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## BIOGRAPHICAL SKETCH

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<b>NAME:</b> Bruce B. Clarke	<b>POSITION TITLE:</b> Extension Specialist/Professor, Turfgrass Pathology
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### EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Rutgers University	PhD	1982	Plant Pathology
Rutgers University	BS	1977	Forest Management

### EMPLOYMENT HISTORY

<b>Emeritus Professor, Turfgrass Pathology</b> , Rutgers University	2022-present
<b>Extension Specialist in Turfgrass Pathology</b> , Department of Plant Biology & Pathology, Rutgers Cooperative Extension (RCE), NJ Agric. Exp. Stn. (NJAES), School of Environmental and Biological Sciences (SEBS), Rutgers University (70% Extension, 20% Research, 10% Teaching)	1997-2021
<b>Director, Center for Turfgrass Science</b> , NJAES/SEBS, Rutgers University	1993-2020
<b>Chairman, Department of Plant Biology &amp; Pathology</b> , NJAES/SEBS, Rutgers University	2012 -2014
<b>Adjunct Professor</b> , Department of Plant Pathology, College of Agric. and Life Sci., NC State University, Raleigh, NC	2011- 2014
<b>Ralph Geiger Endowed Chair in Turfgrass Science</b> , Department of Plant Biology & Pathology, NJAES/SEBS, Rutgers University	2005-2011
<b>Vice Chair, Department of Plant Biology &amp; Pathology</b> , NJAES/SEBS, Rutgers University	2001-2011
<b>Chair, Department of Plant Pathology</b> , NJAES/Cook College, Rutgers University	1999-2001
<b>Associate Extension Specialist in Turfgrass Pathology</b> , Department of Extension RCE, Specialists, NJAES/Cook College, Rutgers University	1988-1997
<b>Assistant Extension Specialist in Turfgrass and Ornamental Pathology</b> , Department of Extension Specialists, RCE, NJAES/Cook College, Rutgers University	1982-1988

### RESEARCH EXPERIENCE

My research has focused on the identification and control of biotic and abiotic diseases of cool-season turfgrasses. This has involved the use of field studies to assess pathogen dynamics, as well as controlled environment and greenhouse studies to ascertain the relationship between environmental stress, cultural management, and disease development. Research has also been conducted on disease forecasting and detection systems, and the identification of disease resistance in turfgrass germplasm. The principal goal of my outreach program has been the development of best management practices for the control of turfgrass diseases such as anthracnose, dollar spot, gray leaf spot, and patch diseases caused by root- and crown-infecting fungi. My research findings have been utilized by turf managers in North America, Europe and Austral-Asia to improve disease control and turfgrass quality, while reducing chemical inputs through the use of improved disease management strategies.

#### **Books**

Tredway, L. P., M. Tomaso-Peterson, J. P. Kerns, and B.B. Clarke. 2022. *Compendium of Turfgrass Diseases*. 4<sup>th</sup> ed. APS Press, St. Paul, MN. 188 pp.

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### *Patents*

International Patent Application PCT/US2023/064658 entitled, Compositions and Methods for the Isolation and Purification of Anti-Fungal Protein from *Epichloë festucae* and Use Thereof for Reducing Symptoms of Dollar Spot Disease in Targeted Plant Species, on March 17, 2023

**Refereed Journal Publications: (2015-2023)** \*indicates senior author was one of Clarke's graduate students or was from Clarke's Laboratory.

Koch, P.L., M. Chou, J.A. Murphy, K. Genova, J. Hempfling, and B. B. Clarke. 2023. *Fine fescue species vary in their susceptibility to snow molds*. Plant Health Progress: Accepted July 20, 2023

Groben\*, G., B. Schaefer, B.B. Clarke, J.A. Murphy, P. Purdon, P. Koch, and N. Zhang. 2023. *Horizontal and vertical distribution of Clarireedia spp., in asymptomatic and symptomatic creeping bentgrass cultivars*. Submitted to Plant Dis. July 18, 2023.

Fardella, P.A., B.B. Clarke, and F.C. Belanger. 2023. *The Epichloë festucae Antifungal Protein Efe-AfpA Has Activity Against Numerous Plant Pathogens*. Microorganisms 2023, 11, 828. <https://doi.org/10.3390/microorganisms11040828>

Groben\*, G., B.B. Clarke, L. Kerkhof, S.A. Bonos, Y. Qu, J. Luo, E. Walsh, N. Zhang. 2023. Mycobiome analysis of tall fescue half-sibling populations under drought stress using the Illumina MiSeq and Oxford Nanopore Technology MinION. Phytobiomes. Accepted July 10, 2023..

