horticultural Science.

### **Leadership in National/Regional/State Meetings** (some noted in Section XVI University/Industry)

Conference Organizer: I convened and organized the "2003 Southeastern Professional Fruit Worker's Conference" held at the Madren Center, Clemson Univ., October 15-16, 2003.

Chair, Educational Program Committee. 2001 Southern Peach Meeting in Savannah, GA (Jan. 5-7, 2001).

Presided over grower panel on top-working apple orchards at the 2001 Southeastern Apple Growers Meeting, Asheville, NC (Jan. 10, 2001).

Member, Educational Program Committee. 2000 Southern Peach Meeting in Savannah, GA (Jan. 7-9, 2000).

Oral Session Moderator: 1997 Annual Meeting of the American Society for Horticultural Science, Salt Lake City, UT (July 22-26, 1997).

Local Arrangements Committee: 1996 Kentucky Academy of Science Annual Meeting, Kentucky State University, Frankfort, KY (Nov. 14-16, 1996).

Oral Session Moderator: 1996 Kentucky Academy of Science Annual Meeting, Kentucky State University, Frankfort, KY (Nov. 14-16, 1996).

Local Arrangements Committee: 1996 Annual Meeting of the American Society for Horticultural Science, Lexington, KY (Oct. 6-10, 1996).

Oral Session Moderator: 1996 Annual Meeting of the American Society for Horticultural Science, Lexington, KY (Oct. 6-10, 1996).

Oral Session Moderator: 1995 Kentucky Academy of Science Annual Meeting, Western Kentucky University, Bowling Green, KY (Nov. 17, 1995).

Judge, Student Paper Competition: 1995 Kentucky Academy of Science Annual Meeting, Western Kentucky University, Bowling Green, KY (Nov. 17, 1995).

Program Moderator: 1994 Kentucky Landscape Industries Winter Conference and Trade Show, Lexington Center, Lexington, KY (Jan. 6, 1994).

### **Other Leadership and Service Activities in the Community**

**Director:** International Ministry Team, University Baptist Church, Clemson, SC (2004-Present).

**Director:** Missions Committee, University Baptist Church, Clemson, SC (2004-2006).

**Coach:** University Baptist Church soccer outreach league, Clemson, SC (2005, 2004, 2003, 2001, 2000, 1999, 1998, 1997).

**Referee:** International Soccer Tournament, University Baptist Church, Clemson, SC (2002).

**Director:** University Baptist Church soccer outreach league, Clemson, SC (2002).

**Financial Secretary:** Welcome Baptist Church, Central, SC (2000).

Deacon/Treasurer: Georgetown Evangelical Free Church, Georgetown, KY (1996 - 1997).

### **Production Tours**

Organized industry tours of EPA administrators (July, 2001, and June, 1999) and participated in tour for visitors from the California Tree Fruit Agreement (July, 2003 and 1999). Took visiting professionals from the Czech Republic, South Africa, Greece and China on tours of facilities and region.

SC/NC Fruit Tour. I co-organized this fruit production tour with Dr. Mike Parker (NCSU) as a preconference tour (7/11/98) for the 1998 Annual Meeting of the American Society of Horticultural Science in Charlotte, NC.

Stone fruit production in the Central Valley of California. Toured commercial fruit production, packing and processing facilities with Mr. Gary Van Sickle of the CA Tree Fruit Agreement. Visited with faculty and toured facilities and discussed research at the UC-Kearney Ag. Center, Parlier, USDA-Fresno, and CSU-Fresno (October, 1997).

Toured agricultural production and research facilities in the People's Republic of China. Visited the Institute of Forestry in Beijing, Institute of Botany in Wuhan, Huazhong Agricultural College in Wuhan and The Fruit and Tea Institute in Jin Shui Zha (May, 1997).

Nut production in Central California. Toured commercial nut operations and USDA National Clonal Germplasm Repository (Davis) with Northern Nut Growers Annual Meeting conference (August, 1996).

### **XVIII. Honors and Awards** (some noted elsewhere)

I was elected "**Secretary**" for the Clemson University Faculty Senate (2006-2007).

I was elected "**Lead Senator**" for the College of Agriculture, Forestry and Life Sciences (2005-2006).

I was selected by Provost Helms to represent the university as a participant in the 2006 Higher Education Leadership Program, a joint program between Clemson University and Tri-County Technical College.

I was selected by the Dean, College of Agriculture, Forestry and Life Sciences, and the Vice President for Public Service Activities (PSA) of Clemson University, to participate in the 2004 "Class 14" ESCOP/ACOP National Leadership Development Program.

2001 ASHS **Outstanding Extension Publication** for the paper "Layne, D.R, Z. Jiang, and J.W. Rushing. 2001. Reflective film improves red skin coloration and advances maturity in peach. *HortTechnology* 11(2):234-242."

I was invited to present a special paper entitled "Recent Advances in the Production Technology of Peach and Strawberry Cultivation" as part of the Feb. 20-21, 2002 National Seminar on "The Changing Scenario in the Production Systems of Hill Horticultural Crops, Udhagamandalam, the Queen of Hill Stations, Tamil Nadu, INDIA. However, due to lack of travel money, I had to turn this opportunity down.

Extension Publication **Blue Ribbon Award** for "Pawpaw information website", presented by Southern Region of the American Society of Horticultural Science at their annual meeting in 2000. I conceptualized this website, got the grant to hire the webmaster and reviewed/edited much of the material therein. The award actually went to my successor, Dr. Kirk Pomper at KSU.

Extension Publication **Blue Ribbon Award** for “Cooking with Pawpaws”, presented by Southern Region of the American Society of Horticultural Science at their annual meeting in 2000.

Graduate Fellowships (total of 7) merit-based cash awards while pursuing M.S. and Ph.D. degrees in horticulture at Michigan State University, E. Lansing, MI from 1987-1992.

Recruiting Fellowship cash award to pursue M.S. degree in horticulture at Michigan State University, E. Lansing, MI - 1986.

Valedictorian: Harrow District High School, Harrow, Ontario, CANADA - 1982.

## **XIX. List of References**

Available on request