



The University of Georgia

COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

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March 18, 2009

Dear Dr. Baughman:

It is my great pleasure to present you the nomination of Dr. Albert K. Culbreath for the 2009 APRES Fellow Award. Dr. Culbreath's plant pathology research has been outstanding, and he has made major contributions to the whole U.S. peanut industry. Dr. Culbreath was recently President of APRES in 2006 and has faithfully served our society as an active member for many years.

Dr. Culbreath is recognized worldwide for his research with tomato spotted wilt disease caused by *Tomato spotted wilt virus* (TSWV). Dr. Culbreath was the co-founder and integral part of the TSWV team in Georgia since its beginning which developed the "Spotted Wilt Risk Index" as an educational tool for use by peanut growers. He also works on other foliar peanut diseases with major emphasis on both early and late leafspot as well as funky leafspot. In addition to fungicide resistance management strategies, Dr. Culbreath has cooperated with several peanut breeders in evaluating for genetic resistance to these various foliar pathogens.

Dr. Culbreath has received numerous awards, national, and international recognition for his research contributions over the past several years. Many of these were from APRES and included three Wallace K. Bailey Awards (2 as senior author – 1988 and 1993 and 1 as co-author – 1994) and the 1994 Dow AgroScience Award for Excellence in Research. He and his colleagues were also the recipients of the APC Peanut Research and Education Award in 1998.

Dr. Culbreath has been appointed, elected, and served APRES on many committees, the Board of Directors, and presented numerous papers each and every year. Thus, I wholeheartedly support and submit to you the nomination of Dr. Albert K. Culbreath for this prestigious honor and well deserved recognition as an APRES Fellow in 2009.

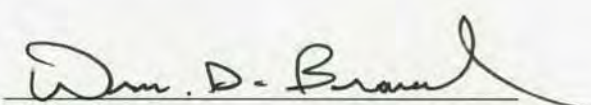
Sincerely,

Wm. D. Branch
Professor/APRES Fellow

TITLE: Nomination of **Dr. Albert K. Culbreath** for Election to Fellowship
by the American Peanut Research and Education Society"

DATE SUBMITTED: March 2009

NOMINEE: Dr. Albert K. Culbreath
Date of birth: 12 October 1959
Place of birth: Hartselle, AL
Address: Department of Plant Pathology
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NOMINATOR: Dr. William D. Branch 
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BASIS OF NOMINATION:

Primary Area: Research
Secondary Area: Service to Industry

I. PERSONAL ACHIEVEMENTS AND RECOGNITION

- A. Degrees received: give field, date, and institution for each degree.
- Associate of Science, 1980, Roane St. Community College
 - B.S. (Botany), 1982, Auburn University (with high honors)
 - M.S. (Plant Pathology), 1985, Auburn University
 - Ph.D. (Plant Pathology), 1989, North Carolina State University

- B. Membership in professional and honorary academic societies.

American Peanut Research and Education Society (APRES)
American Phytopathological Society (APS) (National and Southern Division)
Georgia Association of Plant Pathologists (GAPP)

C. Honors and awards received since the baccalaureate degree.

- 1988 Wallace K. Bailey Award for best presentation at 1987 Annual Meeting, APRES
- 1989 C. J. Nusbaum Scholar Award, N.C. State University, Dept. of Plant Pathology
- 1993 Wallace K. Bailey Award for best presentation at 1992 Annual Meeting, APRES
- 1993 Award of Excellence for Junior Scientist, University of Georgia, Coastal Plain Experiment Station
- 1994 Wallace K. Bailey Award (co-author) for best presentation at 1993 Annual Meeting, APRES
- 1994 DowElanco Excellence in Research Award (with Jim Todd and Jim Demski), APRES
- 1994 Co-author to John Richburg's Outstanding Graduate Student Presentation, APRES
- 1998 American Peanut Council Research and Education Award (with Jim Todd, Steve Brown, and Hanu Pappu)
- 1998 Past President's Award, American Phytopathological Society, Southern Division
- 1999 American Phytopathological Society Novartis Award for Outstanding Contributions to Agriculture
- 2000 Georgia Peanut Commission Research and Education Award (with John Baldwin, John Beasley, Steve Brown, Hanu Pappu, and Jim Todd)
- 2004 Co-author to Emily Cantonwine and Sara Gremillion who placed 2nd and 3rd in the Graduate Student Paper Competition, American Phytopathological Society, Southern Division
- 2004 Co-author to Sara Gremillion who placed 2nd in Joe Sugg Graduate Student Paper Competition, APRES
- 2005 Co-author to Sara Gremillion who placed 2nd in Joe Sugg Graduate Student Paper Competition, APRES
- 2006 Co-author to Sara Gremillion who placed 2nd in Joe Sugg Graduate Student Paper Competition, APRES
- 2006 Ph.D. Student Sara Gremillion won Kenneth E. Papa Outstanding Graduate Student Award, UGA Department of Plant Pathology
- 2006 Ph.D. Student Sara Gremillion was a finalist in the Fulbright Fellow program (She was also selected but had taken a job and declined)
- 2008 Certificate of Recognition for Outstanding Service on the American Phytopathological Society Scientific Programs Board
- 2008 Past President's Award, APRES

D. Employment: years, organizations and locations.

Professor	University of Georgia	1999-Present
Associate Professor	University of Georgia	1994 - 1999
Assistant Professor	University of Georgia	1989 - 1994
Graduate Research Assistant	North Carolina St. University	1985 - 1988
Graduate Research Assistant	Auburn University	1983 - 1985

II. ACHIEVEMENT IN PRIMARY (50 POINTS) AND SECONDARY (10 POINTS) FIELDS OF ACTIVITY

A. Research

Significance and originality of basic and applied research contributions; scientific contribution to the peanut industry; evidence of excellence and creative reasoning and skill; number and quality of publications; quality and magnitude of editorial contributions. Attach a chronological list of publications.

During his tenure at the University of Georgia, Dr. Culbreath has established himself as a leader in the areas of ecology, epidemiology and control of thrips-vectored Tomato spotted wilt virus, and in the quantitative and ecological epidemiology and control of foliar fungal diseases of peanut. His productivity is documented by his authorship on over 120 refereed journal articles and book chapters. Dr. Culbreath's publications typically demonstrate quantitative documentation of disease progress parameters as relating to various crop and management factors.

Dr. Culbreath's work on leaf spot diseases of peanut caused by *Cercosporidium personatum* and *Cercospora arachidicola* has dealt largely with the integration of chemical control, fungicide resistance management strategies, partial resistance to *C. personatum* and *C. arachidicola* and cultural practices that suppress leaf spot epidemics. Dr. Culbreath demonstrated synergistic activity of tank mixes of chlorothalonil with triazole fungicides, and prompted use of mixtures of reduced rates of chlorothalonil and propiconazole in peanut to achieve better leaf spot control than use of full rates of either fungicide would provide. Dr. Culbreath's research on use patterns and tank mixes of tebuconazole or propiconazole with chlorothalonil has contributed significantly to improved leaf spot control in peanut compared to previous fungicide regimes. Recently, he has found that the experimental carboxamide fungicide penthiopyrad is very effective for leaf spot control and the 2009 paper published by Culbreath, Brenneman and Kemerait in Pest Management Science is one of the first refereed journal articles on disease control with that fungicide on any crop.

Dr. Culbreath's research has addressed practical management of fungicide resistance. He demonstrated that tank mix combinations or alternations of benomyl with the protectant fungicide chlorothalonil provided control of leaf spot in fields with populations of *C. personatum* insensitive to benomyl. This work serves as a "worst case" model and indicates that the resistance management regimes may prolong the utility of at-risk fungicides for leaf spot control. In 2006, Dr. Katherine Stevenson and Dr. Culbreath documented a large reduction in sensitivity to tebuconazole in populations of both *C. personatum* and *C. arachidicola*. Dr. Culbreath and collaborators have recently published findings that newly registered prothioconazole and fungicide mixtures including that fungicide are effective in fields with resistance to tebuconazole.

Dr. Culbreath's graduate students have demonstrated that use of conservation tillage practices suppresses leaf spot epidemics and that combining conservation tillage practices with moderately resistant cultivars such as C-99R, DP-1, Georgia-01R, and York, can greatly reduce fungicide requirements and costs of leaf spot control. This work has contributed significantly toward development of a new Risk Index for fungal diseases of peanut. Similarly moderate levels of resistance and/or tolerance in medium maturity cultivars Georgia-03L and Tifguard can

help reduced fungicide needs for leaf spot control. Although these are not as resistant as some of those mentioned previously, they mature approximately two weeks earlier than most of the resistant cultivars. The reduction in epidemic duration can be as important as higher level of resistance.

Dr. Culbreath's work on thrips-vectored tomato spotted wilt virus in peanut has resulted in an integrated system for managing this disease. Dr. Culbreath has been an integral part of a multi-disciplinary "team-approach" to this complex problem. Dr. Culbreath documented slower epidemic development in several cultivars and breeding lines than in Florunner, the predominant cultivar grown in the southeastern U.S. until the early 1990's. In cooperation with peanut breeders from several programs, Dr. Culbreath has characterized the field reaction to TSWV of numerous breeding lines. Several of those have been released as cultivars (Georgia Green, Florida MDR-98, C-99R, Hull, DP-1, AP-3, Georgia-01R, Tifrunner, Florida-07, Tifguard and Georganic). Dr. Culbreath was co-developer with Dr. Corley Holbrook on Tifrunner, Tifguard, and Georganic cultivars. He was also instrumental in documenting that peanut genetically modified by Dr. Peggy Ozias-Akins and associates with the TSWV coat protein gene has field resistance to spotted wilt. Dr. Culbreath has reported very high levels of field resistance to TSWV in peanut lines derived from *Arachis hypogaea* var. *hirsuta*, potentially representing a new source of resistance to TSWV.

Dr. Culbreath showed that many peanut plants could be infected with TSWV yet not show symptoms. Cooperative efforts of Drs. Culbreath, Jim Todd and Jim Demski led to the discovery that a large portion of thrips overwintering in peanut fields are brachypterous (wingless), and to detection of the virus in thrips larvae from TSWV-infected but asymptomatic peanut plants.

Cooperative efforts with Dr. Todd showed that in-furrow applications of the systemic insecticide phorate helps suppress spotted wilt epidemics, that planting mid-late May in Georgia helps reduce incidence of spotted wilt, and that establishing greater populations of peanut plants can dilute the impact of spotted wilt. More recently, Dr. Culbreath has found that resistance levels in several of the newly released cultivars may be great enough that effects one or more of phorate insecticide, twin row pattern, optimal planting date, or higher plant population may no longer be necessary.

Recognition of his expertise includes his being invited to write the 2003 Annual Review of Phytopathology article on Epidemiology and Management of Tomato Spotted Wilt of Peanut, and invited to give a plenary presentation at the Eighth International Symposium on Thysanoptera and Tospoviruses in 2005. He has received several significant awards, including the Dow AgroSciences Excellence in Research and Wallace K. Bailey Award (twice) from APRES, the American Peanut Council Research and Education Award, and the American Phytopathological Society's Novartis Award for Outstanding Contributions to Agriculture.

Dr. Culbreath has served on 22 graduate student committees including being major professor for four M.S. students and two Ph.D. students.

B. Extension

Dr. Culbreath has been active in grower and extension agent educational programs. He has made numerous presentations on peanut disease control at county grower meetings, agent training sessions, and commodity group research updates in Georgia. He has frequently been invited to make presentations at grower or industry related meetings in other states. He has made invited presentations at five Florida Panhandle Peanut Shortcourses and at eight University of Florida Marianna Agricultural Research Center Peanut Field Days and has spoken at peanut grower meetings in South Carolina and Mississippi. He has made presentations (both in person and via audio link) on peanut disease control for the Peanut Company of Australia, to peanut growers and industry personnel in Cordoba, Argentina.

Dr. Culbreath has been an integral part of the team that developed an integrated spotted wilt management program that uses several factors (resistant cultivars, optimal planting date, increased seeding rates, twin-row patterns, strip-tillage, and phorate insecticide) to control spotted wilt. He was directly involved in the team efforts led by Dr. Steve Brown that resulted in development of the Spotted Wilt Risk Index as an educational tool and decision aid for growers and practitioners. Since adoption of the integrated system, annual losses in peanut in Georgia have been less than one third of the \$12 million lost to spotted wilt in 1997. Dr. Culbreath was a co-author on the extension bulletin, "Tomato spotted wilt of peanut: Identifying and avoiding high-risk situations" published in 1999 and revised each subsequent year through 2006". Dr. Culbreath developed a web page on tomato spotted wilt of peanut. That site was recently incorporated into a broader scope page on tomato spotted wilt. Dr. Culbreath is primarily responsible for content of the peanut portion of that site (<http://www.tomatospottedwiltinfo.org/peanut/>) that explains the risk index and provides in-depth information on the factors involved in managing spotted wilt and an interactive risk calculator. Dr. Culbreath was a co-author on a 2003 Special Feature Article in *Plant Disease* for which Dr. Steve Brown was senior author that highlighted the Development and use of the Tomato Spotted Wilt Index in peanut.

Dr. Culbreath has also been instrumental in the development and validation of the Georgia Fungal Disease Risk Index, and collaborated in the efforts that went into combining that index with the previous Tomato Spotted Wilt Index to form "Peanut Rx". The Spotted Wilt Index has been extremely popular as a guide for making management decisions, and the combined "Peanut Rx" shows great potential for huge positive impact on the management of multiple diseases.

C. Service to Industry

Development or improvement of programs, practices, and products.
Evaluate the significance, originality and acceptance by the public.

III. SERVICE TO THE PROFESSION (30 Points)

A. Service to APRES including length, quality, and significance of service

Dr. Culbreath has been very active in APRES, serving on numerous committees and as an ad hoc reviewer for *Peanut Science*. During 2005-2008 he served on the board of directors in the executive succession during one of the most dynamic periods of the recent history of APRES. Among several significant events during his term were the transition of *Peanut Science* from a print journal to being published electronically, and the search for a new Executive Officer.

A list of APRES committee assignments follows in section A1.

1. Appointed positions.

1989-1990	Technical Program Committee, 1990 Annual Meeting
1997-1999	Publications and Editorial Committee
1998-1999	Local Arrangements Committee, 1999 Annual Meeting
2000-2003	Dow AgroSciences Award Committee
2002-2003	Nominating Committee
2004-2007	Fellows Committee
2007-2008	Nominating Committee
2007-present	Bailey Award Committee
2008-present	Ad hoc committee on long-range issues facing APRES.

2. Elected positions.

2005-2006	President Elect/Program Chair, 2006 Annual Meeting
2006-2007	President
2007-2008	Past President/Nominating Committee

3. Other service to the Society.

1990-1992	Georgia Contributing Author to APRES Newsletter, "Peanut Research" Annual meeting session moderator 1990, 1991, 1993,
1997	Organized and chaired symposium on Tomato spotted wilt virus

B. Service to the profession outside the Society including various administrative skills and public relations actions reflecting favorably upon the profession

1. Describe advancement in the science, practice and status of peanut research, education or extension, resulting from administrative skill and effort.

