James A. Murphy Curriculum Vitae (2015 to 2020)

Contact Information

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**Education**

Ph.D. in Crop and Soil Sciences.Michigan State University. 1990

M.S. in Crop and Soil Sciences.Michigan State University. 1986

B.S. in Agriculture.Western Illinois State University. 1983

**Professional Experience**

**Rutgers, The State University of New Jersey**

2006 to present Extension Specialist in Turfgrass Management, Dep. of Plant Biology

1997 to 2006 Associate Extension Specialist in Turfgrass Management, Dep. of Extension Specialists

1991 to 1997 Assistant Extension Specialist in Turfgrass Management, Dep. of Extension Specialists

**Michigan State University**

1990 to 1991 Post‑doctoral Research Associate, Dep. of Crop and Soil Sciences.

**Extension**

New Jersey’s turfgrass industry is estimated to generate $3.2 billion to the economy and provide more than 53,000 jobs in 2001. Turfgrasses covers 18% of the land in New Jersey, or 880,542 acres. The primary industry sectors include service providers, sod producers, golf courses, cemeteries, parks, schools, large commercial, institutions, highways, houses of worship, airports, and homeowners. The homeowner sector accounts for 76% of the total acreage in New Jersey. Such a large and diverse industry creates a great demand for information and education to addresses current and potential future challenges facing the turfgrass industry. Moreover, clientele varies in their level of expertise, ranging from those with considerable training (master’s degree) and experience to novice managers. Dr. Murphy leads outreach programs and produces Extension materials to meet the needs of this diverse clientele with timely, research-based education. His research program complements his Extension activities regarding best management practices for turfgrass systems with foci on plant and soil interactions, adoption of improved turfgrass cultivars, and disease forecasting to improve sustainability.

**Scholarship**

**Refereed Journal Articles:**

1. Wang, R., J. W. Hempfling, B. B.Clarke, and J. A. Murphy. 2020. Sand size affects topdressing removed by mowing and anthracnose on annual bluegrass putting green turf. HortScience https://doi.org/10.21273/HORTSCI14396-19
2. Elmore, M., A. Patton, D. Tuck, J. Murphy, and J. Carleo. 2019. False-green kyllinga (Kyllinga gracillima) control in cool-season turfgrass. Weed Technology, 1-6. doi:10.1017/wet.2019.16
3. Yue, C., J. Wang, E. Watkins, S.A. Bonos, K.C. Nelson, J.A. Murphy, W.A. Meyer, and B.P. Horgan. 2019. Investigating the practices and challenges for turfgrass breeders and distributors. HortScience. 54(1):129–135. doi.org/10.21273/HORTSCI13343-18
4. Barnes, M., K. Nelson, A. Meyer, E. Watkins, S. Bonos, B. Horgan, W. Meyer, J. Murphy, and C. Yue. 2018. Public Land Managers and Sustainable Urban Vegetation: The Case of Low-input Turfgrasses. Urban Forestry & Urban Greening 29: 284-292.
5. Elmore, M.T., J.A. Murphy, and B.S. Park. 2018. Herbicide regimens for creeping bentgrass control in Kentucky bluegrass. HortScience: 53(11):1689–1694. doi.org/10.21273/HORTSCI13050-18
6. Schmid, C. J., B. B. Clarke, and J. A. Murphy. 2018. Potassium nutrition affects anthracnose on annual bluegrass. Agron. J. 110:2171-2179
7. Wang, R., B.B. Clarke, and J.A. Murphy. 2018. Seasonal and annual topdressing effects on anthracnose of annual bluegrass. Agron. J. 110:2130-2135.
8. Beirn, L.A., J.W. Hempfling, C.J. Schmid, J.A. Murphy, B.B. Clarke and J.A. Crouch. 2017. 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
9. Hempfling, J.W. C.J. Schmid, R. Wang, B.B. Clarke, and J.A. Murphy. 2017. Best Management Practices Effects on Anthracnose Disease of Annual Bluegrass. Crop Science. 57:602-610. doi:10.2135/cropsci2016.06.0492
10. Luo, J., P.L. Vines, A. Grimshaw, L. Hoffman, E. Walsh, S. A. Bonos, B. B. Clarke, J. A. Murphy, W. A. Meyer, and N. Zhang. 2017. Magnaporthiopsis meyeri-festucae sp. nov. associated with a summer patch-like disease of fine fescue turfgrasses. Mycologia. 109:780-789.
11. Park, B., and J.A. Murphy. 2017. Response of Tall Fescue and Kentucky Bluegrass Mixtures to Wear. International Turfgrass Society Research Journal. 13: 346-352. doi:10.2134/itsrj2016.06.0503
12. Schmid, C.J., B.B. Clarke, and J.A. Murphy. 2017. Anthracnose Severity and Annual Bluegrass Quality as Influenced by Nitrogen Source. Crop Sci.: doi:10.2135/cropsci2016.06.0494
13. Schmid, C.J., J.A. Murphy, and S. Murphy. 2017. Effect of tillage and compost amendment on turfgrass establishment on a compacted sandy loam. J. of Soil and Water Conservation. 72(1):55-64.
14. Throssell, C., J. Kruse, C. Bigelow, and J.A. Murphy. 2017. Fertilizer Granule Collection and Nutrient Removal from Putting Greens Following Mowing. International Turfgrass Society Research Journal. 13: 275-279. doi:10.2134/itsrj2016.05.0372
15. Yue, C., J. Wang, E. Watkins, S. Bonos, K. Nelson, J.A. Murphy, W. Meyer, and B. Horgan. 2017. Consumer Preferences for Information Sources of Turfgrass Products and Lawn Care. Agronomy Journal. 109: 4: 1726-1733. doi:10.2134/agronj2016.05.0310
16. Yue, C., J. Wang, E. Watkins, S. Bonos, K. Nelson, J. Murphy, W. Meyer, and B. Horgan. 2017. Heterogeneous consumer preferences for turfgrass attributes in the United States and Canada. Canadian Journal of Agricultural Economics. DOI: 10.1111/cjag.12128
17. Park, B.S., Chen, H. and Murphy, J.A. 2016. Comparing the Rutgers Wear Simulator, Cady Traffic Simulator, and Brinkman Traffic Simulator. Acta Hort. (ISHS) 1122:103-110
18. Schmid, Charles J., James A. Murphy, Bruce B. Clarke, Michelle DaCosta and J. Scott Ebdon. 2016. Observations on the Effect of Potassium on Winter Injury of Annual Bluegrass in New Jersey in 2015. Crop, Forage & Turfgrass Management 2: 1-4. doi:10.2134/cftm2015.0170
19. 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. 55:437-443. doi:10.2135/cropsci2014.04.0297