Yin\*, S., T. Tate, W.A. Meyer, B.B. Clarke, D.L. Ward and L.A. Biern. 2022. *Susceptibility of Chewings and hard fescues to Colletotrichum cereale, an aggressive pathogen causing anthracnose disease*. Hort. Sci. In Press 30 pp.

Fardella, P.A., T. Zipeng, B.B. Clarke, and F.C. Belanger. 2022. *The Epichloë festucae antifungal protein Efe-AfpA protects creeping bentgrass (Agrostis stolonifera) from the plant pathogen Clarireedia jacksonii, the causal agent of dollar spot disease*. J. Fungi 2022, 8, 1097. <https://doi.org/10.3390/jof8101097>. . Note: Editor's Choice Article for 2023

Chou, M-Y, B. B. Clarke, J. A. Murphy, N. Zhang, J. Luo, P. Vines, and P. L Koch. 2022. *Rapid detection of the recently identified turfgrass pathogen Magnaporthiopsis meyeri-festucae using recombinase polymerase amplification*. Plant Dis. 106(9):2441-2446 (<https://apsjournals.apsnet.org/doi/10.1094/PDIS-08-21-1732-RE>).

Hempfling\*, J.W., B. B. Clarke and J. A. Murphy. 2021. *Novel action thresholds of a Logistic Regression Model to forecast dollar spot on bentgrasses*. Crop Sci. 1-10. <http://doi.org/10.1002/csc2.20510>

Vines, P., R. Daddio, J. Luo, R. Wang, J. Murphy, N. Zhang, B. Clarke, W. Meyer, and S. Bonos. 2021. *Pyricularia oryzae incites gray leaf spot disease on hard fescue (Festuca brevipila)*. Int Turfgrass Soc Res J. 14: DOI: 10.1002/its2.17

Qu, Y., E.J. Green, P.L. Vines, S. Wu, S.A. Bonos, B.B. Clarke, and W.A. Meyer. 2021. *Evaluation and genetic analysis of red thread [Laetisaria fuciformis (Berk.) Burds. ] disease incidence in tall fescue (Festuca arundinacea Schreb.)*. Int Turfgrass Soc Res J. 14:1-10. <http://doi.org/10.1002/its2.20>

Wang\*, R., S. Luo, B.B. Clarke, and F.C. Belanger. 2021. *The Epichloë festucae antifungal protein Efe-AfpA is also a possible effector protein required for the interaction of the fungus with its host grass*

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*Festuca rubra* subsp. *Rubra*. *Microorganisms* 2021, 9, 140. <https://doi.org/10.3390/microorganisms9010140>