Dr. Culbreath has been very active in the American Phytopathological Society national and Southern Division. He has chaired of the APS Chemical Control and Placement Committees and has been a member of the Host Plant Resistance Committee. He served as a Section Editor for APS Biological and Cultural Tests and as Associate Editor of *Plant Disease*. Dr. Culbreath has chaired the Southern Region Information Exchange Group on Thrips and Whitefly Vecteded Viruses. He has served as President of the Southern Division of APS, APS Councilor from the Southern Division, and Plant Disease Management section chair for APS Scientific Program Board.

2. Describe initiation and execution of public relations activities promoting understanding and use of peanuts, peanut science and technology by various individuals and organized groups within and outside the USA.

The Georgia Peanut Tour is an annual educational tour that promotes peanuts and provides participants with information on the status of the peanut crop, updates on key issues such as growing conditions, quality factors and concerns. The tour is conducted through joint efforts of the University of Georgia, USDA, and the Georgia Peanut Commission. Dr. Culbreath has been a member of the Georgia Peanut Tour Committee for several years and chaired the Committee in 2006.

EVALUATION:

Identify in this section, by brief reference to the appropriate materials in sections II and III, the combination of the contributions on which the nomination is based. Briefly note the relevance of key items explaining why the nominee is especially well qualified for fellowship.

Dr. Albert Culbreath, Professor of Plant Pathology at the University of Georgia, Tifton Campus, conducts research on epidemiology and integrated management of early and late leaf spot diseases and tomato spotted wilt of peanut. He has made significant contributions in the areas of chemical control, host plant resistance and effects of cultural practices on all of these diseases. From his program and collaborative efforts he is the author or co-author on over 120 refereed journal articles or book chapters and 180 abstracts and proceedings. He has made significant contributions in development of an integrated management system for Tomato spotted wilt in peanut, and the Tomato Spotted Wilt Risk Index that was developed as an educational tool to help promote that system. Since that integrated system was implemented, losses to tomato spotted wilt in Georgia have been drastically lower than in 1997, the worst year to date for spotted wilt in peanut. The success of that management program was crucial for the survival of the peanut industry in the southeastern U.S., and the integrated team approach used in that program has been heralded as a model for other pest management systems. Dr. Culbreath has likewise been heavily involved in development of a fungal disease risk index and the combining that index with the Tomato Spotted Wilt Index into "Peanut Rx". This system shows great potential to improve the economic efficiency of disease control aspects of peanut production. Dr. Culbreath has served APRES as President, and has been an active member on several APRES committees. Dr. Culbreath was part of teams awarded the Dow AgroSciences Award for Excellence in Research and the American Peanut Council Research and Education Award. He has won the Wallace K. Bailey Award twice, and received the Novartis Award for Outstanding Contributions to Agriculture from the American Phytopathological Society.

Books and Chapters

1. Todd, J. W., A. K. Culbreath, J. R. Chamberlin, R. J. Beshear and B. G. Mullinix. 1995. Colonization and Population Dynamics of Thrips in Peanuts in the Southern United States. Pages 453-460. In: Parker, B. L., M. Skinner and T. Lewis [eds.]. Thrips Biology and Management. Plenum Publishing Corp., New York.
2. F. M. Shokes and Culbreath, A. K. 1996. Early and Late Leaf Spots. Pages 17-20. In: N. Kokalis-Burelle, D. M. Porter, D. H. Smith, R. Rodriguez-Kabana, and P. Subrahmanyam [eds.]. Compendium of Peanut Diseases, 2nd Ed., APS Press, St. Paul, MN, 94 pp.
3. Wauchope, R. D., T. L. Potter, and A. K. Culbreath. 2003. Relating field Dissipation and Laboratory Studies Through Modeling: Chlorothalonil Dissipation after Multiple Applications in Peanut. pages 387-303. IN: E. L. Arthur, A. C. Barefoot, and V. E. Clay, eds. Terrestrial Field Dissipation Studies: Purpose, Design, and Interpretation. American Chemical Society, Washington, DC. 343 pp.
4. Culbreath, A. K., J. W. Todd, and S. L. Brown. 2003. Epidemiology and Management of Spotted Wilt of Peanut. Annual Review of Phytopathology 41:53-75.

Refereed Journal Articles

1. Culbreath, A. K., R. Rodriguez-Kabana and G. Morgan-Jones. 1984. An agar disc method for isolating fungi parasitic of Nematode Eggs. Nematropica 14:145-154.
2. Morgan-Jones, G., A. K. Culbreath and R. Rodriguez-Kabana. 1984. Notes on Hypomycetes. XLIX. Xenokylindria obovata, a new species isolated from diseased eggs of the nematode Meloidogyne arenaria, and X. prolifera. Mycotaxon 20:599-606.
3. Culbreath, A. K., R. Rodriguez-Kabana and G. Morgan-Jones. 1985. Use of hemicellulosic waste for reduction of the phytotoxic effects of chitin and for root-knot nematode control. Nematropica 15:49-75.
4. Culbreath, A. K., R. Rodriguez-Kabana and G. Morgan-Jones. 1986. Chitin and Paecilomyces lilacinus for control of Meloidogyne arenaria. Nematropica 16:599-606.
5. Culbreath, A. K., M. K. Beute and J. C. Wynne. 1990. Use of spatial patterns of Cylindrocladium crotalariae in evaluation of resistant genotypes. Phytopathology 80:1395-1400.
6. Culbreath, A. K., A. S. Csinos, P. F. Bertrand and J. W. Demski. 1991. Tomato spotted wilt virus epidemic in flue-cured tobacco in Georgia. Plant Disease 75:483-485.
7. Culbreath, A. K., M. K. Beute and C. L. Campbell. 1991. Spatial and temporal aspects of Cylindrocladium black rot in peanut. Phytopathology 81:144-150.
8. Culbreath, A. K., A. S. Csinos, T. B. Brenneman, J. W. Todd and J. W. Demski. 1991. Association of tomato spotted wilt virus with general chlorosis of peanut. Plant Disease 75:863 (Plant Disease Note).
9. Culbreath, A. S., T. B. Brenneman and F. M. Shokes. 1991. Quantitative comparison of stem lesions caused by Cercosporidium personatum in Florunner and Southern Runner peanut cultivars. Peanut Science 19:116-121.
10. Culbreath, A. K., and T. B. Brenneman. 1992. Combining center pivot irrigation applications of chlorothalonil with a moderately resistant cultivar for control of late leaf spot in peanut. Plant Disease 76:26-30.
11. Culbreath, A. K., M. K. Beute, B. B. Shew, and K. R. Barker. 1992. Effects of Meloidogyne hapla and Meloidogyne arenaria on black rot severity in new Cylindrocladium-resistant peanut genotypes. Plant Disease 76:352-357.
12. Chamberlin, J. R., J. W. Todd, R. J. Beshear, A. K. Culbreath, and J. W. Demski. 1992. Overwintering hosts and wing form of Thrips (Frankliniella spp.) in Georgia: Implications for management of spotted wilt disease. Environmental Entomology 21(1):121-128.
13. Culbreath, A. K., J. W. Todd, and J. W. Demski. 1992. Productivity of Florunner peanut infected with tomato spotted wilt virus. Peanut Science 19:11-14.
14. Culbreath, A. K., T. B. Brenneman, and C. K. Kvien. 1992. Use of a resistant peanut cultivar with copper fungicides and reduced fungicide applications for control of late leaf spot. Crop Protection 11:361-365.
15. Culbreath, A. K., J. W. Todd, and J. W. Demski. 1992. Disease progress of tomato spotted wilt virus in Florunner and Southern Runner peanut cultivars. Phytopathology 82:766-771.
16. Culbreath, A. K., N. A. Minton, T. B. Brenneman, and B. G. Mullinix. 1992. Response of Florunner and Southern runner peanut cultivars to chemical treatments for management of late leaf spot, southern stem rot, and nematodes. Plant Disease 76:1199-1203.
17. McPherson, R. M., R. J. Beshear, and A. K. Culbreath. 1992. Seasonal abundance of Thrips (Thysanoptera: Suborder Terebrantia) in Georgia flue-cured tobacco. Journal of Entomological Science 27:257-268.
18. Culbreath, A. K., T. B. Brenneman, F. M. Shokes, A. S., Csinos, and H. S. McLean. 1992. Tank mix applications of cyproconazole and chlorothalonil for control of foliar and soilborne diseases of peanut. Plant Disease 76:1241-1245.

Refereed Journal Articles (Cont.)

19. Culbreath, A. K., P. F. Bertrand, A. S. Csinos, and R. W. McPherson. 1993. Effect of seedling source on field incidence of tomato spotted wilt in flue-cured tobacco. *Tobacco Science* 37:9-10.
20. Chamberlin, J. R., A. K. Culbreath, J. W. Todd and J. W. Demski. 1993. Detection of tomato spotted wilt virus in tobacco thrips (Order Thysanoptera: Thripidae) in harvested peanut fields. *Journal of Environmental Entomology* 22:40-45.
21. Baird, R. E., T. B. Brenneman, D. K. Bell, A. K. Culbreath, and J. D. Moore. 1993. The peanut shell mycobiota of detached vs. mechanically harvested pods either treated or not treated with flutolanil. *Plant Disease* 77:405-408.
22. Culbreath, A. K., T. B. Brenneman, L. D. Chandler and H. R. Sumner. 1993. Chemigation and ground spray applications of cyproconazole for control of late leaf spot on peanut. *Plant Disease* 77:505-508.
23. Yang, G., K. E. Espelie, J. W. Todd, A. K. Culbreath, R. N. Pittman, and J. W. Demski. 1993. Cuticular lipids from wild and cultivated peanuts and the relative resistance of these peanut species to fall armyworm and thrips. *Journal of Agricultural and Food Chemistry* 41:814-818.
24. Culbreath, A. K., J. W. Todd, D. W. Gorbett and J. W. Demski. 1993. Spotted wilt apparent disease progress in the component lines of Southern Runner cultivar. *Peanut Science* 20:81-84.
25. Chamberlin, J. R., J. W. Todd, A. K. Culbreath, W. C. Johnson and J. W. Demski. 1993. Post-harvest management of tobacco thrips overwintering in old peanut fields. *Journal of Entomological Science* 28:433-446.
26. Baird, R. E., T. B. Brenneman, D. K. Bell, A. K. Culbreath, and J. D. Moore. 1993. The effects of the fungicide flutolanil (Moncut) on the peanut shell mycobiota of two peanut cultivars. *Plant Disease* 77:736-741.
27. Kvien, C. K., A. K. Culbreath, J. W. Wilcut, S. L. Brown, and D. K. Bell. 1993. Peanut production in systems restricting use of pesticides based on carcinogenicity or leachability. *Peanut Science* 20:118-124.
28. Baird, R. E., D. K. Bell, D. R. Sumner, A. K. Culbreath, and B. G. Mullinix. 1993. Survival of *Rhizoctonia solani* AG-4 in residual peanut shells in soil. *Plant Disease* 77:973-975.
29. Brenneman, T. B., and A. K. Culbreath. 1994. Utilizing a sterol demethylation inhibiting fungicide in an advisory program to manage foliar and soilborne pathogens of peanut. *Plant Disease* 78:866-872.
30. Snook, Maurice E., R. E. Lynch, A. K. Culbreath and C. E. Costello. 1994. 2,3-Di-(*E*)-caffeoyl-(2*R*,3*R*)-(+)-tartaric Acid in terminals of peanut (*Arachis hypogaea* L.) varieties with difference resistances to late leaf spot disease [*Cercosporidium personatum* (Berk. & M. A. Curtis) Deighton] and the insects tobacco thrips [*Frankliniella fusca* (Hinds)] and potato leafhopper [*Empoasca fabae* (Harris)]. *J. Agric. Food Chem.* 42:(7):1572-1574.
31. Culbreath, A. K., J. W. Todd, W. D. Branch, S. L. Brown, J. W. Demski and J. P. Beasley Jr. 1994. Effect of new cultivar Georgia Browne on epidemics of spotted wilt. *Plant Disease* 78:1185-1189.
32. Brenneman, T. B., H. R. Sumner, L. R. Chandler, J. M. Hammond and A. K. Culbreath. 1994. Effect of application techniques on performance of propiconazole for peanut disease control. *Peanut Science* 21:134-138.
33. McPherson, Robert M., A. K. Culbreath, Michael G. Stephenson, and David C. Jones. 1995. Impact of transplanting date and insecticide control practices on the incidence of tomato spotted wilt virus and insect pests in flue-cured tobacco. *Tobacco Science* 39:30-37.
34. McPherson, R. M., M. G. Stephenson, D. M. Jackson, A. K. Culbreath and P. F. Bertrand. 1995. Effects of planting date and tobacco germplasm source on the occurrence of spotted wilt virus and on the abundance of thrips and tobacco aphids. *Tobacco Science* 39:23-29.
35. Culbreath, A. K., T. B. Brenneman, K. Bondari, K. L. Reynolds, and H. S. McLean. 1995. Late leaf spot, southern stem rot, and peanut yield responses to rates of cyproconazole and chlorothalonil applied alone and in combination. *Plant Disease* 79:1121-1125.
36. Culbreath, A. K., T. B. Brenneman, K. L. Reynolds, J. M. Hammond, and G. B. Padgett. 1995. Tank mix combinations of propiconazole and chlorothalonil for control of leaf spot diseases of peanut. *Peanut Science* 22:101-105.
37. Yang, G., K. E. Espelie, J. W. Todd, A. K. Culbreath, R. N. Pittman, and J. W. Demski. 1995. Characterization of cuticular lipids from cultivated and wild peanut species and their effect on feeding by fall armyworm (Lepidoptera:Noctuidae). *Peanut Science* 22:49-54.
38. Camann, M. A., A. K. Culbreath, J. Pickering, J. W. Todd, and J. W. Demski. 1995. Spatial and temporal patterns of spotted wilt epidemics in peanut. *Phytopathology* 85:879-885.
39. Richburg, J. S., III, Wilcut, J. W., Culbreath, A. K., and Kvien, C. K. 1995. Response of Eight Peanut (*Arachis hypogaea* L.) Cultivars to the Herbicide AC 263,222. *Peanut Science* 22:76-80.
40. Branch, W. D., and A. K. Culbreath. 1995. Combination of early maturity and leaf spot tolerance within an advanced Georgia peanut breeding line. *Peanut Science* 22:106-108.

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The University of Georgia

College of Agricultural and Environmental Sciences *Cooperative Extension*

Assistant Dean For Extension
111 Conner Hall
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706.542.1060
Fax 706.542.2115
astdext@uga.edu

March 9, 2009

Dr. William D. Branch
UGA Tifton Campus
115 Coastal Way, Rm 139

Dear Dr. Branch:

It is my pleasure to write in support of Dr. Albert Culbreath's nomination for the 2009 APRES Fellow Award. I have worked with many distinguished scientists from several different Universities during my career, but none more dedicated to his mission than Dr. Culbreath. His unpretentious manner belies his academic prowess and his dedication to the agricultural community which he serves.

Dr. Culbreath's research on disease management in peanut has yielded untold impact on the peanut industry in Georgia, the U.S. and the world. As an Extension Specialist conveying information directly to growers, I was sometimes concerned about the validity or relevance of some published research, and was sometimes reluctant to confuse growers with such information. This was NEVER the case with Dr. Culbreath's research. His research projects were always on track with the most important issues facing growers. Seeing first hand his meticulous attention to detail, I was always confident that his data was correct and his conclusions were valid. In short, if Albert said it, I believed it, and so did many other scientists, county agents, industry reps and growers.