**Non-Refereed Journal Articles:**

1. Park, Bradley S., H. Samaranayake, J. A. Murphy. 2019. Tall fescue and Kentucky bluegrass: Mixture research. Turf News [TPI]. July/August. 43(4):75-78.
2. Chen, Hui, and J. Murphy. 2019. Removing coarse topdressing sand from greens. Golfdom. May. 75(5):35
3. Yue, Chengyan; J. Wang, E. Watkins, B. Horgan, S. A. Bonos, K. Nelson, J. Murphy, and W. Meyer. 2019. Do North American consumers prefer low-input turfgrasses for their home lawns? Turf News [TPI]. May/June. 43(3):59-62.
4. Diehl, Katherine H.; Elmore, Matthew T.; Koppenhöfer, Albrecht M.; Murphy, James A. 2019. A lesser of two weevils? Golfdom. February. 75(2):33
5. Elmore, Matthew T.; Patton, Aaron J.; Park, Bradley S.; Murphy, James A. 2018. Controlling false-green kyllinga in cool-season turf. SportsTurf. May. 34(5):18-20.
6. Murphy, J.A., B.B. Clarke, and J.A. Inguagiato. 2018. Update on BMPs for anthracnose on annual bluegrass turf. Golf course Management. February. 86(2):76-85.
7. Murphy, J.A. 2017. 13th International Turfgrass Research Conference: Meeting the Challenges of a Changing Environment. Agron. J. 109: 4: 1707-1707.
8. Murphy, James A.; Hempfling, James; Clarke, Bruce B. 2016. Using bentgrass tolerance, disease predictive models and fungicide timing to control dollar spot on fairway turf. Golf Course Management. November. 84(11):74-75
9. Murphy, J.A., C.J. Schmid, and B.B Clarke. 2015. Annual bluegrass response to potassium and calcium fertilization and soil pH. USGA Turfgrass Environ. Res. Online. 14:35-38.
10. Schmid, C.J., J.W. Hempfling, B.B. Clarke, and J.A. Murphy. 2015. Tackling anthracnose disease on annual bluegrass greens: Current thinking on the management practices to best control this disease while managing costs and retaining playability. NZ Turf Management Journal. Autumn. 32(1): p. 8-10.

**Invited International Conference Presentation**

**Turfgrass Society of Korea, Annual Conference, Gyeonggi-do, South Korea**

1. Murphy, J. A. Developing Best Management Practices for Anthracnose on Annual Bluegrass Turf

**Published International Conference Proceedings:**

1. Chen, Hui, B. S. Park, and J. A. Murphy. 2018. Leaf bruising of fine fescues subjected to wear during three seasons. 6th European Turfgrass Society Conference – Different Shades of Green. 2-4 July 2018. Manchester UK. p. 28-29.
2. Luo, J. P.L. Vines, A.Grimshaw, L. Hoffman, E. Walsh, S.A. Bonos, B.B. Clarke, J.A. Murphy, W.A. Meyer, and N. Zhang. 2018. Novel Magnaporthales fungi pathogenic to switchgrass and turfgrasses. International Congress of Plant Pathology (July-August 2018) in Boston
3. Murphy, James A. 2017. 13th International Turfgrass Research Conference: Meeting the challenges of a changing environment. International Turfgrass Society Research Journal. 13:1-2.