- Crouch\*, J.A., L.A. Beirn, M. Boehm, I. Carbone, B.B. Clarke, J.P. Kerns, M. Malapi-Wight, T.K. Mitchell, V. Reddyvari-Channarayappa, and L.P. Tredway. 2020. *Genome resources for seven fungal isolates that cause turfgrass dollar spot disease, including Clarireedia jacksonii and C. monteithiana*. *Plant Dis*:105:691-694. <https://apsjournals.apsnet.org/doi/10.1094/PDIS-06-20-1296-A>.
- Groben\*, G. B. B. Clarke, J.A. Murphy, P. Koch, J. Crouch, S. Lee and N. Zhang. 2020. *Real-time PCR detection of Clarireedia spp., the causal agents of dollar spot in turfgrasses*. *Plant Disease* • 2019 • 0:1-6 • <https://doi.org/10.1094/PDIS-04-20-0726-RE>
- Hempfling\*, J.W., J. A. Murphy, and B. B. Clarke. 2020. *Midseason cultivation effects on anthracnose of annual bluegrass turf*. *Agron. J*: doi: 10.1002/agj2.20202.
- Wang\*, R., B.B. Clarke, and J. A. Murphy. 2020. *Sand size affects topdressing removed by mowing and anthracnose on annual bluegrass putting green turf*. *HortScience* horts 2020; 10.21273/HORTSCI14396-19
- Wang\*, R., B.B. Clarke, and F.C. Belanger. 2019. *Transcriptome analysis of choke stroma and asymptomatic inflorescence tissues reveals changes in gene expression in both Epichloë festucae and its host plant Festuca rubra subsp. rubra*. *Microorganisms*. 2019; 7(11):567 doi:10.3390/microorganisms7110567.
- Salgado-Salazara, C., L. A. Beirn\*, A. Ismaïela, M. J. Boehm, I. Carbonee, A. I. Putman, L. P. Tredway, B. B. Clarke and J. Crouch. 2018. *Clarireedia: A new fungal genus comprising four pathogenic species responsible for dollar spot disease of turfgrass*. *Fungal Biology* 122 (2018): 761-773. <https://doi.org/10.1016/j.funbio.2018.04.004>.
- Salgado-Salazar, C., L.A. Beirn, B.B. Clarke, and J. Crouch. 2018. *Data from: Clarireedia: A new fungal genus comprising four pathogenic species responsible for dollar spot disease of turfgrass*. *Ag Data Commons*. <http://dx.doi.org/10.15482/USDA.ADC/1429061>
- Wang\*, R. B.B. Clarke, and J. A. Murphy. 2018. *Autumn Topdressing Effects on Anthracnose Disease of Annual Bluegrass*. *Agron J. In Press*; doi: 10.2134/agronj2018.01.0052
- Schmid\*, C.J., B.B. Clarke, and J.A. Murphy. 2018. *Potassium Nutrition Affects Anthracnose on Annual Bluegras*. *Agron J.* 110:2171-2179
- Luo, J., P. Vines, A. Grimshaw, L. Hoffman, E. Walsh, S. Bonos, B. B. Clarke, J. Murphy, W. Meyer, and N. Zhang. 2017. *Magnaporthiopsis meyeri-festucae sp. nov. associated with a summer patch-like disease of fine fescue turfgrass*. *Mycologia*. DOI: <http://dx.doi.org/10.1080/00275514.2017.1400306>
- Tian, Z., R. Wang, K. Ambrose, B. B. Clarke, and F. Belanger. 2017. *The Epichloe festucae antifungal protein has activity against the plant pathogen Sclerotinia homoeocarpa, the causal agent of dollar spot disease*. *Scientific Reports* 7:5643. DOI:10.1038/s41598-017-06068-4.
- Hempfling\*, J.W., B. B. Clarke, and J. A. Murphy. 2017. *Best management practices effects on anthracnose disease of annual bluegrass*. *Crop Sci.* 57:602-610 doi:10.2135/cropsci2016.06.0492
- Tian, Z., Wang, R., Ambrose, K.V., Clarke, B.B., and Belanger, F.C. 2017. *Isolation of a potential*

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*antifungal protein produced by Epichloë festucae, a fungal endophyte of strong creeping red fescue.* International Turfgrass Society Research Journal 13: 233-235

Schmid\*, C.J., B.B. Clarke, and J.A. Murphy. 2017. *Anthracnose severity and annual bluegrass quality as influenced by nitrogen source.* Crop Sci. 57:1–8. doi: 10.2135/cropsci2016.06.0494

Beirn\*, L.A., J. W. Hempfling, C. J. Schmid, James A. Murphy, B.B. Clarke, and J.A. Crouch. 2016. *Differences among soil-inhabiting microbial communities in Poa annua turf throughout the growing season.* Crop Sci. 57:1–12. doi: 10.2135/cropsci2016.06.0463

Beirn\*, L.A., W.A. Meyer, B.B. Clarke J.A., and Crouch. 2016. *A Greenhouse-based inoculation protocol for fungi causing crown rust and stem rust diseases of Kentucky bluegrass turf.* Hort Sci. 50(10):1509-1513

Beirn\*, L.A., Wang, R., Clarke, B.B., and Crouch, J.A. 2015. *Development of a greenhouse-based inoculation protocol for the fungus Colletotrichum cereale pathogenic to annual bluegrass (Poa annua);* PeerJ 3:e1153 <https://dx.doi.org/10.7717/peerj.1153>.

Hempfling\*, J.W., B. B. Clarke, and J. A. Murphy. 2015. *Anthracnose disease on annual bluegrass as influenced by spring and summer topdressing.* Crop Sci. 55 (1-2): 437-443; doi: 10.2135/cropsci2014.04.0297.

Schmid\*, C.J., J.A. Murphy, B.B. Clarke, M. Dacosta, and J.S. Ebdon. 2015. *Observations on the effect of potassium on winter injury of annual bluegrass in New Jersey in 2015.* Crops, Forage, & Turfgrass Mgmt. doi:10.2134/cftm2015.0170.

**Non-referred Publications: (2015-2023)** \*indicates senior author was one of Clarke's graduate students or was from Clarke's Laboratory.