Most of my direct involvement with Dr. Culbreath's research was in regard to management of tomato spotted wilt virus. Dr. Culbreath was a vital member of a team of scientists dealing with this problem and much of the success of that team effort was directly due to his research. He has also shown huge impact in the management of peanut leafspot, not only in the evaluation of new fungicides but also in the epidemiology of the disease and the impact of cultural practices such as conservation tillage.

Few scientists are as dedicated to their students as Albert Culbreath. I'm sure that any of his students would tell you that, while under his tutelage they not only learn sound science, they also learn about teamwork. They learn how attention to detail makes the difference between numbers and numbers that really means something. They learn that you don't have to be arrogant to be a world class scientist. They learn that honesty still means something. You couldn't ask for a better role model for the next generation of scientists than Dr. Albert Culbreath.

For these reasons, I cannot think of anyone more deserving to be an APRES Fellow than Dr. Albert Culbreath. Feel free to contact me (bugbrown@uga.edu, 706-542-1060) if you have any further questions regarding his qualifications.

Steve L. Brown
Assistant Dean for Extension

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March 12, 2009

Dr. William D. Branch
Department of Crop and Soil Sciences
Univ. of Georgia – Coastal Plain Exp. Sta.
P. O. Box 748
Tifton, GA 31793-0748

Dear Dr. Branch:

It is a pleasure to express my support of Dr. Albert Culbreath for the Award of Fellow in the American Peanut Research & Education Society (APRES). Albert is an outstanding plant pathologist and research scientist as exemplified by his many contributions in research on complex problems such as epidemiology and control of Tomato Spotted Wilt Virus (TSWV), management of fungicide resistance in early and late leaf spot fungi, and his work in characterization of disease resistance in peanut cultivars. Dr. Culbreath has focused his research in areas of greatest need for disease control, and tackled some of the most difficult problems in plant pathology. As a result, his work has received attention around the world for understanding and improving management of TSWV, describing effective use patterns for foliar fungicides in peanuts, and providing for success in deployment of disease resistant cultivars.

Dr. Culbreath is known throughout the peanut industry as a knowledgeable expert on the epidemiology of TSWV in peanuts, and a key contributor in developing the TSWV Risk Index. This index was developed through the teamwork of Dr. Culbreath with virologists, entomologists, plant breeders, and agronomists. Albert's role as the principal plant pathologist on the team is apparent by his authorship of many publications and presentations. The risk index represents a milestone in TSWV management throughout the peanut industry. It has been verified in Virginia and other states, and accepted throughout the country as an educational tool and decision aid for reducing heavy losses of yield to the disease. Of all the work on TSWV by numerous scientists, the TSWV Risk Index has had the greatest impact in reducing losses to the disease throughout the peanut industry.

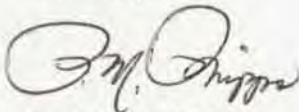
Because of his hard work, Albert Culbreath is well known in academia and commercial industry as a very resourceful person and excellent cooperater. His research is thorough, thoughtfully executed, and yields information of value. In addition to TSWV and the risk index for peanuts, Dr. Culbreath is well known for his discovery of synergism between fungicides at reduced rates in tank mixes, his development of strategies to minimize the risk of pathogens becoming resistant to fungicides, and his work with breeders to define levels of disease resistance in peanut germplasm and new varieties (i.e. Georgia Green, Florida MDR-98, C-99R, Hull, AP-3, Georgia-01R, Tifrunner, Florida-07, Tifguard, and Georganic). His work on synergism of fungicides in tank mixtures provided industry the incentive for marketing several pre-pack mixtures for managing fungicide resistance and improving disease control. The impact of these mixtures have included some

Invent the Future

reductions in the cost of disease management, reductions in levels of fungicide active ingredient in the environment, and effective management of fungicide resistance. Furthermore, the impact of his research has been realized quickly because he presents his work at many meetings, publishes his research promptly in scientific journals, and defines the practical value of his findings regularly in the popular press. Among the university professors that I have known over my career, I can think of no one with a more balanced record of performance in basic and applied research.

In addition to his research to solve problems in peanut disease control, Dr. Culbreath has trained several graduate students by serving as their major professor or as a member of their graduate committee. Albert has been an active member of APRES and the American Phytopathological Society (APS) throughout his career, and he has served as president of APRES and the Southern Division of APS. His students routinely present papers at annual meetings of APRES and the Southern Division of APS, and they have won six awards in presenting their papers in Graduate Student Competition. Albert gives his time freely through contributions as a speaker and participant in regional and state educational meetings and tours for growers, extension agents and industry workers. His desire to provide the peanut industry with timely information for managing TSWV and other diseases has benefited peanut growers and the industry throughout this country. Dr. Culbreath has made many important contributions to science during his career, but I believe his work on TSWV, synergism of fungicides in tank mixes, and screening of peanut germplasm for disease resistance stand out as the most significant of all. Certainly, his work on TSWV has been the most frequently cited in the press and at professional meetings. Without any reservation, I feel that his accomplishments as a leading peanut pathologist and his service to APRES and its membership are most deserving of recognition as a "Fellow" of the society.

Sincerely,



Patrick M. Phipps
Professor of Plant Pathology



The University of Georgia

Telephone (229) 386-3328
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College of Agricultural and Environmental Sciences
Tifton Campus

Department of Crop and Soil Sciences
P.O. Box 748, Tifton, GA 31793-0748
FedEx: 4604 Research Way, Zip 31793

Dr. Bill Branch, Professor
Crop and Soil Sciences Department
University of Georgia
P.O. Box 748
Tifton, GA 31793

Dear Dr. Branch:

It is an honor and privilege to write a letter in support of Dr. Albert Culbreath for Fellowship in the American Peanut Research and Education Society. Albert is certainly a very deserving candidate. I've known Albert since he joined the University of Georgia faculty in 1989. In fact, I actually met Albert when he was a Ph.D. student at North Carolina State University working under Dr. Marvin Beute. I have worked with him on numerous projects and consider him a valuable colleague and outstanding scientist.

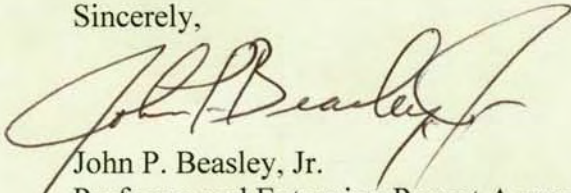
Albert's success and impact as a scientist is known around the world. His research in the area of tospoviruses in peanut has gained him respect and admiration from colleagues in many countries. The impact of his research programs on foliar diseases and spotted wilt disease in peanut has been crucial to the sustainability and success of producers in Georgia and the southeastern United States.

Albert is a quiet individual but his work ethic and dedication to his discipline, Plant Pathology, and to APRES are unmatched and unwavering. He loves his work and it shows. He loves APRES and what it promotes and is committed to our society's success. He has always been willing to do whatever is necessary to keep APRES as the outstanding society that it is. His service as President during a very difficult time was exemplary. His quiet, but steady, leadership was critical to our success.

Albert has served APRES in many different ways. He always has outstanding presentations and usually has graduate students presenting papers as well. His students have won or placed in the graduate student paper competition, which is a testament to his professionalism and commitment to student excellence.

There is no doubt that Albert Culbreath is most deserving of being named a Fellow of APRES. He is a consummate professional and outstanding leader.

Sincerely,

A handwritten signature in dark ink, appearing to read "John P. Beasley, Jr.", written in a cursive style.

John P. Beasley, Jr.
Professor and Extension Peanut Agronomist
Crop and Soil Sciences Department

March 16, 2009

Dr. Todd Baughman, chair
APRES Fellows Committee
P.O. Box 2159
Vernon, TX 76385
-tbaughma@ag.tamu.edu

Dear Dr. Baughman,

Please find enclosed a nomination packet for Dr. Ken Boote for APRES Fellow. I have enclosed the Fellow Nominations information following the APRES guidelines, as well as a vitae provided by Dr. Boote, including a past 15 year publicities list. The requested support letters are also enclosed.

I have known and worked with Dr. Boote since he first came to Florida in 1974. He is a truly outstanding internationally recognized scientist that has focused on physiology of peanuts and other crops. As noted in the nomination packet, he has worldwide recognitions in many areas, especially on modeling on peanuts. Some of his publications are widely cited in peanut and other literature. He has trained numerous other scientists and students, on an international scale. His career focus has been on research (70%) but he has made major contributions in teaching and graduate student training (30%). He has been a PI on almost \$6 mil. in grants in just the past 15 years.

Dr. Boote has been very active in APRES Coop. Science Society of America, and American Society of Agronomy. His many honors and positions with CSSA and ASA are noted in the packet. He and his students have given numerous presentations at APRES meetings, including a 1985 Bailey Award (K.Pixley, et.al.). He has served as an Associate Editor for Peanut Science (1977 – 1983), chair and member of the Bailey Award committee, Publication committee member (1977 – 83), on the technical program committee 1987 meeting (Gainesville) and 1996 meeting (Orlando) and session chairmen. He has six publications in Peanut Science the past 15 years and coauthored a chapter in Advances in Peanut Science (ch.9 – APRES Book).

I could say much more about Dr. Boote's accomplishments, contributions, and awards, but Dr. Bennett's support letter probably does a better job than I could. He states that Dr. Boote is the best peanut

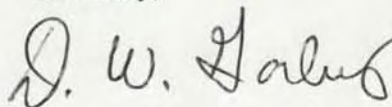
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physiologist/peanut modeler in the world and I fully support that statement. This I fully support and strongly urge Dr. Bootes nomination as a Fellow to APRES.

If I can be of further assistant, please contact me.

Sincerely,

A handwritten signature in cursive script, reading "D. W. Gorbet". A long, thin horizontal line extends from the end of the signature towards the right margin of the page.

D. W. Gorbet


Prof. Emeritus

C. C. Dr. Chad Godsey
chad.godsey@okstate.edu

Fellow Nomination

American Peanut Research and Education Society

NOMINEE: Kenneth J. Boote
Agronomy Department
University of Florida
P. O. Box 110500
Gainesville, Florida 32611-0500
352/392-1811 kjboote@ufl.edu

NOMINATOR: Daniel Wayne Gorbet 
Department of Agronomy
University of Florida
North Florida Research and Education Center
Marianna, Florida 32446
850/482-9904 dgorbet@ufl.edu

BASIS OF NOMINATION:

I. Personal Achievements and Recognitions (10 points)

A. Degrees received:

Purdue University	Crop Physiology	Ph.D.	1974
Purdue University	Crop Physiology	M.S.	1969
Iowa State University	Agronomy	B.S.	1967

B. Professional Positions Held:

1985-Present	University of Florida, Professor
1979-1985	University of Florida, Associate Professor
1974-1979	University of Florida, Assistant Professor
1971-1974	Purdue University, Graduate Research Fellow
1969-1971	U.S. Army, First Lieutenant, Ft. Lewis, WA
1967-1969	Purdue University, Graduate Research Fellow

C. Membership in honorary academic societies:

Alpha Zeta
Gamma Sigma Delta (President of local UF chapter, 1989)

D. Membership in Professional societies:

American Peanut Research and Education Society
American Society of Agronomy
American Society of Plant Biologists
Crop Science Society of America

Soil and Crop Science Society of Florida
Soil Science Society of America

E. Major Honors and Awards Received:

- 2008 Crop Science Research Award, Crop Science Society of America
- 2008 Carl Sprengel Agronomic Research Award, American Society of Agronomy
- 2008 Publication of Enduring Quality Award for 2008, American Agricultural Economics Association
- 2002 University of Florida Research Foundation Professorship Award
- 2001 Senior Faculty Award for Outstanding Research, Gamma Sigma Delta
- 1999 International Award for Distinguished Service to Agriculture, Gamma Sigma Delta, UF chapter nominee for 1999 to National Organization
- 1996 Professorial Excellence Award, University of Florida
- 1990 Fellow, American Society of Agronomy
- 1990 Fellow, Crop Science Society of America
- 1990 Research Achievement Award, University of Florida
- 1984 Gamma Sigma Delta Junior Faculty Award for Outstanding Research, UF
- 1983 Faculty Development Award from UF, study at Agricultural University, Wageningen, The Netherlands
- 1982 American Society of Agronomy, Visiting Scientist Grant Award

II. Professional Achievement in Peanut Research (50 points)

Dr. Boote is a researcher and teacher at the University of Florida who has been active in peanut physiology research since 1974. He has maintained a consistent significant peanut research program, although his job assignment is not crop-specific and has taken him into other commodities as well as other issues such as global climate change and Best Management Practices. He has also developed a significant crop modeling program, which has consistently featured peanut crop growth modeling. This write-up will highlight different phases of Dr. Boote's research on peanut, first focusing on peanut physiology and then on his peanut crop growth modeling activities.

During the first 10 years of his career, Dr. Boote participated actively with Drs. McCloud and Duncan and students on peanut growth analyses to evaluate aspects of peanut cultivar improvement, as described in the paper written by Duncan entitled: *Physiological aspects of peanut yield improvement*. Crop Sci. 18:1015-1020 (1978). He collaborated with entomologists and pathologists to evaluate pest damage issues and leafspot disease damage on peanut, resulting in a paper that Dr. Boote wrote entitled: *Photosynthesis of peanut canopies as affected by leafspot and artificial defoliation*. Agron. J. 72:247-252 (1980). His paper in Phytopathology: *Coupling pests to crop growth simulators to predict yield reductions*. Phytopathology 73:1581-1587 (1983) has been widely-cited and is one of the most cited papers among his 162 refereed publications. In this and later papers, he proposed generic relationships for incorporating different types of pest damage into crop growth models. This work was particularly important in

that it simplified the complexities of simulating pest damage effects on crop growth and yield that provided a practical approach for estimating yield losses associated with time-varying damage to different parts of the crop. This approach has been adopted by crop modelers around the world. Dr. Boote developed and published a peanut crop growth staging system that is widely used by researchers and is also one of his most cited publications: *Growth stages of peanut (Arachis hypogaea L.)*. Peanut Sci. 9:35-40 (1982). He collaborated with Dr. Jerry Bennett and his graduate students on peanut water relations studies that resulted in papers by Bennett entitled: *Alterations in the components of peanut leaf water potential during desiccation*. J. Exp. Bot. 32:1035-1043 (1981), and *Relationships among water potential components, relative water content, and stomatal resistance of field-grown peanut leaves*. Peanut Sci. 11:31-35 (1984). His wide-ranging experiences with peanut led to an invitation to Dr. Boote to write a chapter for the book *Peanut Science and Technology* entitled: "Irrigation, water use, and water relations." He wrote two additional chapters on peanut water relations, physiology, and irrigation published in two other books listed below.

Boote, K. J., J. R. Stansell, A. M. Schubert and J. F. Stone. 1983. Chapter 7. Irrigation, water use, and water relations. pp. 164-205. IN: *Peanut Science and Technology*, H. E. Pattee and C. T. Young (eds.), American Peanut Research and Education Society, Yoakum, TX.

Boote, K. J. 1983. Chapter 8. Peanut. pp. 255-286. IN *Crop-Water Relations*, I. D. Teare and M. M. Peet (eds.), John Wiley & Sons, New York.