**Published Abstracts for National Meetings:**

1. Chen, Hui; Hempfling, James; Genova, Kyle M.; Schmid, Chas; Murphy, James A. 2019. Removal of coarse sand from topdressing on putting green turf. ASA, CSSA and SSSA International Annual Meetings. p. 119674.
2. Diehl, K.; Elmore, M.; Koppenhöfer, A.; Murphy, J.; Tuck, D.P.; Kostromytska, O. 2019. Annual bluegrass weevil (Listronotus maculicollis) and paclobutrazol for annual bluegrass (Poa annua) control in fairways. Proceedings of the Fourth Annual Meeting of the Northeastern Plant, Pest, and Soils Conference. 4: p. 35.
3. Diehl, Katherine H.; Elmore, Matthew T.; Murphy, James A.; Koppenhofer, Albrecht M.; Kostromytska, Olga S. 2019. Annual bluegrass weevil (Listronotus maculicollis) and paclobutrazol for annual bluegrass (Poa annua) control in creeping bentgrass (Agrostis stolonifera) fairways. ASA, CSSA and SSSA International Annual Meetings. p. 121494.
4. Genova, Kyle M.; Clarke, Bruce B.; Murphy, James A. 2019. Anthracnose response to potassium Under two nitrogen levels. ASA, CSSA and SSSA International Annual Meetings. p. 122309.
5. Lee, Sang Kook; Zhang, Pingyuan; Clarke, Bruce B.; Murphy, James A. 2019. Quantifying dollar spot severity using digital image analysis. ASA, CSSA and SSSA International Annual Meetings. p. 120800.
6. Park, Bradley S.; Murphy, James A. 2019. Kentucky bluegrass response to traffic during autumn. ASA, CSSA and SSSA International Annual Meetings. p. 118894.
7. Zhang, Pingyuan; Murphy, James A.; Clarke, Bruce B. 2019. Dollar spot control as affected by fungicide programming and bentgrass susceptibility. ASA, CSSA and SSSA International Annual Meetings. p. 120893.
8. Chen, Hui; Hempfling, James; Genova, Kyle; Schmid, Chas; Murphy, James. 2018. Removal of coarse sand from topdressing on putting green turf. ASA, CSSA and SSSA International Annual Meetings. p. 112004.
9. Chen, Hui; Murphy, James. 2018. Wear tolerance of fine fescues in relation to leaf tissue fiber content. ASA, CSSA and SSSA International Annual Meetings. p. 112013.
10. Diehl, Katherine H.; Elmore, Matthew T.; Koppenhofer, Albrecht M.; Murphy, James A.; Tuck, Daniel P.; Kostromytske, Olga S. 2018. Annual bluegrass weevil (Listronotus maculicollis), paclobutrazol and interseeding effects on annual bluegrass (Poa annua) in creeping bentgrass (Agrostis stolonifera) fairways. ASA, CSSA and SSSA International Annual Meetings. p. 113413.
11. Genova, Kyle M.; Clarke, Bruce B.; Murphy, James A. 2018. Impact of rolling and dew removal on dollar spot disease of bentgrass fairway turf. ASA, CSSA and SSSA International Annual Meetings. p. 113520.
12. Park, Bradley S.; Murphy, James A. 2018. A new cooperative extension fact sheet: Tall fescue cultivars for high traffic turf. ASA, CSSA and SSSA International Annual Meetings. p. 112619.
13. Watkins, Eric; Trappe, Jon M.; Renz, Mark J.; Murphy, James A.; Park, Bradley S.; Frank, Kevin W.; Hathaway, Aaron; Soldat, Douglas J.; Bero, Nicholas; Kreuser, William Collin. 2018. Performance of turfgrass cultivars in multiple northern U.S. roadside environments. ASA, CSSA and SSSA International Annual Meetings. p. 112342.
14. Chen, Hui; Murphy, James A. 2017. Nitrogen effect on fine fescue fiber and protein contents. ASA, CSSA and SSSA International Annual Meetings. p. 105641.
15. Chen, Hui; Hempfling, James W.; Schmid, Charles J.; Genova, Kyle M.; Murphy, James A. 2017. Removal of coarse sand from topdressing applied to putting green turf. ASA, CSSA and SSSA International Annual Meetings. p. 105649
16. Elmore, M. T.; Murphy, J. A.; Park, B. S.; Mansue, C.; Alea, S. 2017. Herbicide programs for creeping bentgrass (Agrostis stolonifera) control in Kentucky bluegrass (Poa pratensis). Proceedings of the Second Annual Meeting of the Northeastern Plant, Pest, and Soils Conference. p. 98.
17. Genova, Kyle M.; Clarke, Bruce B.; Murphy, James A. 2017. Potassium effects on pink snow mold incidence of annual bluegrass. ASA, CSSA and SSSA International Annual Meetings. p. 109022.
18. Genova, K.; Clarke, B.; Murphy, J. 2017. Rolling and dew removal effects on dollar spot disease of creeping bentgrass. Phytopathology. February. 107(2S): p. S2.7.
19. Hempfling, James W.; Murphy, James A.; Clarke, Bruce B. 2017. Evaluation of dollar spot predictive models on bentgrasses in New Jersey. ASA, CSSA and SSSA International Annual Meetings. p. 109127
20. Hempfling, James W.; Murphy, James A.; Clarke, Bruce B. 2017. Bentgrass susceptibility affects fungicide programming for dollar spot. ASA, CSSA and SSSA International Annual Meetings. p. 109195.
21. Hempfling, J.; Murphy, J.; Clarke, B. 2017. Predictability of dollar spot disease development on bentgrass using weather-based models. Phytopathology. February. 107(2S): p. S2.8.