Guilfoyle, LM, and B. B. Clarke. 2023. Developing an Effective and Environmentally Sound Fungicide Program. ONCourse [Ontario Golf Course Superintendent's Assn. Quarterly Magazine] (6):15-17.

Hempfling, J.W., B.B. Clarke, and J.A. Murphy. 2023. A Better Way To Spray? Improving a Dollar Spot Forecast Model. USGA Green Section 61 (8): May 5, 2023 [A Better Way To Spray? Improving a Dollar Spot Forecast Model \(usga.org\)](#)

Hempfling, J.W., B.B. Clarke, and J.A. Murphy. 2022. Dollar spots symptoms vary among bentgrass cultivars. Golf Course Management 90: Submitted March 22, 2022.

Hempfling, J.W., B.B. Clarke, and J.A. Murphy. 2022 Improving the accuracy of disease forecasting for bentgrasses with reduced susceptibility to dollar spot. USGA Green Sec. Record. In press.

Sullivan, K. P., J. Murphy, and B.B. Clarke. 2021. The New Jersey Turfgrass Industry: 2019 Economic Impact, Structure, and Characteristics. Rutgers University Office of Research Analytics and Center for Turfgrass Science, New Brunswick, NJ 94 p.

Zhang, P., D. Ward, J. Murphy, and B. Clarke. 2021. Action thresholds for the Smith-Kerns dollar spot model on two creeping bentgrass cultivars. Golf Course Management 89 (6): 79 [Golf Course Management June 2021 \(mydigitalpublication.com\)](#).

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- Zhang, P., D. Ward, J. Murphy, and B. Clarke. 2021. Curative threshold fungicide scheduling for dollar spot control in bentgrass fairway turf. *Golf Course Management* 89 (7): in Press.
- Hreben, J., D. Marcinek, D., Perrine, B., Tardogno, M., Castagna, M., Murphy, J. A., Clarke, B.B., Elmore, M., Hamilton, G., Koppenhofer, A., and Obropta, C. 2021. New Jersey Golf Industry Best Management Practices. GCSAA, Lawrence, KS. 107 p.
- Murphy, J. A., B. B. Clarke, J. A. Inguagiato, and M. Kenna. 2020. *BMPs for anthracnose control on annual bluegrass putting greens*. *Golfdom*: In Press
- Noon, C.S., J. Hempfling, J.A. Murphy, and B.B. Clarke. 2019 *Disease forecasting and cultivar resistance can reduce fungicide use*. Clippings” In Press
- Braitmaier, B and B. B. Clarke. 2019. Gray leaf spot - a new disease on football stadiums and training grounds in Europe. *German Greenskeeper*: In Press
- Beirn, L. A.,\* C. Salgado-Salazara, L. P. Tredway, B. B. Clarke and J. Crouch. 2018. *A new genus: Identifying and naming the fungi that cause dollar spot on turf*. *Golf Course Management* 86 (7) 69-72
- Beirn, L. A.,\* C. Salgado-Salazara, L. P. Tredway, B. B. Clarke and J. Crouch. 2018. *A new genus: Identifying and naming the fungi that cause dollar spot on turf*. *Golf Course Management* 86 (7) 69-72
- Murphy, J.A., B.B. Clarke and J. A. Inguagiato. 2018. *Update on Best Management Practices for Anthracnose on Annual Bluegrass Turf*. *Golf Course Management* 86 (2) 76-85
- Murphy, J.A., J. Hempfling, and B.B. Clarke. 2018. *Rutgers researchers continue their pursuit of BMPs for dollar spot control*. Tri-state Research Foundation Newsletter, Spring 2018
- Tian, Z., R. Wang, B. B. Clarke, and F. C. Belanger. 2017. A fungal endophyte vs the dollar spot pathogen. *Golf Course Management* 85(9): 79
- Murphy, J.A., J. Hempfling, and B.B. Clarke. 2017. Rutgers researchers forge ahead in their pursuit of BMPs for dollar spot control. Tri-state Research Foundation Newsletter, Spring 2017
- Clarke, B. B., C.J. Schmid, J. W. Hempfling, and J. A. Murphy. 2016. Anthracnose: A summer killer. *Australian Turfgrass Mgm't J.*: 18: 32-33/
- Murphy, J.A., J. Hempfling, and B.B. Clarke. 2016. Using bentgrass tolerance, disease predictive models, and fungicide timing to control dollar spot on fairway turf. *Golf Course Management* 84: 74-75.
- Hempfling\*, J., C. Schmid, J. Murphy, and B. Clarke. 2016. *Seeking best management practices for dollar spot control*. Tri-state Research Foundation Newsletter, Spring 2016 issue
- Schmid\*, C., J. Murphy, and B. Clarke. 2016. *Rutgers research team delves deeper into best management practices for anthracnose control*. Tri-state Research Foundation Newsletter, Spring 2016 issue
- Aynardi, B., J. Inguagiato, S. Mc Donald, B. Clarke, and W. Uddin. 2016. *Lessen your anthracnose struggles*. *Golfdom* 72 (March 11) <http://www.golfdom.com/lessen-your-anthracnose-struggles/>