Boote, K. J. and D. L. Ketring. 1990. Peanut. In pp. 675-717. *Irrigation of Agricultural Crops*, B. A. Stewart and D. R. Nielsen (eds). American Society of Agronomy, Madison, WI.

In the mid-1980s, Dr. Boote's research interests shifted into crop growth modeling along with crop physiology research. He adapted the SOYGRO model for peanut, converting it into the PnutGRO crop growth model, a tool that became widely used in research in the USA and around the world. The first version of this model was published in the 1986 paper listed below, with an update in 1991. Boote and Jones used the model to evaluate cultivar traits to fit crops in semi-arid environments (1986 paper), and Williams and Boote used the models to evaluate physiological possibilities for yield potential in peanut (1995 paper). The 1998 paper by Boote is the full description of the mechanistic model CROPGRO which also predicts peanut.

Boote, K. J., J. W. Jones, J. W. Mishoe, and G. G. Wilkerson. 1986. Modeling growth and yield of groundnut. Pages 243--254. IN *Agrometeorology of Groundnut: Proceedings of an International Symposium*, 21-26 Aug 1985, ICRISAT Sahelian Center, Niamey, Niger. ICRISAT, Patancheru, A.P. 502 324, India.

Boote, K. J., and J. W. Jones. 1986. Applications of, and limitations to, crop growth simulation models to fit crops and cropping systems to semi-arid environments. p. 63-75. In F. R. Bidinger and C. Johansen (eds.) *Drought research priorities for the dryland tropics*. International Crops Research Institute for the Semi-Arid Tropics, Patancheru, A.P. 502 324, India.

Boote, K. J., J. W. Jones, and P. Singh. 1991. Modeling growth and yield of groundnut - state of

the art. pp. 331-343. IN Groundnut - A global perspective: Proceedings of an International Workshop, 25-29 Nov. 1991, ICRISAT Center, INDIA.

Williams, J. H., and K. J. Boote. 1995. Chapter 9. Physiology and Modelling--Predicting the "Unpredictable Legume". pp. 301-353. In: H. E. Pattee and H. T. Stalker (Eds.) Advances in Peanut Science. Amer. Peanut Res. and Educ. Soc., Stillwater, OK 74078.

Boote, K. J., J. W. Jones, G. Hoogenboom, and N. B. Pickering. 1998. The CROPGRO Model for Grain Legumes. pp. 99-128. In G. Y. Tsuji, G. Hoogenboom, and P. K. Thornton (eds.) Understanding Options for Agricultural Production. Kluwer Academic Publishers, Dordrecht.

Dr. Boote's expertise in water relations, crop physiology, and peanut crop growth modeling led to invitations to participate in the international peanut research community at ICRISAT, where he presented the 1986 papers listed above, using the peanut model to evaluate drought research priorities. He, along with Dr. J. W. Jones, led a crop modeling course at ICRISAT center in 1987, to train ICRISAT and Indian scientists in the use of crop growth models. In 1987, he traveled to India to advise Indian scientists on conduct of peanut growth experiments at eight locations. He worked with natural resource scientists at the ICRISAT center to calibrate and improve the peanut crop model for Indian conditions, and advised Dr. Piara Singh as a post-doctorate for 1 year in Florida. This effort resulted in two seminal papers co-authored with Dr. Singh entitled: *Evaluation of the groundnut model PNUTGRO for crop response to water availability, sowing dates, and seasons*. Field Crops Res. 39:147-162 (1994), and *Evaluation of the groundnut model PNUTGRO for crop response to plant population and row spacing*. Field Crops Res. 39:163-170 (1994). More importantly, the focus on reducing yield gaps in peanut production in India has borne fruit over the past 20 years, as India is now nearly self-sufficient in oil-seed production with peanut being a major contributor. These efforts have also borne fruit in an awareness of crop growth modeling as a potential tool for agro-advisories distributed by the agrometereological service. In past 3-4 years, there is country-wide demand in India for training in crop modeling to be used with weather data for extension delivery information.

Since the mid-1980s, Dr. Boote has continued to work with peanut crop growth modeling in Florida, by periodically releasing improved versions of the peanut crop growth model as part of the Decision Support System for Agrotechnology Transfer (DSSAT). Field tests of the peanut crop growth model were made in Florida over multiple years and locations, as illustrated in the paper by Gilbert entitled: *On-farm testing of the PNUTGRO crop growth model in Florida*. Peanut Science 29:58-65 (2002). While the crop models have not yet made it to the field-level, they are valuable tools in research. During this time, Dr. Boote collaborated with students on peanut experiments that involved water limitations, leafspot disease, and elevated temperature effects. His graduate students, Kevin Pixley evaluated growth of different cultivars relative to leafspot disease, as illustrated in the papers entitled: *Disease progression and leaf area dynamics of four peanut genotypes differing in resistance to late leafspot* Crop Sci. 30:789-796 (1990), and *Growth and partitioning characteristics of four peanut genotypes differing in resistance to late leafspot*. Crop Sci. 30:796-804 (1990). His student Gaetan Bourgeois evaluated leafspot disease effects on peanut growth and yield in the paper, *Growth, development, yield, and seed quality of Florunner peanut affected by late leaf spot*. Peanut Science 18:137-

143 (1991). His graduate student, Peter Sexton, documented how dry pegging zone affected peanut pod formation, in a paper entitled: *The effect of dry pegging zone soil on pod formation of Florunner peanut*. Peanut Science 24:19-24 (1997), which paper won the Bailey Award.

In Florida, Dr. Boote and his USDA collaborator Dr. Allen, attracted good grant support over a 20 year period to conduct elevated temperature effects on crops including peanut in sunlit, controlled-environment chambers and in temperature-gradient greenhouses. An important paper on heat tolerance of peanut was authored by his post-doctorate Prasad entitled: *Supra-optimal temperatures are detrimental to peanut (Arachis hypogaea L) reproductive processes and yield at ambient and elevated carbon dioxide*. Global Change Biology 9:1775-1787 (2003). Recent work has also documented genetic and temperature effects on peanut seed germination, written by post-doctorate Prasad entitled: *Influence of soil temperature on seedling emergence and early growth of peanut cultivars in field conditions*. J. Agronomy and Crop Science 192:168-177 (2006). Dr. Boote's latest graduate student, Barry Morton, wrote a paper entitled: *Impact of seed storage environment on field emergence of peanut (Arachis hypogaea L.) cultivars*. Peanut Science 35:108-115.

Dr. Boote, since 1997, has been actively involved in a Peanut CRSP project entitled "Simulation of Peanut Cropping Systems to Improve Production Efficiency and enhance Natural Resource Management," and has worked with host country collaborators in Ghana and Benin. In this project, he helped host country scientists mature into good scientists capable of assisting in their own country's agricultural development. He advised experiments to document the extent of yield loss in Ghana and Benin due to leafspot disease, soil water deficiency, phosphorus fertility, and inadequate stands. The CROPGRO-peanut model was used in some cases as an evaluation tool to highlight the likely yield losses. Four peanut papers resulting from this collaboration include:

Naab, J. B., P. Singh, K. J. Boote, J. W. Jones, and K. O. Marfo. 2004. Using the CROPGRO-peanut model to quantify yield gaps of peanut in the Guinean savanna zone of Ghana. Agron. J. 96:1231-1242.

Adomou, M., P. V. V. Prasad, K. J. Boote, and J. Detongnon. 2005. Disease assessment methods and their use in simulating growth and yield of peanut crops affected by foliar disease in Benin. Annals of Applied Biology 146: 469-479.

Naab, J. B., F. K. Tsigbey, P. V. V. Prasad, K. J. Boote, J. E. Bailey, and R. L. Brandenburg. 2005. Effects of sowing date and fungicide application on yield of early and late maturing peanut cultivars grown under rainfed conditions in Ghana. Crop Protection 24:325-332.

Naab, J. B., K. J. Boote, P. V. V. Prasad, S. S. Seini, and J. W. Jones. 2009. Influence of fungicide and sowing density on the growth and yield of two groundnut cultivars. J. Agricultural Science 147:179-191 (2009).

Ghanian scientist, Dr. Jesse B. Naab, visited Florida on 4 or 5 occasions for 2-week visits, and most recently on an 8-month sabbatical, during which time he presented at the APRES meeting, presented at the Agronomy meetings, and wrote papers. Dr. Boote's guidance has helped Dr.

Naab, and therefore the country of Ghana, become a success story for Peanut CRSP, because the Ghanaian farmers' appetite for new technology has been encouraged with 5 years of on-farm demonstrations of fungicide, phosphorus, and improved cultivar comparison. The Ghanaian agricultural research organization and the Ghanaian Agricultural Ministry are ready to try a much larger program. In the current Peanut CRSP project, Dr. Boote has organized a group effort with CRSP scientists Mark Burow and Rick Brandenburg and host-country scientist (at three sites in Ghana and one site in Burkina Faso), to conduct herbicide by fungicide trials with new technologies and to conduct cultivar screening trials at the four sites.

Recently, Dr. Boote has worked to improve the linkage of the CROPGRO-Peanut model to the LATESPOT leafspot epidemic model developed by his graduate student Gaetan Bourgeois. He and Dr. John Erickson, new scientist at Florida, are conducting research on leafspot epidemic progress and leafspot disease effects on peanut growth and yield of new peanut cultivars differing in leafspot resistance. Dr. Boote is re-formulating the leafspot disease model coupled to the crop model, with the goal of predicting leafspot disease epidemics from current weather data. Dr. Boote is also working with ICRISAT and Australian scientists on this same topic as part of an Australian Pacific Network project on "Climate and Crop Disease Risk Management."

Dr. Kenneth Boote has extraordinary ability to integrate crop physiology with crop growth modeling, and has achieved an outstanding impact on our understanding of peanut physiology in part because of his ability to integrate and think in a systems manner. He has shown the ability to collaborate with a wide range of disciplines and wide range of scientists, and particularly has developed an excellent interaction with fellow researchers including Dr. Jones in crop modeling, and Dr. Allen, in the climate effect area. He has shown the desire and ability to interact with scientists from other countries and to assist them in a technology transfer mode. He is a highly productive researcher as exemplified by his career total publication list: Refereed journal articles (162), non-refereed publications (62), book chapters (34), books edited (3), monographs (6), and >400 abstracts. Peanut has been a significant focus of his research with peanut-related publications being 39 refereed articles, 10 chapters, 2 monographs, and 6 non-refereed. He achieved considerable grant support, \$5,873,000 as PI and \$12,186,000 total since 1985, to support climatic effects studies and crop modeling projects.

III. Achievements in Secondary Area of Teaching and Crop Model Training (10 points)

Dr. Boote has a joint research and teaching responsibility (80:20) at the University of Florida, where he annually teaches a graduate crop physiology course and periodically teaches jointly with Dr. Jones a crop simulation modeling course. Since 1985, he has supervised 16 Ph.D. and 19 M.S. graduate students in their research, and has served as a member of 74 Ph.D. and 18 M.S. student committees. A number of those students have conducted research on peanut to include Hang An, Kevin Pixley, Gaetan Bourgeois, Joseph DeVries, Li Ma, Peter Sexton, Rob Gilbert, Lakshmi Jakkula, and Barry Morton. He has advised post-doctorates/visiting scientists in conduct of peanut research, to include Piara Singh, P.V.V. Prasad, and Gopal Kakani. He served as external examiner for international Ph.D. dissertations conducted on peanut by Scott Chapman (Australia), Mike Bell (Canada-Australia), and Monica R. Murata (Zimbabwe). Dr. Boote advised Thai Royal Jubilee Ph.D. graduate students, Jakarat Anothai, and C. Putto, who visited

the USA for a year in 2006-2007. These two peanut plant breeding students recently graduated and together recently published 4 papers using the CROPGRO-Peanut model to evaluate cultivar characteristics of peanut for yield potential in different environments.

Since the mid-1980s, Dr. Boote has been a co-investigator with J. W. Jones, his colleague in the UF Agricultural and Biological Engineering Department, on a USDA-AID project entitled International Benchmark Sites Network for Agrotechnology Transfer (IBSNAT). The SOYGRO, PNUTGRO, and BEANGRO models were a major focus and product of this project because they were used in a systems approach to integrate effects of weather, soils, cultural management, and crop genetics on crop production. Also, since the mid-1980s, Dr. Boote has collaborated with Dr. J. W. Jones to organize, develop, and conduct a 10 to 12-day course on Crop Growth Simulation, at various venues (University of Florida, the International Fertilizer Development Center (IFDC) in Muscle Shoals, AL, and the University of Georgia's Continuing Education Center – Griffin). Scientist lecturers involved in this modeling course include Jones and Boote from UF, Hoogenboom from the University of Georgia, Paul Wilkens and Upendra Singh from IFDC, and Tony Hunt from University of Guelph. These courses are attended by about 30 scientists per course from the many countries. Training courses of 2-weeks duration on "Systems Analysis and Crop Modeling for Agrotechnology Transfer" were organized and given in Taiwan (1986), India (1987), Republic of South Africa (1990, 1995), Togo (1998), Egypt (1998), Ghana (2005), Peoples Republic of China (2006), Thailand (2007), and in the USA (Univ. of Florida - 1990, 1994, Univ. of Hawaii - 1992, Muscle Shoals, AL - 1991, 1993, 1995, 1997, 1999, Univ. of Georgia - 1996, 1998, 2002, 2004, 2006, and 2008). These short courses have played a major role in teaching hundreds of researchers the techniques for simulating crop growth and for applying crop models in research understanding and technology transfer. Dr. Boote is an active participant in ICASA, the International Consortium for Agricultural Systems Application, which has collaborators throughout the world, and is the successor organization to IBSNAT.

Dr. Boote's activities on climate change, crop modeling, and peanut science and technology has led to invitations to give presentations at agrometeorology conferences (Japan, Argentina, India), international crop science or crop modeling symposia (Australia, Germany, The Netherlands). It has led to wide ranging collaborations with scientists from Australia, France, Germany, Spain, India, China, Thailand, Egypt, South Africa, Ghana, and Benin, in areas of crop model improvement, climate change, or technology transfer (for example, to improve peanut yield in Ghana and Benin, USAID Peanut CRSP project).