22. Park, B. S.; Elmore, M. T.; Alea, S.; Mansue, C.; Murphy, J. A. 2017. Using herbicides and perennial ryegrass to renovate turf dominated by annual bluegrass during 2015-16. Proceedings of the Second Annual Meeting of the Northeastern Plant, Pest, and Soils Conference. p. 101.
23. Park, Bradley S.; Murphy, James A. 2017. Using digital image analysis to assess tall fescue traffic tolerance during spring, summer, and autumn. ASA, CSSA and SSSA International Annual Meetings. p. 107151.
24. Chen, Hui; Park, Bradley S.; Murphy, James A. 2016. Performance of fine fescues under wear stress in different seasons. ASA, CSSA and SSSA International Annual Meetings. p. 101424.
25. Chen, Hui; Murphy, James A. 2016. Fiber and protein content of fine fescues as affected by N fertilization. ASA, CSSA and SSSA International Annual Meetings. p. 101426.
26. Genova, Kyle M.; Clarke, Bruce B.; Murphy, James A. 2016. Rolling and dew removal effects on dollar spot disease of creeping bentgrass. ASA, CSSA and SSSA International Annual Meetings. p. 101843.
27. Hempfling, James W.; Clarke, Bruce B.; Murphy, James A. 2016. Best management practices for anthracnose on annual bluegrass. ASA, CSSA and SSSA International Annual Meetings. p. 100384
28. Hoffman, Lindsey; Weibel, Eric N.; Tate, Trent Matthew; Grimshaw, Austin Lee; Mohr, Melissa M.; Smith, Dirk A.; Murphy, James A.; Meyer, William A.; Bonos, Stacey A. 2016. Evaluation of Kentucky bluegrass cultivars and selections under reduced input management. ASA, CSSA and SSSA International Annual Meetings. p. 100683.
29. Mansue, C.; Murphy, J. A. 2016. Control of false green kyllinga in cool-season turf. Proceedings of the First Annual Meeting of the Northeastern Plant, Pest, and Soils Conference. p. 155-156.
30. Park, B. S.; Mansue, C.; Murphy, J. A. 2016. Using herbicides to renovate turf dominated by annual bluegrass. Proceedings of the First Annual Meeting of the Northeastern Plant, Pest, and Soils Conference. p. 148-149.
31. Park, Bradley S.; Chen, Hui; Murphy, James A. 2016. Kentucky bluegrass response to wear and traffic during autumn. ASA, CSSA and SSSA International Annual Meetings. p. 100269.
32. Schmid, Charles J.; Murphy, James A.; Clarke, Bruce B. 2016. Annual bluegrass response to potassium and calcium fertilization and soil pH. ASA, CSSA and SSSA International Annual Meetings. p. 99639.
33. Beirn, Lisa A.; Hempfling, James W.; Schmid, Charles J.; Murphy, James A.; Clarke, Bruce B.; Crouch, Jo Anne. 2015. Metagenomic insights into rhizosphere microbial communities in annual bluegrass putting green turf. ASA, CSSA and SSSA International Annual Meetings. p. 94108.
34. Chen, Hui; Park, Bradley S.; Murphy, James A. 2015. Performance of fine fescues under two forms of traffic. ASA, CSSA and SSSA Annual Meetings, 18 Nov. 2015. Minneapolis, MN. [2015] (Oral presentation)
35. Chen, Hui; Park, Bradley S.; Murphy, James A. 2015. Performance of fine fescues under two forms of traffic. Plant Biology and Pathology Graduate Student Symposium, 2 Oct. 2015. New Brunswick, NJ. [2015] (Oral presentation)
36. Hempfling, James W.; Murphy, James A. 2015. Evaluating the effects of removing coarse and medium sand from topdressing on velvet bentgrass turf. ASA, CSSA and SSSA International Annual Meetings. p. 94371.
37. Horgan, Brian; Leslie, Madeline; Murphy, James A.; Bauer, Samuel. 2015. Building an extension program for the fine fescue SCRI grant. ASA, CSSA and SSSA International Annual Meetings. p. 93790.
38. Mansue, C.; Murphy, J. A. 2015. Comparing herbicides for the control of false green kyllinga. Proceedings of the Sixty-ninth Annual Meeting of the Northeastern Weed Science Society. 69: p. 87.
39. Park, Bradley S.; Samaranayake, Hiranthi; Murphy, James A. 2015. Assessing the species composition of tall fescue and Kentucky bluegrass mixtures. ASA, CSSA and SSSA International Annual Meetings. p. 93649.
40. Schmid, C.J., J.A. Murphy, and B.B. Clarke. 2015. Effect of soil pH on annual bluegrass quality and color. In Annual meetings abstract [CD]. ASA, CSSA, and SSSA, Madison, WI.
41. Schmid, C. J.; Murphy, J. A.; Clarke, B. B. 2015. Establishment of soil and tissue potassium sufficiency ranges for control of anthracnose disease on annual bluegrass turf. Phytopathology. November. 105(11S): p. S4.180.
42. Wang, Ruying; Hempfling, James W.; Clarke, Bruce B.; Murphy, James A. 2015. Sand size affects topdressing removed by mowing on putting green turf. ASA, CSSA and SSSA International Annual Meetings. p. 94008.
43. Watkins, Eric; Bonos, Stacy A.; Yue, Chengyan; Nelson, Kristen; Horgan, Brian; Koch, Paul; Murphy, James A.; Huang, Bingru; Meyer, William A.; Clarke, Bruce B. 2015. Germplasm improvement of low-input fine fescues in response to consumer attitudes and behaviors. ASA, CSSA and SSSA International Annual Meetings. p. 94327.