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Schmid\*, C. J., J.W. Hempfling, B. B. Clarke, and J.A. Murphy. 2015. *Tackling anthracnose disease on annual bluegrass greens*. NZ Turf Mgmt J. Autumn 2015: 8-10.

Clarke, B.B. and J. Murphy. 2015. *Working outline of best management practices for anthracnose control of annual bluegrass putting green turf0 2015 update*. Rutgers Center for Turfgrass Science Website ([www.turf.rutgers.edu](http://www.turf.rutgers.edu))

Clarke, B.B. 2015. *2015 International Turfgrass Society (ITS) mid-conference meeting and 2017 International Research Conference planning meeting*. International Turfgrass: The Newsletter of the ITS (November 2015 edition): 4-5. ISSN 2312-6558)

Beirn\*, L.A., Schmid, C.J., Hempfling, J.W., Murphy, J.A., Clarke, B.B., and Crouch, J.A. 2015. Impact of fertility on microorganism communities in the *Poa annua* rhizosphere. *Golf Course Management* 83(1):120

**Outreach Publications: (2015-2020)**

Clarke B.B., P. Vincelli, P. Koch and G. Munshaw. 2017-2020. Chemical Control of Turfgrass Diseases 2020. PPA-1. Departments of Plant Biology, Rutgers University; Plant Pathology, University of Kentucky; and Plant Pathology, University of Wisconsin-Madison. 34 pp (Translated into French and Japanese in 2021).

Clarke, B.B. and S. McDonald. 2015-2020. Cutting Edge Disease Identification and Management. Golf Course Superintendents Association of America, Lawrence, KS. 168 pp. (text revised each year for a one day workshop, and 3 to 4 regional seminars held throughout the United States, presented to golf course superintendents from different parts of the world).

Clarke, B. B. and J. A. Murphy. 2007-2019. Current Best Management Practices for the Control of Anthracnose on Golf Courses Golf Course Superintendents Association of America, Lawrence, KS Golf Course Superintendents Association of America, Lawrence, KS presented in Orlando, FL to golf course superintendents from different parts of the world). (<http://www.turf.rutgers.edu>)

Clarke, B. B. and S. McDonald. 2017. Case Studies in Disease Management of Cool-Season Grasses. Golf Course Superintendents Association of America, Lawrence, KS 30 pp. presented in Orlando, FL to golf course superintendents from different parts of the world).

**NJAES Hatch Projects (2015-2020)**

Roberts, J., B. Clarke, J. Murphy, N. Zhang, et al. 2016-2021, NE1602, “*Explorations into the Turfgrass Phytobiome: Establishing Standardized Research Methodology for Studying Microbial Communities and Developing Reliable Applications for Turfgrass Management*.” (NE 1602 Turfgrass Regional Research Project; coordinated writing of project proposal with J. Roberts along with 15 scientists from throughout North America)

Koppenhofer, A., F. Wong, B. B. Clarke, et. al. 2011-2016. *Management of Annual Bluegrass on Golf Courses: Improved Practices for Maintenance, Pest Control, and Viable Techniques for Transition to More Desirable Grasses* (NE-1046 Turfgrass Regional Research Project; Coordinated writing of project proposal with A. Koppenhofer and F. Wong along with 20 other scientists from throughout North America and Canada).

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**Rutgers Turf Blog** (<http://turfblog.rutgers.edu/>): contributor (2012 – present)

**COMPETITIVE GRANTS and CONTRACTS RECEIVED**

Total External Competitive Grants (1990-2021)..... \$9,818,200  
(USDA-NIFA, USDA-SRI, and NE IPM, USGA, GCSAA, GCSANJ, NJTF, Tri-State Found., Rutgers)

Total External Contracts (1987- 2021)..... **\$9,983,907**

**FUNDRAISING EFFORT AS CENTER DIRECTOR: (1996-2021)**

Total External Gifts to Turf Program.....\$12,864,000

**TEACHING EXPERIENCE**

16:765:536. *Plant Disease Diagnostics* (graduate course, 100% resp., alternate years, 3 cr.) 1982-2020

11:776:408 *Turfgrass Pest Science* (undergraduate course, 50% resp., alternate years, 4 cr.) 1999-2020

11:776:389 *Applications of Irrigation and Equipment Technology* (Undergraduate course, 2007-2019  
100% responsibility, alternate years, 3 cr.)