IV. Service to the Profession (30 points)

A. Service to American Peanut Research and Education Society

Associate Editor for Peanut Science (1977-1983)

Bailey Award Committee (Chair and Member)

Member, Publications Committee (1977-1983)

Technical Program Committee for 1987 APRES Annual Meeting in Gainesville, and 1996 APRES Annual Meeting in Orlando

B. Service to Other Professional Societies

American Society of Agronomy (Assoc. Editor, 1985-1990; Software Scene Coordinator, 1992; Chair, Div. A-3, 1998; Member of Fellows Selection Committee, 1992, 1993; Member 1996 and Chair 1997 of ASA Agronomic Service Award Committee; Member Crops and Soils Magazine Journalism Award Committee, 1983-1985; Co-organizer and Co-editor of 1998 Symposium and ASA-CSSA Special Publication "Physiology and Modeling Kernel Set in Maize")

Crop Science Society of America (Chair, Division C-2, 1989; Assoc. Editor, 1995-2000; Crop Science Research Award Committee, 1991, 1992; Member CSSA Fellows Selection Committee, 1987, 1988, 1992, 1993, 1999, 2000)

Co-organizer/Co-editor of International Symposium/Book: "Physiology and Determination of Crop Yield," June 10-14, 1991, sponsored and published by ASA-CSSA-SSSA

Soil and Crop Science Society of Florida, President-Elect (2004), President (2005), Treasurer (2006, 2007), Editor of Proceedings (2008-2009)

Organizer and Host for Biological Systems Simulation Conference (1981, 2004)

C. Service to International, National, and University

1. Internationally, Dr. Boote has served in a technology transfer role, working with host-country scientists in the Peanut CRSP project. He has assisted international research organizations and many international scientists relative to peanut research needs. He has served as mentor to visiting students (3 since 2000), post-doctorates (8 since 2000), visiting scholars (7 since 2000) and as external advisor for several dissertations. He participates in 2-week crop modeling training courses every 1 to 2 years.
2. Nationally, Dr. Boote provides important climate impact information to U.S. scientists, and in 2007-2008, was a major contributor to the USDA's Synthesis Assessment Product 4.3, Climate Change Impacts on Crop Production in the USA, which was released in 2008. He provided literature review, and developed important tables projecting yield response to CO₂ and temperature increase for a number of crops including peanut.
3. At University level, Dr. Boote served four 2-year terms on the University Senate in past 30 years, as Chair of the IFAS International Programs Advisory Team (2003-2005), as Chair of the York Distinguished Lecturer Series (2005-2009), IFAS Computer Users Advisory Committee (Chair, 1982-83, member 1982-1986). In his Agronomy Department, he is the Chair of the Physiology-Ecology program area (1998 to 2009), Chair of the Departmental Awards Committee (1991-1996, 2007-2009), Member of the Agronomy Department Graduate Selection Committee (1977 to present). He served as Graduate Coordinator for 9 months in 1988, Assistant Chair (1988-1994), and Acting Chair of the Department (1992).

CURRICULUM VITAE AND PUBLICATIONS

Kenneth J. Boote
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 E-mail - KJBOOTE@ufl.edu

1. EDUCATIONAL BACKGROUND:

Purdue University	Crop Physiology	Ph.D. 1974
Purdue University	Crop Physiology	M.S. 1969
Iowa State University	Agronomy	B.S. 1967

2. EMPLOYMENT:

1985-Present	University of Florida, Professor	Tenured
1979-1985	University of Florida, Associate Professor	Tenured
1974-1979	University of Florida, Assistant Professor	Tenure-accruing
1971-1974	Purdue University, Graduate Research Fellow	
1969-1971	U.S. Army, First Lieutenant, Ft. Lewis, WA	
1967-1969	Purdue University, Graduate Research Fellow	

3. BRIEF DESCRIPTION OF JOB DUTIES:

- a) **Research (70%):** Conduct a research program on applied and basic crop physiology of major field crops in Florida (See specializations listed below).
- b) **Teaching (30%):** Teach AGR 6442C "Physiology of Agronomic Plants" annually. Advise graduate students (11 Ph.D. and 16 M.S). Served on 44 Ph.D. and 14 M.S. committees since 1985. Serve on Agronomy Graduate Selection Committee.

4. AREAS OF SPECIALIZATION: Crop Physiology and Crop Growth Modeling

Conduct research on photosynthesis, respiration, whole-plant growth, C and N metabolism of grain legumes and forages in response to global climate change factors (CO₂-enrichment, temperature, drought) and genotypic attributes, studied in controlled-environment chambers, field, and temperature-gradient greenhouses.

Develop and test crop growth models for purposes of enhancing physiological understanding, improving crop management strategies, evaluating physiological traits for genetic improvement, and providing decision-support tools for use by industry.

5. HONORS

- 2008 Crop Science Research Award, Crop Science Society of America
- 2008 Carl Spengel Agronomic Research Award, American Society of Agronomy
- 2008 Publication of Enduring Quality Award for 2008, American Agricultural Economics Association
- 2002 University of Florida Research Foundation Professorship Award
- 2001 Senior Faculty Award for Outstanding Research, Gamma Sigma Delta
- 1999 International Award for Distinguished Service to Agriculture, Gamma Sigma Delta, UF chapter nominee for 1999 to National Organization
- 1996 Professorial Excellence Award, University of Florida
- 1990 Fellow, American Society of Agronomy
- 1990 Fellow, Crop Science Society of America
- 1984 Gamma Sigma Delta Junior Faculty Award for Outstanding Research, UF

6. PROFESSIONAL SOCIETIES AND OFFICES HELD:

- American Society of Agronomy (Assoc. Editor, 1985-1990; Software Scene Coordinator, 1992; Chair, Div. A-3, 1998)
- Crop Science Society of America (Chair, Division C-2, 1989; Assoc. Editor, 1995-2000), Co-organizer/Co-editor of International Symposium/Book: "Physiology and Determination of Crop Yield," June 10-14, 1991, sponsored and published by ASA-CSSA-SSSA.
- American Society of Plant Physiologists
- American Peanut Research and Education Society (Assoc. Editor, 1977-1983)
- Soil Science Society of America, Soil and Crop Science Society of Florida

7. GRANTS RECEIVED (from 1985 to present)

- \$5,873,000 as PI
- \$12,186,000 total (includes others as PI)
- Granting Agencies: U.S.-DOE, USDA, DOE-NIGEC, NRI-Competitive Grants, Cooperative States Research Service (CSRS), American Soybean Association, United Soybean Board, Iowa-Illinois Soybean Boards, Georgia and Florida Commodity Commissions for peanut, National Peanut Checkoff, U.S. AID, U.S.-EPA, Florida DACS.

A. Major Grants in Climate Change Area in Last 15 Years:

"Soybean Response to Global Climate Change - Elevated Temperature and Carbon Dioxide," by K. J. Boote (PI), J. W. Jones, J. M. Bennett, R. B. Curry, and L. H. Allen, Jr., USDA/NRICG, \$100,000, 9/1/91 to 8/31/93.

"Carbon Balance and Growth Adaptation of Contrasting C₃ and C₄ Perennial Forage Species to Increased CO₂ and Temperature," by K. J. Boote (PI), L. H. Allen, Jr., T. R.

Sinclair, and L. E. Sollenberger, National Institute for Global Environmental Change, Southeast Regional Center, Department of Energy, \$294,846, 7/1/93 to 6/30/97.

"Rice Responses to Global Climate Change: Drought Stress, Water Management and Carbon Dioxide," by J. T. Baker (PI), K. J. Boote, L. H. Allen, Jr., and N. B. Pickering, National Research Initiative Competitive Grants Program, 95,000, 9/1/94 to 8/31/97.

"Acclimation of Photosynthesis and Respiration in Rice to Elevated Carbon Dioxide," by K. J. Boote (PI), L. H. Allen, Jr., J. T. Baker, G. E. Bowes, N. B. Pickering, and J. C. Vu, National Research Initiative Competitive Grants Program, \$110,000, 9/1/95 to 8/31/97.

"Increasing Rice Yields: How to Cope with Heat," by K. J. Boote (PI) and L. H. Allen, Jr. (Co-PI), International Rice Research Institute, \$53,500, 8/01/97 to 12/31/01.

"Supra-Optimal Temperature Causes ROS Accumulation and Seed Failure in Soybeans," by B. Hauser (PI), K. J. Boote (Co-PI), L. H. Allen, and J. C. Vu, USDA-NRI, \$340,000, 9/1/08 to 8/31/11.

B. Major Grants in Crop Modeling Area in Last 15 Years:

"Best Management Practices for Improving Soybean Profitability and Reducing Risks of Environmental Effects," J. W. Jones (PI), K. J. Boote (co-PI) and many others in the USA United Soybean Board, \$1,458,986, 6/5/94 to 9/30/98.

"Integrating Genetics and Precision Farming Information into Decision Support Systems," J. W. Jones (PI), K. J. Boote (co-PI) and many others in the USA (7 states in USA involved), United Soybean Board, \$740,000, 01/01/99 to 12/31/00.

"Simulation of Peanut Cropping Systems to Improve Production Efficiency and Enhance Natural Resource Management," K. J. Boote (PI) and J. W. Jones (co-PI), U.S. Agency for International Development - Peanut CRSP Program, \$665,877, 8/1/96 to 7/31/07.

"Production Research to Increase Soybean Yields," K. J. Boote (PI) and J. W. Jones (co-PI), Iowa and Illinois Soybean Promotion Boards, \$170,993, 4/01/97 to 3/31/00.

"Modeling Growth and Yield Response of Grain Legumes under water-limited Environments," K. J. Boote (PI), US-Spain Scientific Exchange Program, \$6,960, 10/1/99 to 9/30/00.

"Methods and Models for Integrated Assessment," L. O. Mearns (PI), J. W. Hansen, J. W. Jones, K.J. Boote, T. Kittel, and D. Nychka (co-PIs), NSF Global Change Research, \$900,457, 7/01/00 to 6/30/03.

"Testing and Documenting the Use of Crop Growth Models as BMP Tools for Predicting Crop Production, N Uptake, and Nitrate," K. J. Boote (PI), Florida Dept. of Agriculture and Consumer Services (DACS), \$163,500, 7/17/00 to 7/16/03.

"Measuring and assessing soil carbon sequestration by agricultural systems in developing countries," J. W. Jones (PI), and K. J. Boote (Co-PI), USAID-SM-CRSP, \$1,078,563, 7/1/01 to 6/30/07.

"Evaluating and improving CROPGRO-Soybean and CERES-Maize models for predicting growth and yield responses to climate change factors," K. J. Boote and J. W. Jones, (PIs), Great Plains NIGEC, \$450,000, 7/1/01 to 6/30/04.

"Integration and verification of water quality and crop yield models for BMP planning," J. W. Jones and K. J. Boote (PIs), Florida Dept. of Agriculture and Consumer Services (DACS), \$1,095,527, 10/1/04 to 12/31/07.

"Testing and improving a perennial forage model for predicting forage production, N uptake, N leaching, and soil organic matter," USDA-CREES, \$145,400, 9/15/04 to 9/14/08.

8. INTERNATIONAL ACTIVITIES

My international activities have emphasized crop modeling, global climate change issues, and exchange of knowledge/technology transfer on grain legume physiology. For a 10-year period beginning in 1985, I was a co-investigator with J. W. Jones, my colleague in the UF Agricultural and Biological Engineering Department, on a USDA-AID project entitled International Benchmark Sites Network for Agrotechnology Transfer (IBSNAT). The SOYGRO, PNUTGRO, and BEANGRO models were a major focus and product of this project because they were used in a systems approach to integrate effects of weather, soils, cultural management, and crop genetics on crop production.

Beginning in 1984, I started collaborating with Dr. J. W. Jones to organize, develop, and conduct a 10 to 12-day course on Crop Growth Simulation. We initiated a cooperative arrangement between the University of Florida and the International Fertilizer Development Center (IFDC) in Muscle Shoals, AL, and the University of Georgia's Continuing Education Center - Griffin, hosting the course in alternating years. Faculty lecturers involved in this modeling course include James Jones and myself from UF, Gerrit Hoogenboom of the University of Georgia, Paul Wilkens of IFDC, Tony Hunt of University of Guelph, Joe Ritchie formerly of Michigan State, and Bill Batchelor of Mississippi State University. These courses are attended by about 30 scientists per course from the many countries. Training courses of 2-weeks duration on "Systems Analysis and Crop Modeling for Agrotechnology Transfer" were organized and given in Taiwan (1986), India (1987), Republic of South Africa (1990, 1995), Togo (1998), Egypt (1998), and in the USA (Univ. of Florida - 1990, 1994, Univ. of Hawaii - 1992, Muscle Shoals,

AL - 1991, 1993, 1995, 1997, 1999, Univ. of Georgia - 1996, 1998). Since 2000, I helped organize and teach the 2-week course seven times (four times at University of Georgia, Ghana, Peoples Republic of China, and Thailand) and with Dr. Jones I co-taught it six times as a listed course for credit at UF (2002, 2004, 2005, 2006, 2007, 2008). These short courses have played a major role in teaching several hundred researchers the techniques for simulating crop growth and for applying crop models in research understanding and technology transfer.

My activities on climate change and crop modeling has led to invitations to give presentations at agrometeorology conferences (Japan, Argentina, India), international crop science or crop modeling symposia (Australia, Germany, The Netherlands). It has led to wide ranging collaborations with scientists from Australia, France, Germany, Spain, India, China, Thailand, Egypt, South Africa, Ghana, and Benin, in areas of crop model improvement, climate change, or technology transfer (for example, to improve peanut yield in Ghana and Benin, USAID Peanut CRSP project). A 7-month sabbatical with the Dept of Theoretical Production Ecology, Wageningen, The Netherlands in 1983 was a major impetus initiating my shift into crop modeling. I have developed a long-standing collaboration with Federico Sau (Spain) to improve crop models for faba bean, soybean, and maize in response to climate and drought. I am an active participant in ICASA, the International Consortium for Agricultural Systems Application, which has collaborators throughout the world.

9. **CREATIVE WORKS – Crop Simulation Models**

I have jointly collaborated with others to develop computer models that simulate dynamic growth and yield of legume and nonlegume crops (peanut, soybean, dry bean, faba bean, bahiagrass, cotton, tomato). I have co-development responsibility for the CROPGRO model which has modules for the various crops and processes. The Boote et al. (1998) references are a good source of description of the principles of these models. References (see below) describe the most recent models developed and improved for sweet corn (Lizaso et al., 2007), CERES-Maize (Lizaso et al., 2005), bahiagrass (Rymph et al., 2004), and faba bean (Boote et al., 2002). These models are the basis of our Decision Support System for Agrotechnology Transfer software (Jones et al., 2003; Hoogenboom et al., 1994), used for various training courses, both on and off-campus. DSSAT Version 3.0 was released in 1994, Version 3.5 in 1999, Version 4.0 in 2004, and Version 4.5 is about to be released, with volumes of documentation, each having chapters describing major components of the system (Boote et al., 2004). I co-authored several chapters pertaining to modeling crop growth and partitioning (Boote et al., 2004), water balance and water stress (Boote et al., 2008), and N balance and N-fixation (Boote et al., 2008). I have responsibility for model improvement as well as testing against field data. The following journal papers document these efforts to evaluate and improve the models for soybean (Timsina et al., 2007; Pederson et al., 2004; Ruiz-Nogueira et al., 2001), maize (Lizaso et al., 2005; Lopez-Cedron et al., 2005; Lopez-Cedron et al., 2008), peanut (Naab et al., 2004; Gilbert et al., 2002), and evapotranspiration processes (Sau et al., 2004).

10. PUBLICATIONS (last 15 years are listed)

Career totals: Refereed journal articles (162), non-refereed publications (62), book chapters (36), books edited (3), monographs (6), and >300 abstracts.