**Research Reports:**

1. Koch, Paul; Clarke, Bruce; Murphy, Jim; Jung, Geunhwa; Zhang, Ning. 2018. Sclerotinia homoeocarpa epidemiology and resistance development as measured through improved molecular detection techniques. Turfgrass and Environmental Research Program: 2018 Research Summaries. p. 263-273
2. Murphy, James A.; Chen, Hui; Genova, Kyle; Hempfling, James W.; Schmid, Charles J. 2018. Effects of finer-textured topdressing sand on creeping bentgrass putting green turf. Turfgrass and Environmental Research Program: 2018 Research Summaries. p. 148-169.
3. Murphy, James A.; Hempfling, James; Clarke, Bruce B. 2018. Bentgrass tolerance, disease predictive models and fungicide timing to control dollar spot on fairway turf. Turfgrass and Environmental Research Program: 2018 Research Summaries. p. 254-262.
4. Murphy, James A.; Chen, Hui; Genova, Kyle; Hempfling, James W.; Schmid, Charles J. 2017. Effects of finer-textured topdressing sand on creeping bentgrass putting green turf. Turfgrass and Environmental Research Program: 2017 Research Summaries. p. 180-192.
5. Murphy, James A.; Hempfling, James; Clarke, Bruce B. 2017. Bentgrass tolerance, disease predictive models and fungicide timing to control dollar spot on fairway turf. Turfgrass and Environmental Research Program: 2017 Research Summaries. p. 255-259.
6. Murphy, James A.; Schmid, Charles J.; Chen, Hui; Hempfling, James W. 2016. Effects of finer-textured topdressing sand on creeping bentgrass putting green turf. Turfgrass and Environmental Research Program: 2016 Research Summaries. p. 170-174.
7. Murphy, James A.; Hempfling, James; Clarke, Bruce B. 2016. Bentgrass tolerance, disease predictive models and fungicide timing to control dollar spot on fairway turf. Turfgrass and Environmental Research Program: 2016 Research Summaries. p. 198-203.
8. Murphy, James A.; Schmid, Charles; Clarke, Bruce B. 2015. Annual bluegrass response to potassium and calcium fertilization and soil pH. USGA Turfgrass and Environmental Research Online. March/April. 14(2): p. 35-38.

**External Grants Received:**

1. Murphy, J.A., and B.B. Clarke. 2020-2022. Optimizing Fungicide Programming for Dollar Spot Control in Bentgrass Fairways. Golf Course Superintendent Association of America, Golf Course Superintendents Association of NJ, and NJ Turfgrass Foundation. $60,000.
2. Murphy, J.A., and H. Chen. 2020-2022. Topdressing sand size effects on mat layer development during treatment years 5 – 7. United States Golf Association. $161,000.
3. Murphy, J.A., and Hui Chen. 2019. Physical Properties of Creeping Bentgrass Mat Layers Formed with Topdressing. United States Golf Association. $40,000.
4. Murphy, J.A., and B.B. Clarke. 2018-2021. Sclerotinia homoeocarpa Epidemiology and Resistance Development as Measured Through Improved Molecular Detection Techniques. United States Golf Association. $105,000
5. Murphy, J.A., and B.B. Clarke. 2018-2019. Assessing the Impact of Bentgrass Disease Tolerance on Fungicide Management of Dollar Spot. Golf Course Superintendents Association of America and Golf Course Superintendents Association of New Jersey. $40,000
6. Murphy, J.A., and B.B. Clarke. 2018-2019. Assessing the Impact of Bentgrass Disease Tolerance on Fungicide Management of Dollar Spot. Ontario Turfgrass Research Foundation. $20,000
7. Murphy, J.A., and B.B. Clarke. 2018. Using Bentgrass Tolerance, Disease Predictive Models and Fungicide Timing to Control Dollar Spot on Fairway Turf. Golf Course Superintendents Association of New Jersey. $10,000
8. Watkins, E. et al. 2017-2021. Increasing Low-Input Turfgrass Adoption Through Breeding, Innovation, and Public Education. A research and Extension project awarded $5,488,602 from the Specialty Crops Research Initiative of USDA to the University of Minnesota, Rutgers University, Purdue University, University of Wisconsin, and Oregon State University.
9. Murphy, J.A. 2016-2018. Effects of Finer-Textured Topdressing Sand on Creeping Bentgrass Putting Green Turf. $90,000
10. Murphy, J.A., and B.B. Clarke. 2016-2018. Using Bentgrass Tolerance, Disease Predictive Models and Fungicide Timing to Control Dollar Spot on Fairway Turf. United States Golf Association. $90,000
11. Murphy, J.A., and B.B. Clarke. 2016-2017. Using Bentgrass Tolerance, Disease Predictive Models and Fungicide Timing to Control Dollar Spot on Fairway Turf. Golf Course Superintendents Association of America. $20,000
12. Murphy, J.A. 2016-2018. Using Bentgrass Tolerance, Disease Predictive Models and Fungicide Timing to Control Dollar Spot on Fairway Turf. Tri-State Turf Research Foundation. $30,000
13. Murphy, J.A., and B.B. Clarke. 2015-2018. Using Bentgrass Tolerance, Disease Predictive Models and Fungicide Timing to Control Dollar Spot on Fairway Turf. Tri-State Turf Research Foundation. $30,000
14. Murphy, J.A., B.B. Clarke, C.J. Schmid and J. W. Hempfling. Influence of soil pH, potassium, and best management practices on anthracnose severity. Awarded by Tri-State Turf Research Foundation (2014-2015) - $20,000.
15. 2013-2017. Germplasm Improvement of Low-Input Fine Fescues in Response to Consumer Attitudes and Behaviors. A research and Extension project awarded $2,136,489 from the Specialty Crops Research Initiative of USDA. Rutgers University subcontracts through the University of Minnesota.