*Case Studies in Turfgrass Mgm't* (2 Yr Prof. Golf Turf Mgm't Prog. 50% resp., Sp & Fall) 2000-present

**GRADUATE AND POST DOCTORAL ADVISING: (1982-2021)**

Doctoral Thesis: Primary Advisor – 11

Masters Thesis: Primary Advisor – 11

Member on Other Graduate Committees – 26

Post-Doctoral Fellows/ Visiting Scientists - 9

Undergraduate Independent Study Students: 10

**EXTENSION/OUTREACH PRESENTATIONS:**

Presents over 65 educational presentations, workshops, webcasts, and in-service programs each year to extension clientele and county staff at international (9 countries), national (49 states) and state meetings, conferences, and field days.

**HONORS AND AWARDS**

Recognition Award, School of Environmental and Biological Sciences, Provost's & Chancellor's Celebration of Faculty Excellence at Rutgers University (2021)

Rutgers Cooperative Extension Specialist of the Year Award (2020)

President's Award from the Nebraska Turfgrass Association (2020)

CSSA Fred V. Grau Turfgrass Science Award from the Crop Science Society of America (2016)

USGA Green Section Award from the United States Golf Association (2016)

Col. John Morley Distinguished Service Award from the Golf Course Superintendents Association of America (2014)

American Phytopathological Society Fellow Award (2012)

Award of Merit - Northeastern Division of the American Phytopathological Soc. (2011)

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Northeast Award for Excellence in Multistate Research from the Northeastern Regional Association of State Agricultural Experiment Station Directors (2011)

Visionary Leadership Award from the Epsilon Sigma Phi National Extension Society (2011)

Distinguished Alumni Award - Graduate School, Rutgers Univ. (2008)

Dennis Fenton Graduate Alumni Award - Cook College, Rutgers University (2007)

Outstanding Professor of the Year Award - Graduate Student Assn., Rutgers (2007)

Team Research and Outreach Award - Rutgers Cooperative Extension (2011, 2007, 1996)

Fellow Awards - Crop Science Society of America (2006); American Society of Agronomy (2004)

Ralph Geiger Endowed Chair - Rutgers University (2005)

Distinguished Service Award - Golf Course Superint. Assn. NJ (2003)

Extension Excellence Award - Rutgers Cooperative Extension (2003)

John Reid Lifetime Achievement Award - Metro. Golf Course Sup. Assn. – (2002)

Weisblat Award for Excellence in Research, Teaching, and Outreach - NJ Agric. Exp. Stn. (2001)

Hall of Fame Award - New Jersey Turfgrass Assn. (1996)

### PROFESSIONAL MEMBERSHIP AND SERVICE ACTIVITIES

Member of the American Phytopathological Society (APS, 1978-present), American Society of Agronomy (1993-present), American Association for the Advancement of Science (1978-present), Crop Science Society of America (1993-present), European Turfgrass Society (2008-present), International Turfgrass Society (1985-present; President [2013-2017], Board of Directors [2001-2009]), NE APS Div (1978-present, President [2000-2001]).

Associate Editor - Plant Disease (1997-1999).

Journal Reviewer: Plant Disease (1989-present), Phytopathology (1991-present), Applied Turf Sci. (2000-present), Agronomy Journal (1995-present), Soil Biology and Biochemistry (1995-present), Journal of Turfgrass Management (1994-2003), Journal of the International Turfgrass Soc. (2001, 2009, 2013), Crop Science (2002-present), Mycological Research (2009-present), Plant Mgm't Network (APS, 2015-present).

Program Reviews: Univ. of FL Turf Program (1997), NC State Center for Turfgrass Science (2015)

Grant Panels: Canadian National Science and Engineering Council (1998-2008) and the Tri-State Research Foundation (1998), Scandinavian Turfgrass and Environment Research Foundation (2022-2025).

Tenure Packet Reviewer: three to five packets/yr for universities in US and Canada (1997-present).

Junior Faculty Mentoring Committees: 12 (1990- 2018 at Rutgers Univ.)