Refereed Publications

- Anothai, J., A. Patanothai, K. Pannangpetch, S. Jogloy, K. J. Boote, and G. Hoogenboom. 2009. Multi-environment evaluation of peanut lines by model simulation with the cultivar coefficients derived from a reduced set of observed field data. *Field Crops Res.* 110:111-121.
- Naab, J. B., K. J. Boote, P. V. V. Prasad, S. S. Seini, and J. W. Jones. 2009. Influence of fungicide and sowing density on the growth and yield of two groundnut cultivars. *J. Agricultural Science* 147:179-191.
- Putto, C., A. Pathanothai, S. Jogloy, K. Pannangpetch, K. J. Boote, and G. Hoogenboom. 2009. Determination of efficient test sites for evaluation of peanut breeding lines using the CSM-CROPGRO-peanut model. *Field Crop Res.* 110:272-281.
- Anothai, J., A. Patanothai, S. Jogloy, K. Pannangpetch, K. J. Boote, and G. Hoogenboom. 2008. A sequential approach for determining the cultivar coefficients of peanut lines using end-of-season data of crop performance trials. *Field Crops Res.* 108:169-178.
- Anothai, J., A. Patanothai, K. Pannangpetch, S. Jogloy, K. J. Boote, and G. Hoogenboom. 2008. Reduction in data collection for determination of cultivar coefficients for breeding applications. *Agricultural Systems* 96:195-206.
- Kakani, V. G., K. J. Boote, K. R. Reddy, and D. J. Lang. 2008. Response of bahiagrass carbon assimilation and photosystem activity to below optimum temperatures. *Functional Plant Biol.* 35:1243-1254.
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Institute of Food and Agricultural Sciences
Agronomy Department

Dr. Dan W. Gorbet
Department of Agronomy
North Florida Research and Education Center
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Marianna, Florida 32446-7906

304 Newell Hall
PO Box 110500
Gainesville, FL 32611-0500
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Dear Dr. Gorbet:

It is certainly my honor and pleasure to provide this letter in support of your nomination of Dr. Kenneth J. Boote as Fellow of the American Peanut Research and Education Society (APRES). I have known Dr. Boote for 30 years, early on working closely with him on research and teaching projects before more recently serving as his Department Chair for the past 17 years. Dr. Boote is, without question, one of the most outstanding scientists and teachers I have observed during my career and he is especially well-qualified for this distinguished award. In fact, when you asked if I would write a letter in support of the nomination I was most surprised that Dr. Boote was not already a Fellow of APRES. I had just assumed, obviously incorrectly, that honor had been bestowed on Dr. Boote years ago.

A look at Dr. Boote's attached resume reveals a 35-year career filled with extraordinary productivity resulting from research and teaching programs that have been well-focused, effectively-implemented, and that are most relevant to global crop production issues. He is indeed a national and international authority in the field of yield and stress physiology and of crop growth simulation modeling. The accomplishments represent a balanced package of research, formal classroom teaching, training of students and other professionals, technology transfer, publications in the scientific literature, invited speeches and presentations, and the securing and implementation of grants and contracts.

From the time that Dr. Boote began his career at the University of Florida in 1974 the peanut crop has been a primary focus of his work. He is one of the most highly-regarded crop physiologists in the world, and actually one of very few physiologists who has spent a major portion of their entire career working on the peanut crop. His contributions and accomplishments have been many and they have greatly enhanced our understanding of the peanut crop, especially from a physiological understanding of the crop's response to the environment and various stress factors (especially water, leaf diseases, temperature, carbon dioxide).

Dr. Boote is developer of the broadly used PNUT-GRO (now CROPGRO-Peanut) crop simulation model, one of few existing peanut simulation models. The peanut modeling work of Dr. Boote and his colleagues has not only elucidated the basic physiological and growth responses of the peanut crop to the environment, but it has integrated the individual metabolic and growth responses into a much better understanding of growth, productivity and yield under real-world, crop production situations. Development of this peanut simulation model resulted in the collection and organization of a wealth of information on peanut into a mechanistic model.

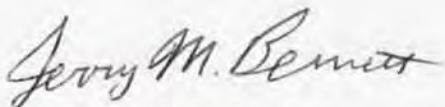
The use of CROPGRO-Peanut in many locations around the globe has revealed changes in cultural practices that might be employed to increase peanut productivity under various environments and climatic conditions. The development of the PNUTGRO simulation model was indeed classic, pioneering research.

An international flavor in Dr. Boote's career is notable throughout the attached resume. His involvement in international activities has been wide-ranging including programs and activities in India, Argentina, Australia, Japan, Germany, Costa Rica, United Kingdom, Spain, Taiwan, South Africa, China, Thailand, Ghana, Benin, Bangladesh, Germany, Togo, Egypt and others. The USAID Peanut CRSP program is but one excellent example of relevant international, interdisciplinary research and associated technology transfer programs that have led to the identification of yield limitations for peanut production in Ghana and Benin. This project has led to practical approaches to overcoming identified yield barriers (leaf diseases in this case) in this important crop in these countries. Dr. Boote's work in India and his collaborative efforts with colleagues at ICRISAT is another example. The training of international graduate students, postdoctoral associates, and visiting scientists has been a strength of Dr. Boote's program. Many international scientists and students trained by Dr. Boote have returned to respected positions in their home countries and have subsequently made outstanding contributions of their own.

Dr. Boote has been recognized with many awards and honors (see section I of the nomination packet). Particularly impressive, however, were two distinguished awards he received only last year from the American Society of Agronomy (the Carl Sprengel Award) and the Crop Science Society of America (Crop Science Research Award). It is highly unusual for one individual to receive two such distinguished awards from the tri-societies in one year. Ken is also a Fellow of the American Society of Agronomy and the Crop Science Society of America. Dr. Boote has been a member of APRES for over 30 years and has consistently attended and presented papers at most annual meetings, as well as served on various committees through the years (see section IV of nomination packet). It would be a shame if he were not also recognized as a Fellow of APRES.

I summarize by stating that Dr. Boote is an outstanding faculty member, a brilliant scientist and teacher, a highly respected colleague, and a personal friend. I suggest to you that Dr. Boote is the best peanut physiologist/peanut modeler in the world, a statement that I believe is justified based on his documented record over a distinguished 35 year career. Dr. Kenneth J. Boote is truly deserving of being named a Fellow of the American Peanut Research and Education Society. And the timing of this award would be most appropriate as Dr. Boote will be retiring from the University of Florida later this year.

Sincerely yours,

A handwritten signature in cursive script, reading "Jerry M. Bennett".

Jerry M. Bennett
Chair, Agronomy Department



Institute of Food and Agricultural Sciences
Agronomy Department

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March 16, 2009

To Whom It May Concern,

I am honored to write a letter of support for Dr. Ken Boote for the American Peanut Research and Education Society Fellow. I have known Dr. Boote as a teacher and colleague for more than 20 years and found him to be one of the most outstanding scientists in peanut physiology.

I first met Dr. Boote during his advanced Crop Physiology course where I was a master's student and he was the course instructor. Although I didn't quite make an 'A', I found the course to be informative, challenging and foundational. Dr. Boote was always approachable and friendly and had a genuine concern that students learn and comprehend the material. I stress foundational because his lecture notes and text were the basis for preparation for the PhD preliminary examination used by myself and fellow graduate students.

After completing my graduate degrees at the University of Florida, I was employed as an extension specialist at the University of Georgia for weed management in peanut. I stayed in occasional contact with Dr. Boote, mainly through APRES. However, whenever a physiology question arose concerning peanuts, Dr. Boote's name was almost always mentioned as the person to contact.

After returning to the University of Florida in 1999, I found out who the real Dr. Ken Boote really was. He is a man of compassion and caring through his international work in Africa with US-AID Peanut CRSP, a man of stature in the department and the college through his research and teaching, a man of respect through his quiet, yet effective leadership in mentoring young faculty such as myself.

For the past 30 years, Dr. Boote has conducted research and outreach on peanut physiology and ecology. His CropGrow models are used world-wide and his teaching and mentoring as touched hundreds of individuals. I can think of no individual who has contributed more and is more deserving for the American Peanut Research and Education Society Fellow Award than Dr. Ken Boote.

Most Sincerely,

A handwritten signature in black ink, appearing to read 'Greg MacDonald', written over a circular stamp.

Greg MacDonald, Associate Professor
The Foundation for The Gator Nation



The Genetics Institute

PO Box 103610
Gainesville, Florida 32610-3610
352-273-8124
352-273-8284 Fax

Dr. Daniel Gorbet
Emeritus Professor
University of Florida
North Florida Research and Education Center
3925 Hwy 71
Marianna, FL 32446

Dear Dr. Gorbet:

It is a pleasure to write a letter of recommendation in strong support of Dr. Ken Boote becoming a 2009 Fellow of the American Peanut Research and Education Society (APRES). I do not know of anyone else that is more worthy of this recognition. I have known Dr. Boote since we became colleagues upon my arrival to the Agronomy Department at the University of Florida (UF) in 1996. My research responsibilities focus on interfacing between plant breeding and plant biotechnology for improvement of agronomic crops relevant to Florida, particularly peanut (*Arachis*), through tissue culture and various biochemical and molecular techniques. Over the years, Dr. Boote and I have developed a good professional relationship, and I remain impressed by the quality of his science and the advances he has made in plant physiology.

Dr. Boote's record of research accomplishments on peanut are broad and extensive. Testimony to the significance of his research on peanut physiology and crop modeling is exemplified by the development of PNUTGRO, the peanut crop growth model that has been widely used both in the US and abroad. He is undoubtedly a world-leader in peanut growth and development under various environmental conditions. Additionally, over his lengthy career he has received numerous competitive grants totaling more than 17 million dollars, and published his results in over 160 refereed journal articles.

Dr. Boote's plant physiology course offered at UF is superior such that I require all of my graduate students to take it. I also have Dr. Boote on my students' graduate committees and he is always a substantial contributor and a great resource. Dr. Boote extends his skills beyond the science to service in professional societies at the state, national and international levels, as well as at the University of Florida.

In summary, I view Dr. Boote as a premier scientist (and peanut scientist) and an outstanding colleague. He is well-deserving of the honor of becoming a 2009 Fellow of APRES.

Sincerely,

A handwritten signature in cursive script that reads "Maria Gallo".

Maria Gallo, Ph.D.
Professor

The Foundation for the Gator Nation
An Equal Opportunity Institution



The University of Georgia

College of Agricultural and Environmental Sciences, Campus at Griffin
Peanut Collaborative Research Support Program, Management Office

Dan Gorbet,
University of Florida, Marianna

Dear Dan,

It gives me great pleasure to write in support of Ken Boote's nomination to be a Fellow of APRES. Ken has, been a consistent and dedicated research on peanuts since 1976 when I first met him while visiting Gainesville from Zimbabwe. Ken has done a great deal for the crop and expanding the cadre of people able to research peanuts more effectively. There are few people more knowledgeable than Ken in his field of modeling and the processes that determine peanut productivity in the field and peanut responses to the environment.

Ken was an early participant in a set of simulation programs that have defined for much of the world the standard approach to simulation modeling and the application of these models to understanding the forces determining crop productivity. These simulation programs are now the center of a world wide community of simulation modeling (DSAT) and Ken regularly participates in workshops that update and maintain that program as a vibrant part of the international science community. Ken and the US peanut community can be proud of the extensive educational impact that these models for peanut (PEANUTGRO), soybean (SOYGRO) and field beans (BEANGRO) have effected world wide. In the PEANUTGRO area I have collaborated with Ken on the issues of water use efficiency which made a major contribution to the chapter that we jointly wrote for the *Advances in Peanut Science* text. We also worked together to explore the modeling of photoperiod sensitivity of peanuts as a factor influencing adaptation; and more recently I have been able to exploit Ken's expertise under the Peanut CRSP. His projects have evaluated West African environments to determine the environmental and cropping system limitations and potential responsiveness to management changes. Ken has always been able to make these things clear and logical, which is why he is such an asset to our community and APRES.

Ken has always been a willing cooperator with scientists from all over and this inclusiveness has greatly helped to put U Florida on the peanut map and to keep American peanut sciences on the cutting edge of the global scene. All this is evident from his application document which clearly demonstrates that he satisfies the requirement to be elected Fellow.

1109 Experiment St. Griffin, GA 30223

Email: crspgrf@griffin.uga.edu

Phone (770) 228-7312 Fax (770) 228-3337

As described in the nomination Ken has used peanuts as a model crop for his model/simulation activities and has been able to apply and adapt the basic principles to the many environments and management systems that peanut is grown in around the world. Ken has had a very active outreach to the broad peanut community through a number of platforms. He has collaborated with the scientists at ICRISAT to improve models that they have been developing and to teach them and their many collaborators across the world how to exploit the simulation modeling approach. Ken has also been a key member of the DSAT leadership and through their regular workshops has been able to impact many new simulation modelers.

As a scientist Ken's credentials are very high; as is evident from the long *vita* and the many awards and recognitions of excellence that have been bestowed on a him. In addition to his many research accomplishments on peanut Ken has educated people from all over the world in peanut sciences, and has furthered the goals of APRES in so many ways that I am surprised that he is not already a Fellow. Clearly he should be, and it is time that the Society did recognize the many ways in which he has contributed to its operation and mission.

I have no hesitation in recommending to the Fellows Committee that Professor Ken Boote be recognized for his contributions to the APRES and peanuts.

Yours Faithfully,



Jonathan Williams
(D. Phil., M. Phil., BSc. Agriculture (Hons))
Program Director



The University of Georgia

Department of
Plant Pathology

College of Agricultural and Environmental Sciences
Coastal Plain Experiment Station – Tifton Campus

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Fax 229-386-7285

APRES FELLOWS COMMITTEE

Dr. Todd Baughman, Chair
Texas A&M Research & Extension Center
P.O. Box 2159
Vernon, TX 76385
Email: tbaughman@ag.tamu.edu

March 13, 2009

Dear Dr. Baughman:

We are requesting that the APRES Fellows Committee please consider Dr. Timothy B. Brenneman for election to Fellow of the American Peanut Research and Education Society (APRES). Dr. Brenneman has contributed greatly to the peanut industry, the discipline of Plant Pathology, APRES, and the American Phytopathological Society (APS), and we believe that he is very deserving of election to Fellow based on excellence in the areas of research and extension as well as admirable service to APRES.

Dr. Brenneman's primary area of research is on soilborne pathogens of peanut, but his work includes foliar and viral diseases. He is involved extensively in collaborative studies across disciplines, agencies and countries. Dr. Brenneman uses an integrated approach to improve levels of disease management for peanut and pecan producers. A major emphasis of his program consists of cooperation with plant breeders to develop cultivars with genetic resistance to economically important pathogens. Efforts are also directed to better understand the effects cultural practices on disease development and how best to utilize those practices. An additional goal is improve disease management through identifying more effective compounds and more efficient use patterns, including resistance management strategies. Two excellent recent examples of his innovative work include his crucial involvement in the development of The Fungal Disease Risk Index, Peanut Rx, which aids growers in optimizing fungicide inputs based on risk to multiple diseases, and his work on night applications of fungicides to improve control of stem rot (white mold), caused by *Sclerotium rolfsii*. In the later case, Tim has laughed along with those ribbing him, while he has accumulated strong research evidence and grower results that indicate application of fungicides at night works.

The high regard for Dr. Brenneman's research program is evidenced by numerous awards and recognitions. He has been the recipient of the Dow AgroSciences Award for Excellence in Research, and two Bailey Awards from APRES, the Excellence in Research Award from the Southeastern Pecan Growers Association, the Georgia Research and Education Award from the Georgia Peanut Commission, and the Outstanding Plant Pathologist Award from the Southern Division of APS. The quality of Dr. Brenneman's program is also evidenced by his students winning numerous awards in paper competitions at APRES, Southern Division APS, and the Georgia Association of Plant Pathologists (GAPP).