**Extension Website:**

1. Murphy, J.A. Professional Fertilizer Applicator Certification and Training (ProFACT) provides online training, examination and certification and for ~3,000 professionals seeking to become certified or trained. Online at <https://profact.rutgers.edu>

**Extension Bulletin:**

1. Park, B.S., and J.A. Murphy. 2016. Management of Natural Turf Sports Fields. Rutgers NJAES Cooperative Extension E354. Available at <https://njaes.rutgers.edu/pubs/publication.php?pid=E354>

**Newsletter Article:**

1. Sharples, Maureen; Clarke, Bruce; Murphy, James; Elmore, Matthew; Koppenhöfer, Albrecht. 2018. GCSANJ: The trials of a challenging season. New Hampshire Turf Talk. Late Fall. p. 11.
2. Park, Brad; Murphy, Jim. 2016. Integrated Pest Management: Weed, insect, and disease control. Update [New Jersey]. Summer. 16(2):6, 13, 16.
3. Park, Brad; Murphy, Jim. 2016. Overseeding, soil cultivation (aerification), Integrated Pest Management, and management zones. Update [New Jersey]. Spring. 16(1): p. 6, 8, 18.
4. Park, P. and J. Murphy. 2015. Management of Natural Turf Sports Fields – Part 2. Update. 15(4): 5,8,18.
5. Park, Brad; Murphy, Jim. 2015. Control traffic / play Update [New Jersey]. Fall. 15(3): p. 8, 15.
6. Murphy, Jim. 2015. Kyllinga awakens as soil temps increase. Clippings & Green World. Spring. 90(1): p. 14-15.

**Awards:**

2019 Fred V. Grau Turfgrass Science Award, Crop Science Society of America in recognition of significant career contributions in turfgrass science during the most recent 15 years.

2015 Fellow, American Society of Agronomy

**Teaching**

**Undergraduate**

Course Responsibilities

2006-present Soil Management for Sports Fields and Landscapes 11:776:404. 3 credits. Advanced management of soil for sports fields and landscapes. (Taught even years)

Guest Lecture

2019 Introduction to Horticulture 11:776:211 (Ayeni), Turfgrass: Production Principles and Practices

**Graduate**

Ph.D. Dissertation: Advisor

2018-present Pingyuan Zhang

2019 Hui Chen

2019 James Hempfling (Co-advise B. Clarke)

2018 Charles Schmid (Co-advise B. Clarke)

M.S. Thesis: Advisor

2019-present Zhongqi Xu

2015-present Kyle Genova (Co-advise B. Clarke)

2015 Ruying Wang (Co-advise B. Clarke)

Ph.D. Dissertation Committee

2018-present Glen Groben

M.S. Thesis Committee

2017-present Katherine Diehl

**Extension**

Dr. Murphy leads outreach programs and produces Extension materials to meet the needs of a diverse clientele with timely, research-based education that addresses current and potential future challenges facing the turfgrass industry. He has developed and taught short courses through the Office of Continuing Professional Education (OCPE) to reach clientele managing county, municipal, school and household properties. Dr. Murphy developed and coordinates the Professional Fertilizer Applicator Certification and Training (ProFACT) program that trains and certifies ~3,000 professionals in New Jersey regarding best management practices for nutrient management of turf as required by New Jersey Act P.L. 2010, c. 112 (C.58:10A-64). Additionally, Dr. Murphy works with Department of Agriculture and Natural Resources (Extension) faculty and staff to meet the needs of the State’s homeowners and other clientele. In-state, out-of-state, and international clients are served through phone calls, email, press releases, newsletters, websites, social media, and Extension publications (see scholarship) and presentations.