One of Dr. Brenneman's students received the George Washington Carver award from the National Peanut Board. Dr. Brenneman has been invited to make presentations to many groups from Crop Improvement Associations to the Bio Y2K Congress in Grahamstown, South Africa, where he was the keynote speaker for the Disease Management Session. In addition, Dr. Brenneman has served as an invited consultant in Argentina, Nicaragua, and Australia.

Dr. Brenneman is an exemplary member of APRES, and has been constantly involved in various vital activities. Among those, he has served as Associate Editor of *Peanut Science* (1989-1994 and 2007-present) and the Technical Program Chair for the 2000 Annual Meeting. He has chaired the Bailey Award, Publication and Editorial, and Fellows committees, in addition to serving as a member of those and other committees. He has also served as President of the Southern Division of APS and GAPP. Furthermore, Dr. Brenneman has served frequently as an invited reviewer for *Peanut Science*, *Plant Disease*, *Phytopathology* and other journals, and granting agencies.

Dr. Brenneman's publication record is highly regarded by both plant pathologists and peanut scientists. Through both his program and collaborative efforts, Dr. Brenneman has authored or co-authored over 105 referred journal articles and book chapters, over 190 abstracts or proceedings, and numerous disease updates and Research and Extension Reports. Most of those publications relate to peanut, and 25 of the journal articles were published in *Peanut Science*. He is a co-developer (with Dr. Bill Branch) on the new stem rot-resistant cultivar "Georgia-07W". In addition, Dr. Brenneman has also played an integral role in the training of graduate students at the University of Georgia having served on 26 graduate student committees, nine of those being the major professor. Dr. Brenneman has encouraged his students to participate in programs such as the Joe Sugg Student Paper Session at APRES and the graduate student paper competition, at SDAPS. These efforts have aided in the professional development of his students, and as result, several of his students remain very active in one or both of those societies.

Although his appointment is primarily research, Dr. Brenneman is very effective in an extension setting, participating in numerous county and statewide grower meetings, and leading dozens of agent trainings and field tours. Dr. Brenneman has had key roles (including the Program Chair) in the Georgia Peanut Tour, an annual two-day event used to educate hundreds of people on the Georgia Peanut Industry.

With his extraordinary accomplishments and record of service the University of Georgia, the scientific community, the peanut industry, and APRES, we believe that Dr. Tim Brenneman is a paragon of the ideals that Fellowship in APRES represents. We believe that electing him as Fellow would be an appropriate honor to him and to our society, and we would appreciate your consideration of his nomination. Please feel free to contact us if you have questions or if other items need our attention. Thank you and the committee for your efforts in this effort.

Sincerely,



Albert K. Culbreath
Professor



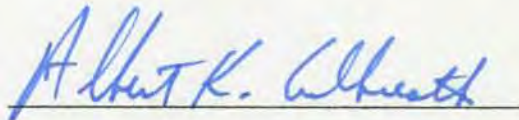
Robert C. Kemerait
Associate Professor

TITLE: Nomination of **Dr. Timothy B. Brenneman** for Election to Fellowship by the American Peanut Research and Education Society"

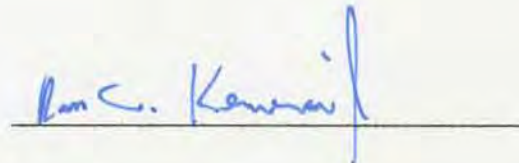
DATE SUBMITTED: March 13, 2009

NOMINEE: Dr. Timothy B. Brenneman
Date of birth: October 21, 1957
Place of birth: Virginia
Address: Department of Plant Pathology
University of Georgia
Coastal Plain Experiment Station
P.O. Box 748
Tifton, GA 31793-0748
Telephone: (229) 386-3370

NOMINATORS: Dr. Albert K. Culbreath
Department of Plant Pathology
University of Georgia
Coastal Plain Experiment Station
P.O. Box 748
Tifton, GA 31793-0748
Telephone: (229) 386-3156



Dr. Robert C. Kemerait, Jr.
Department of Plant Pathology
University of Georgia
Coastal Plain Experiment Station
P.O. Box 748
Tifton, GA 31793-0748
Telephone: (229) 386-7495



BASIS OF NOMINATION:

Primary Area: Research
Secondary Area: Extension

I. PERSONAL ACHIEVEMENTS AND RECOGNITION

A. Degrees received: give field, date, and institution for each degree.

B.A., 1981, Goshen College, Goshen, IN

Ph.D., 1986, Virginia Polytechnic Institute and State University

Nomination of Tim Brenneman for Fellow of APRES

B. Membership in professional and honorary academic societies.

American Peanut Research and Education Society
American Phytopathological Society
Southern Division of the American Phytopathological Society
Southeast Pecan Growers Association
Georgia Association of Plant Pathologists
Georgia Pecan Growers Association

C. Honors and awards received since the baccalaureate degree.

1986 Bailey Award, APRES
1989 Bailey Award Nomination, APRES
1991 University of Georgia, Coastal Plain Experiment Station Outstanding Junior Scientist
1991 Bailey Award Nomination, APRES
1992 Creative Research Award, Tifton chapter of Sigma Xi
1992 Bailey Award Nomination, APRES
1993 Bailey Award Nomination, APRES
1994 Bailey Award, APRES
1995 Distinguished Research Award, Tifton Chapter Sigma Xi
1995 Bailey Award Nomination, APRES
1995 Co-author of second place graduate student paper competition, APRES
1996 Bailey Award Nomination, APRES
1996 Co-author of 1st place graduate student paper competition, APRES
1996 Georgia Research and Georgia Education Award (Co-winner), Georgia Peanut Commission
1996 Graduate Student Michael Franke won E. Broadus Browne Award for outstanding thesis research, UGA College of Agriculture
1996 Certificate of Merit, USDA
1996 Graduate Student Michael Franke won best paper award, Georgia Association of Plant Pathologists
1997 Co-author of 2nd place graduate student paper competition, APRES
1998 Co-author of 1st place graduate student paper competition, APRES
1998 Jr. Faculty Award for Research, University of Georgia chapter Gamma Sigma Delta
1999 Bailey Award Nomination, APRES
2000 Dow AgroSciences Award for Excellence in Research, APRES
2000 Co-author of 1st and 2nd place graduate student paper competition, APRES
2000 Bailey Award Nomination, APRES
2001 Bailey Award Nomination, APRES
2001 Co-author of 1st and 2nd place graduate student paper competition, APRES
2002 Steve Rideout selected for Melhouse Symposium, APS
2002 Co-author of 2nd place graduate student paper competition, SDAPS
2003 Received the Excellence in Research Award, Southeastern Pecan Growers Association
2003 Co-author 2nd place graduate student paper competition, APRES
2006 Bailey Award Nomination, APRES
2006 Best Paper Award for the Southeastern Pecan Growers Association meeting
2004 Graduate Student Jason Woodward travel award, SDAPS
2005 Graduate Student Jason Woodward placed 3rd in graduate student competition, SDAPS

Nomination of Tim Brenneman for Fellow of APRES

C. Honors and Awards (Cont.)

2006 Graduate Student Jason Woodward received "The George Washington Carver Award"
National Peanut Board

2002 Graduate Student Steve Rideout won first place in graduate student paper competition,
Georgia Association of Plant Pathologists

2006 Graduate Student Jason Woodward won first place in graduate student paper competition,
Georgia Association of Plant Pathologists

2007 Excellence in Research Award, Southeastern Pecan Growers Association

2008 Outstanding Plant Pathologist, Southern Division APS

D. Employment: years, organizations and locations.

Lab Technician Hospital of the Good Samaritan, 1979

Graduate Research Virginia Polytechnic Assistant Institute and State University (VPI & SU)
1982-1986

Research Associate VPI & SU 1986

Assistant Professor University of Georgia 1986-1992

Associate Professor University of Georgia 1992-1998

Professor University of Georgia 1998-present

II. ACHIEVEMENT IN PRIMARY (50 POINTS) AND SECONDARY (10 POINTS) FIELDS OF ACTIVITY

A. Research

Significance and originality of basic and applied research contributions; scientific contribution to the peanut industry; evidence of excellence and creative reasoning and skill; number and quality of publications; quality and magnitude of editorial contributions. Attach a chronological list of publications.

Dr. Brenneman conducts research in the primary area of ecology of soilborne pathogens of peanut and integrated management of diseases caused by those pathogens, but his work includes foliar and viral diseases. He is involved extensively in collaborative studies across disciplines, agencies and countries. Dr. Brenneman uses an integrated approach to improve levels of disease management for peanut and pecan producers. A major emphasis of his program consists of cooperation with plant breeders to develop cultivars with genetic resistance to economically important pathogens. He has characterized resistance levels to *Sclerotium rolfsii*, *Rhizoctonia solani*, and *Cylindrocladium parasiticum* in numerous cultivars and breeding lines from several breeding programs, and has worked on utilizing the resistance to *S. rolfsii* in cultivars AP-3, DP-1, Florida-07, Georgia-01R, Georgia-02C, Georgia-03L, Georgia-07W, Georganic, Tifguard, and York. He is a co-developer (with Dr. Bill Branch) on the new stem rot-resistant cultivar "Georgia-07W". He has been the lead investigator for assignment of risk index points for cultivars to reflect their relative susceptibility to diseases caused by these pathogens.

Efforts are also directed toward achieving a better understanding of the effects cultural practices on disease development and how best to utilize those practices that suppress one or more diseases. The work he and his students have done on row pattern has shown that twin row patterns are at lower risk of damage to stem rot than single rows with the same plant population, thereby documenting another benefit to this cultural practice.

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A. Research (Cont.)

They also found, however, that the practice of increasing plant populations to manage tomato spotted wilt put the crop at greater risk for damage by stem rot, and emphasized even greater importance of host resistance and effective fungicides for stem rot control with higher plant populations.

Dr. Brenneman has also worked extensively to improve disease management through identifying and using more effective compounds and more efficient use patterns. He was one of the first to publish detailed characterization of the effects of tebuconazole on foliar and soil-borne pathogens of peanut, and has been a leader in work on utilization of that fungicide in the southeastern U.S. In recent years, with development of resistance in populations of leaf spot pathogens to that compound, he has been a key person in collaborative efforts to find the optimal mixing partners to control leaf spot diseases and still make use of tebuconazole as a very economical treatment for soilborne diseases. He is similarly a leader in the work on relative efficacy and how best to use the fungicides flutolanil, azoxystrobin, pyraclostrobin and fluoxastrobin for soilborne disease control, and currently is working on characterization of several experimental fungicides such as penthiopyrad for disease control. The paper published in *Pest Management Science* in 2009 by Drs. Culbreath, Brenneman and Kemerait was one of the first refereed journal articles on disease control with that fungicide in any crop.

An excellent recent example of Dr. Brenneman's innovative work includes the crucial role of his research findings in the development of The Fungal Disease Risk Index mentioned earlier, and the merging of that index with the Tomato Spotted Wilt Risk Index into "Peanut Rx" which aids growers in optimizing fungicide inputs based on risk to multiple diseases. Dr. Brenneman was a key player at all levels in development, refinement and evaluation of the index, especially with the soilborne disease components. He continues to provide information and insight that would allow the index to be improved or expanded, and information on how new fungicides can fit into integrated disease management regimes called for in the various risk levels. The use of the index with new cultivars and appropriate cultural practices has the potential to reduce fungicide applications by 30% or more in some fields.

One area of Dr. Brenneman's recent research that has received much attention and that has prompted more than just a little kidding is his work on night applications of fungicides for stem rot control. With an idea that stemmed from his collaborative work on peanut in Nicaragua, Dr. Brenneman started investigating whether the folding of peanut leaves at night might allow for a more direct application of fungicides to the crown of the plant, where they're needed for optimal activity. Dr. Brenneman and his student Jao Augusto have shown that the combination of folded leaves with dew formation on leaves and stems in the predawn hours can have striking effects on how well some fungicides work. This is a great example of what can happen if a researcher is not deterred by the argument of, "We've never done it that way before.", or by the possibility of being laughed at. Tim has laughed along with those ribbing him all the while accumulating strong research evidence and grower results that indicate nighttime application of fungicides works for stem rot management.

Dr. Brenneman has been prolific in the publication of high quality articles in numerous scientific journals. Through his program and collaborative efforts, Dr. Brenneman has authored or co-authored over 105 referred journal articles and book chapters, over 190 abstracts or proceedings,

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and numerous disease updates and Research and Extension Reports. A list of the book chapters, journal articles, abstracts and proceedings, and Extension Bulletins are attached. We did not attach a his extensive list of other publications such as Georgia Peanut Research and Extension Reports, Fungicide & Nematicide Test Results, and Biological and Cultural Tests, Peanut Pointers and various popular press journals. Most of those publications relate to peanut, and 25 of the journal articles were published in *Peanut Science*.

The high regard for Dr. Brenneman's research program is evidenced by numerous awards and recognitions. He has been the recipient of the Dow AgroSciences Award for Excellence in Research, and two Bailey Awards from APRES, the Excellence in Research Award from the Southeastern Pecan Growers Association, the Georgia Research and Education Award from the Georgia Peanut Commission, and the Outstanding Plant Pathologist Award from the Southern Division of APS. The quality of Dr. Brenneman's program is also evidenced by his students winning numerous awards in paper competitions at APRES, Southern Division APS, and the Georgia Association of Plant Pathologists (GAPP). One of Dr. Brenneman's students, was the recipient of the George Washington Carver award from the National Peanut Board. Dr. Brenneman has been invited to make presentations to many groups from Crop Improvement Associations to the Bio Y2K Congress in Grahamstown, South Africa, where he was the keynote speaker for the Disease Management Session. In addition, Dr. Brenneman has served as an invited consultant in Argentina, Nicaragua, and Australia.

B. Extension

Ability to (a) communicate ideas clearly, (b) influence client attitudes, and (c) motivate change in client action. Evaluate the quality, number and effectiveness of publications for the audience intended. Attach a chronological list of publications.

Although his current appointment is primarily research, Dr. Brenneman is very effective at educating clientele in an extension setting, and has participated in over 75 county and statewide grower meetings in Georgia, and leading dozens of agent trainings and field tours.

Dr. Brenneman has made invited presentations at the Florida Panhandle Peanut Short Course, has participated in audio conferences with growers from Australia, and has been an invited speaker to grower, industry, government and media representatives in Cordoba, Argentina. He has made presentations on disease control to visiting delegations from several states and countries. He is constantly called upon by fungicide companies for updates on the efficacy of various products.

Dr. Brenneman and his students have been heavily involved in on-farm studies to validate and expand upon results from small plot studies. For this, they have worked in close collaboration with extension specialists and extension agents, and use these experiments both as a means of gathering data for broader recommendations as well as an educational tool for growers in the immediate area. Extension agents have been especially interested in the work on night time spray applications, and several on-farm experiments have been conducted in collaborative efforts between Dr. Brenneman, Dr. Kemeraite, growers and extension agents. Dr. Brenneman has been involved in several similar on-farm studies on management of stem rot, *Rhizoctonia* limb rot, and *Cylindrocladium* black rot.

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B. Extension (Cont.)

As mentioned previously, Dr. Brenneman's research data base crucial for development of The Fungal Risk Index/Peanut Rx. Dr. Brenneman was directly involved in all aspects of the development, formulation and validation of this new educational tool. There is no dividing line between research and educational aspects of these combined indices, but Dr. Brenneman's contributions to both are largely responsible for the success of that program.

The Alabama, Florida, Georgia "Tri-State Peanut Disease Tour" is an annual 2-3 day tour of peanut disease research plots in the participating states. Dr. Brenneman has participated in and has been a leader in planning and coordination of the tour since his coming to Georgia. The tour concentrates on fungicide control of peanut diseases, and gives researchers, extension specialists, and chemical industry personnel opportunity to examine relative performance of labeled and experimental materials being evaluated for disease control.

C. Service to Industry

Development or improvement of programs, practices, and products. Evaluate the significance, originality and acceptance by the public.

The Georgia Peanut Tour is an annual 2-3 day tour of peanut production, processing and manufacturing in Georgia (and sometimes Alabama and Florida). The tour is a joint effort of University of Georgia, USDA, and the Georgia Peanut Commission and is used to promote peanuts. It is an educational tour that provides information on the status of the peanut crop, updates on key issues such as growing conditions, quality factors and concerns. Dr. Brenneman has been a member of the Georgia Peanut Tour Committee since 1992 and chaired the Committee in 1994.

III. SERVICE TO THE PROFESSION (30 Points)

A. Service to APRES including length, quality, and significance of service

Dr. Brenneman has been a member of APRES since 1984. His service to the society is exemplary. Since 1989, he has been constantly involved in various vital activities of the society. His efforts to promote the quality of APRES publications are particularly noteworthy. He served as an Associate Editor of *Peanut Science* from 1989-1994 and 2007 to the present, and served on the Publications and Editorial Committee from 1992-1995 and from 2006 to the present, chairing the committee one or more years in each of those terms. This most recent term has been one of very much activity for that always important committee, with the transition to electronic publication of *Peanut Science*, the death of the editor of *Peanut Science*, and the search for a new editor. Dr. Brenneman has been very involved in the planning and conduction of APRES annual meetings, serving on the program committees in 1990, 1999, and 2006, and serving as Technical Program Committee Chair in 1999. Other committee and program assignments are listed under Item 1.

Nomination of Tim Brenneman for Fellow of APRES

1. Appointed positions.

Bailey Award Committee, 1989-1991, Chairman, 1990-1991

Publications and Editorial Committee, 1992-1995, (Chair 1993-1995), and 2006-present
(Chair 2008-2009)

Associate Editor, *Peanut Science*, 1989-1994 and 2007-present

Technical Program Committee, 1990 Annual Meeting

Chairman, *Ad hoc* Committee to Review Bailey Award and revise criterion, 1997-1998

Finance Committee, 1998-2000

Chairman, Technical Program Committee, 1999

Fellows Committee, 2003-2006, Chair 2006

Publication and Editorial Committee, 2006-present

Search Committee for Editor of *Peanut Science*, 2008

Program Committee, 2006 Annual Meeting

2. Elected positions.

3. Other service to the Society.

Dr. Brenneman has organized and participated in special sessions at APRES meetings. In 1992 he organized and chaired an APRES symposium on Fungicide Resistance. In 2005 he gave an invited Symposium Presentation on Editorial Standards for *Peanut Science*.

B. Service to the profession outside the Society including various administrative skills and public relations actions reflecting favorably upon the profession

1. Describe advancement in the science, practice and status of peanut research, education or extension, resulting from administrative skill and effort.

2. Describe initiation and execution of public relations activities promoting understanding and use of peanuts, peanut science and technology by various individuals and organized groups within and outside the USA.

EVALUATION:

Identify in this section, by brief reference to the appropriate materials in sections II and III, the combination of the contributions on which the nomination is based. Briefly note the relevance of key items explaining why the nominee is especially well qualified for fellowship.

Dr. Timothy B. Brenneman, Professor of Plant Pathology at the University of Georgia, Tifton Campus, has a long history of accomplishments and contributions to the peanut industry. His research program on use of cultural practices, host resistance, and effective fungicides in integrated management of diseases of peanut caused by soilborne pathogens is world renowned, and productivity in that area is evidenced by his publication of over 105 refereed journal articles and book chapters. His research and extension efforts have resulted in great improvement in management of leaf spot, stem rot, *Rhizoctonia* limb rot, *Cylindrocladium* black rot, and tomato spotted wilt of peanut in the southeastern U.S. The outstanding nature of his program is indicated by his receipt of numerous awards, including the Outstanding Plant Pathologist Award from the Southern Division of the American Phytopathological Society, and Wallace K. Bailey and DowAgroSciences Excellence in Research Awards from the American Peanut Research and Education Association. Dr. Brenneman has been very active in APRES, having served as an associate editor of *Peanut Science*, the chairman of the technical program committee for the 2000 annual meeting, and member and chairman of several additional committees.

Book Chapters

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2. Backman, P. A. and T. B. Brenneman. 1995. Stem rot. In: *Compendium of Peanut Diseases*. P. M. Porter, ed. American Phytopathological Society, St. Paul, MN, pp. 36-37.
3. Mehan, V. K., C. D. Mayee, T. B. Brenneman, and D. McDonald. 1995. Stem and pod rots of groundnut. ICRISAT Information Bulletin No. 44, Hyderabad, India. 23 pp.
4. Brenneman, T. B. 1996. Rhizoctonia-induced diseases and their management in peanut, pp. 315-320. In: *Rhizoctonia species: Taxonomy, Molecular Biology, Ecology, Pathology and Control*. B. Sneh, S. Jabaji-Hare, S. Neate, and G. Dijst, eds., Kluwer Academic Publishers.
5. Brenneman, T. B. 2001. Pecan leaf scorch. In: *Compendium of nut crop diseases in temperate zones*. B. L. Teviotdale, T. J. Michailides, and J. W. Pscheidt, eds. American Phytopathological Society, St. Paul, MN.
6. Brenneman, T. B., P. Timper, N. A. Minton, and A. W. Johnson. 2003. Comparison of bahiagrass, corn, and cotton as rotational crops for peanut. *Proc. of Sod Based Cropping System Conference*, NFREC, Quincy, FL, Feb. 20-21.
7. Dutcher, J. D., L. Wells, T. B. Brenneman and M. G. Patterson. 2009. Integration of insect and mite, disease, and weed management to improve pecan production. IN A. Ciancio and K. G. Mukerji (eds.) *Integrated Pest and Disease Management vol. 4*. Springer Publishers. Dordrecht, The Netherlands. (Invited Book Chapter, In Press).

Refereed Journal Articles

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2. Brenneman, T. B., P. M. Phipps, and R. J. Stipes. 1987. Performance characteristics of dicloran, iprodione and vinclozolin for control of Sclerotinia blight of peanut. *Plant Dis.* 71:546-548.
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6. Brenneman, T. B. and D. R. Sumner. 1989. Effects of chemigated and conventionally sprayed tebuconazole and tractor traffic on peanut diseases and pod yields. *Plant Disease* 73:843-846.
7. Brenneman, T. B. and C. C. Reilly. 1989. Occurrence of Glomerella cingulata on pecan. *Plant Dis.* 73:775.
8. Brenneman, T. B. and D. R. Sumner. 1990. Effects of tractor traffic and chlorothalonil applied via ground sprays or center pivot irrigation systems on peanut diseases and pod yields. *Plant Dis.* 74:277-279.
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23. Culbreath, A. K., T. B. Brenneman, and C. K. Kvien. 1992. Use of a resistant peanut cultivar with copper fungicides and reduced fungicide applications for control of late leaf spot. *Crop Protection* 11:361-365.
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The University of Georgia

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March 4, 2009

Dr. Albert K. Culbreath
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Dear Dr. Culbreath:

I am truly pleased to be asked and wholeheartedly support your nomination of Dr. Timothy B. Brenneman for the 2009 Fellow Award in the American Peanut Research and Education Society (APRES). Dr. Brenneman's plant pathology research has been outstanding and he has made major contributions to the whole U.S. peanut industry and in many other countries. Dr. Brenneman has also been a very active member and faithfully served APRES for many years.

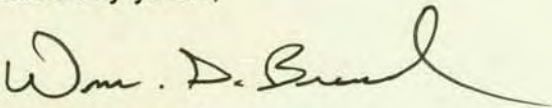
Dr. Brenneman has been recognized on several different occasions for his outstanding research contributions in APRES and other professional societies. He has received two Bailey Awards from APRES in 1986 and 1994. He also received the Dow AgroSciences Award for Excellent in Research at the 2000 APRES meeting. Many of his graduate students were also award winners as well.

Dr. Brenneman's primary research area is on soilborne peanut diseases. He has worked cooperatively with several colleagues in research and extension, and conducts his own research. He then takes these results to on-farm field trials. Over the past years, we have jointly conducted numerous test evaluations for genotype resistance to white mold, stem rot, and southern blight caused by the same soilborne pathogen *Sclerotium rolfsii*, seedling and limb rot disease caused by *Rhizoctonia solani*, and Cylindrocladium black rot (CBR) caused by *Cylindrocladium parasiticum*. One of the most recent cultivar releases 'Georgia-07W' which has a very high level of resistance to white mold involved Dr. Brenneman as a co-developer.

Dr. Brenneman is a hard-working scientist that gives many hours to solving problems facing the peanut growers. He has been prolific in publishing high quality articles in Peanut Science. Through his efforts, Dr. Brenneman has authored or coauthored greater than 100 referred journal articles and book chapters. He likewise has made numerous invited presentations throughout the whole peanut industry.

It is my great pleasure to support the nomination of Dr. Timothy B. Brenneman for the 2009 Fellow Award in APRES. Dr. Brenneman has served faithfully on numerous committees and has been a very active and contributing member of APRES for many years. Thus, Dr. Brenneman is well-deserving of this prestigious honor and recognition in APRES.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Wm. D. Branch". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Wm. D. Branch
Professor/APRES Fellow



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Dr. Albert K. Culbreath, Professor
Department of Plant Pathology
University of Georgia
P.O. Box 748
Tifton, GA 31793

Dear Dr. Culbreath:

Thank you for asking me to write a letter in support of Dr. Tim Brenneman for consideration of being named a Fellow in the American Peanut Research and Education Society. It is both an honor and a privilege to prepare this letter of support.

I've known Tim since he began his career as a faculty member in the Department of Plant Pathology at the University of Georgia in Tifton in 1986. In fact, I actually met him at the 1986 APRES meeting in Virginia Beach, VA when he was a graduate student at Virginia Tech under the direction of Dr. Pat Phipps. At the time he was interviewing for the position of research plant pathologist with UGA, the position he currently holds. Because Tim conducts research on soil-borne diseases of peanut and I am a peanut agronomist with UGA in Tifton, I have had the distinct honor and privilege of working with Tim for the past 23 years.

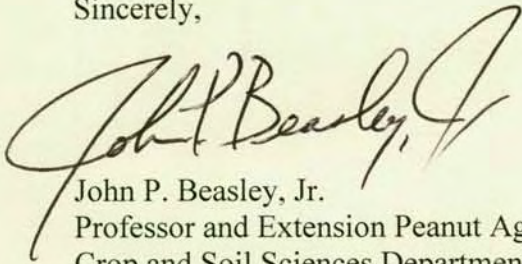
Tim is a consummate professional. He has developed a world renowned research program in peanut disease management and garnered tremendous respect across the country and the world. He has developed outstanding graduate students, many of which are in faculty positions at other institutions or in the peanut industry in key leadership roles. He is called upon by numerous scientists at other institutions for his expertise, especially in making presentations to industry groups, producers, and other scientists.

Tim is completely dedicated to APRES. He has served our organization in a multitude of ways. He has served on just about every committee that APRES has, including as chairman of most. He served as the technical program chair for the 1999 meeting in Savannah, which was considered one of the best attended and most successful meetings in our society's history. He is a strong leader that is very cooperative and level headed when making critical decisions. He has won the Bailey Award and has graduate students that have won the Joe Suggs Graduate Student award. It is obvious that his leadership in training young people is outstanding because of the success they have had once they graduate from his program.

Dr. Tim Brenneman is most deserving of being named a Fellow of APRES. His reputation, commitment to his profession and our society, and success in his research

program are just a few of the reasons I would encourage the Fellows Committee to recognize Tim with this honor.

Sincerely,

A handwritten signature in dark ink, reading "John P. Beasley, Jr." in a cursive style. The signature is positioned above the printed name and title.

John P. Beasley, Jr.
Professor and Extension Peanut Agronomist
Crop and Soil Sciences Department



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Dr. Albert K. Culbreath
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Dear Dr. Culbreath,

It is a pleasure to support the nomination of Dr. Timothy Brenneman for Fellow of the American Peanut Research and Education Society (APRES). In my estimation, Dr. Brenneman is worthy being named a APRES Fellow based on research and service to the society.

In the area of research, Dr. Brenneman is regarded by me and others who work on peanut diseases as an authority on the subject. His research emphasis has been on the biology and control of soilborne peanut diseases. He has emphasized an integrated approach to disease management through development of chemical, cultural, and genetic controls. Dr. Brenneman has been among the first to identify effective new fungicides for the control of Sclerotinia blight, stem rot, and limb rot. These destructive diseases have been the most important factors limiting peanut production in nearly all production regions in the U.S. Dr. Brenneman's research program developed efficient use patterns for these fungicides, which have revolutionized peanut disease management. With the shift to fungicides with site-specific modes of action, Dr. Brenneman has developed use patterns to minimize the risks of resistance development and measured baseline sensitivity levels for several peanut pathogens using methods developed in his program. Baseline data is critical for assessing resistance development in Georgia and in other states. Dr. Brenneman's research in fungicide application technology also has been beneficial in increasing the efficiency of production in all peanut growing states.

Another significant research contribution has been in the development of peanut cultivars with disease resistance. Dr. Brenneman has made considerable efforts in identifying and characterizing levels of resistance to stem rot, limb rot, Clyindrocladium black rot, and peanut root knot nematode in collaboration with Georgia, Florida, and USDA peanut breeding programs. Methods for screening peanut germplasm for disease resistance have been developed. This work has resulted in the release of new peanut cultivars with multiple disease resistance. These cultivars and future releases will be critical in reducing production costs and losses to diseases.

The amazing level of research productivity by Dr. Brenneman is evidenced by his impressive list of refereed journal articles. Many of these papers have been published in the APRES journal *Peanut Science*. More importantly, I and other plant pathologists with extension responsibilities in the US and around the world have relied on the

expertise of Dr. Brenneman and the results from his research program for developing disease management strategies and recommendations for our growers.

Dr. Brenneman also has an outstanding record in the area of service and support of APRES. He, his students and his colleagues have always made numerous, outstanding presentations at the annual meeting each year for the 20 years I have been a member. Papers from his research group are usually highlights of the annual meeting as evidenced by the numerous Bailey Awards, Baily Award nominations, and Joe Sugg Graduate Student Awards won by his research group. His service involving multiple terms as associate editor of *Peanut Science* and Chair of the Technical Program Committee are particularly noteworthy. These key positions are the most laborious, under appreciated, and critical to the success of APRES or any scientific society.

I can think of no one more deserving of the title of APRES Fellow than Dr. Brenneman. His highly productive career in research has benefitted the growers of Georgia, peanut producers across the country, as well as the scientific community. His service on committees and support of *Peanut Science* as an author and editor have been key to the APRES's success. I am sure that his nomination will be enthusiastically approved by the Fellows Committee.

Sincerely,

A handwritten signature in cursive script that reads "John Damicone".

John Damicone
Professor and Extension Specialist