**Major Programs at Rutgers New Jersey Agricultural Experiment Station/Cooperative Extension**

1. Professional Fertilizer Applicator Certification and Training (ProFACT)
2. IPM and Organic Turf Management – OCPE & Dep. of Agriculture and Natural Resources
3. Sports Turf Management – Office of Continuing Professional Education (OCPE) short courses
4. New Jersey Green Expo Turf & Landscape – annual 3-day program
5. Rutgers Turfgrass Research Field Days – 3 annually
   1. Golf and Fine Turf Research
   2. Sports and Landscape Turf Research
   3. Sod Tour

**Office of Continuing Professional Education**

# Short Courses Developed and Lectures

Athletic Field Construction and Maintenance (2-day short course)

2003-present 3 lectures: Soil Management, Cultural Practices, Getting the Job Done

Organic Turf Management (1-day short course)

2009-present 3 lectures annually: Definitions, Soil Health, Cultural Practices

Natural and IPM Strategies for Sports Turf ( ½ day short course)

2009-present 3 lectures annually: Definitions, Soil Health, Cultural Practices

Baseball/Softball Infield Skins Construction and Management (½ day short course)

2007-present 1 lecture annually: Soil characteristics of Infield Skins

New Jersey Fertilizer Recertification Short Course (½ day program, 8 credits for ProFACT recertification)

2015-present 2 lectures annually: Environmental Considerations, Best Management Practices

# Lectures in Short Courses

Rutgers Professional Golf Turf Management School: Two-Year Certificate Program

2000-present Case Studies in Turfgrass Management (10 lectures annually)

2015-present Agronomy: Bentgrasses and Annual Bluegrass (4 lectures annually)

Rutgers Professional Golf Turf Management School: Three-Week Preparatory Course

2002-present Turfgrass Management (2-3 lectures annually)

**Department of Agriculture and Natural Resources**

**Organic Land Care Course** - <https://njaes.rutgers.edu/organiclandcare/>

2013 Wrote training material for Organic Turf Management section  
<https://njaes.rutgers.edu/pubs/publication.php?pid=E357>

2013-present Teach Organic Turf Management section (½ day)

**Central Jersey Turf & Ornamental Institute**

1. 2019 - ¾ hour: Best Management Practices for Turfgrass Fertility and Renovation
2. 2018 - ¾ hour: Innovative Methods for Fertility Management in Turfgrass
3. 2017 - ¾ hour: Effects of Soil Amendments on Nutrient Availability and Performance of Low and High Maintenance Turfgrass Varieties
4. 2016 - 1 hour: Managing Fertility to Maximize Turfgrass Performance
5. 2015 - 1 hour: Protecting Your Watershed: Best Management Practices for Fertilizer Applications

**North Jersey Ornamental Horticulture Symposium – Turf Day**

1. 2020 - 1 hour: Fertilizer Labels: What to Know
2. 2018 - 1 hour: Pros and Cons of Liquid and Granular Turf Fertilizers
3. 2017 - 1 hour: How Do Slow Release Fertilizers Work? (graduate student presented)
4. 2016 - 1 hour: Practices to Improve Soil Health and Water Quality
5. 2015 - 1 hour: Protecting Your Watershed: Best Management Practices for Fertilizer Applications

**ProFACT Training in Ocean County Extension**

Annually since 2015

1. 2 hour: Training for ProFACT Certification Exam and Recertification
2. 2 hour examination: ProFACT Certification Exam

**New Jersey Green Expo Turf & Landscape**

Annually serve on education committee to develop 3-day education program for the golf, sports and landscape sectors, ~1,200 attendees each year

**Presentations and Exam Proctoring**

2019

1. ¾ hour: Sports Field Topdressing: What Are Your Goals?
2. ½ hour: Lawn Renovation Options
3. 2 hour: Training for ProFACT Certification Exam and Recertification
4. 2 hour examination: ProFACT Certification Exam

2018

1. ½ hour: An Introduction to MLSN: Simplify Your Fertilization Plan
2. 2 hour: Training for ProFACT Certification Exam and Recertification
3. 2 hour examination: ProFACT Certification Exam

2017

1. ½ hour: Consumers Prefer Wear Tolerance in Lawns
2. 1 hour: Constructing the Marco Battaglia Practice Football Complex
3. 2 hour: Training for ProFACT Certification Exam and Recertification
4. 2 hour examination: ProFACT Certification Exam

2016

1. ½ hour: Irrigation Use and Abuse
2. ½ hour: Topdressing Sand: How Fine is Too Fine?
3. 2 hour: Training for ProFACT Certification Exam and Recertification
4. 2 hour examination: ProFACT Certification Exam

2015

1. ½ hour: Aerification, Grooming, Organic Matter Management and Surface Conditioning: Why, How, and When
2. 2 hour: Training for ProFACT Certification Exam and Recertification
3. 2 hour examination: ProFACT Certification Exam

**Other In-state Extension Presentations**

**Reed & Perrine Turf & Ornamental Seminar**

1. 2019 - ¾ hour: Nutrient Management for Turf
2. 2018 - ¾ hour: Pros and Cons of Liquid and Granular Fertilization of Turf
3. 2017 - ¾ hour: ProFACT Training for Professional Fertilizer Applicators
4. 2016 - 1 hour: Fertilizer Strategies for Pest Tolerance of Turf
5. 2015 - 1 hour: Fertilizer Programming

2019

**Golf Course Superintendents Association of NJ, Spring Education Day, Kenilworth, NJ**

1. ½ hour: Weather Based Forecasting Models for Dollar Spot
2. ¾ hour: Nutrient Management for Golf Turf

**Friends of The Frelinghuysen Arboretum, Morristown, NJ**

1. 1 hour: Renovating Your Lawn—Tips from the Experts

**United Association of Landscape Contractors, Livingston, NJ**

1. 1 hour: Use of Tall Fescue for Lawns

2018

**Golf Course Superintendents Association of NJ, Spring Education Day, Kenilworth, NJ**

1. 1 hour: Topdressing Research 2016-2017: Sand Size for Putting Greens

2017

**NJ Shade Tree Federation, Cherry Hill, NJ**

1. 1 hour: Soil Health for Healthy Trees

**United Association of Landscape Contractors, Livingston, NJ**

1. 1 hour: Certified Fertilizer Applicator Training

**Rutgers International Education and Training Program, China office, Hunan Polytechnic, New Brunswick, NJ**

1. 2 ½ hour: Turf Management

2016

**NJ Professional Landscape and Nursery Trades Show, Edison, NJ**

1. 1 hour: Nutrient Management

**GCSANJ Spring Seminar**

1. ½ hour: ProFACT Training for Golf Course Superintendents

**Levitts Winter Seminar, Parsippany, NJ**

1. 1 hour: Fertilization Strategies for Pest Tolerance of Turf Landscape

**Rutgers Garden Club Series**

1. 2 hour: Organic Lawn Care

2015

**NJ Professional Landscape and Nursery Trades Show, Edison, NJ**

1. 1 hour: Nutrient Management if Turf

**New Jersey Landscape Nursery Association, Summer Plants Symposium, New Brunswick, NJ**

1. 1 hour: Fertilizer Programming for Turf

**NJ-ASLA Annual Meeting, Seeds of Change, Atlantic City, NJ**

1. 1 hour: Tomorrow’s Verdure: Selecting Grasses for Landscapes

**Cultivated Sod Association of NJ, Winter Sod Seminar, Bordentown, NJ**

1. ½ hour: Update on Tall Fescue and Kentucky Bluegrass Traffic Tests

**Gardening Study School National Garden Club and Garden Club of New Jersey, New Brunswick, NJ**

1. 1 ½ hour: Techniques for Growing Lawns and/or Lawn Alternatives

**Invited International and National Extension Presentations**

2020

**Sports Turf Managers Association, Annual Conference, West Palm Beach, FL**

1. 1 hour: Topdressing Sports Fields: What’s Right For Your Facility?

**GCSAA Education Conference, Golf Industry Show, Orlando, FL**

1. ¼ hour: The Great Debate: Ph.D. Edition (panel debate)
2. ¼ hour: Tall and Fine Fescue - What's New?

2019

**TurfNet Webinar**

1. 1 ½ hour: Best Management Practices to Control Anthracnose

**Carolinas Golf Course Superintendents Association Conference, Myrtle Beach, SC**

1. 4 hour: Sand Topdressing & Soil Amendments

**Long Island Golf Course Superintendents Association, Winter Education Conference, Bethpage, NY**

1. 2 hour: Golf Course Management; Agronomics of Green and Fairway Renovation

**Met Golf Course Superintendents Association, Winter Seminar, Rye, NY**

1. 1 hour: Does Sand Size Matter for Topdressing?

**Nebraska Turf Conference**

1. ¾ hour: Topdressing Sand: Sorting Out What Matters
2. ¾ hour: Best Management Practices to Control Anthracnose

**SavATree Lawn Care University, Danbury, CT**

1. 1 hour: Understanding Fertility

2018

**Korean Golf Industry Show, Gyeonggi-do, South Korea**

1. ¾ hour: Managing Drainage of Putting Greens for Success during Wet Weather

**Colin Campbell Pty Ltd, New South Wales, Australia**

1. 1 ½ hour: Best Management Practices for Control of Anthracnose

**Carolinas Golf Course Superintendents Association Conference, Myrtle Beach, SC**

1. 4 hour: Sand Topdressing & Soil Amendments

**New England Regional Turfgrass Conference, Providence, RI**

1. 1 hour: Sand Size for Putting Green Topdressing: Sifting Out What Matters

2017

**GCSAA Education Conference, Golf Industry Show, Orlando, FL**

1. 4 hour: Current Best Management Practices for Control of Anthracnose on Golf Courses
2. ¼ hour rapid presentation: Verdure Live: Topdressing versus Anthracnose

**Illinois Turf Conference, Hoffman Estates, IL**

1. ¾ hour: How does Turf Management Affect Water Quality
2. ¾ hour: Best Management Practices for Anthracnose on Annual Bluegrass Putting Green Turf
3. ¾ hour: Management of Natural Turf Sports Fields

**New Hampshire Golf Course Superintendents Association Annual Meeting, Portsmouth, NH**

1. 1 hour: Best Management Practices for Suppression of Anthracnose
2. 1 hour: Competitiveness of Bentgrass Species with Annual Bluegrass

2016

**Golf Course Superintendents Association of America (GCSAA) Webinar**

1. 1 ½ hour webinar: Best Management Practices for the Control of Anthracnose on Annual Bluegrass Putting Greens

**Indiana Green Expo, Indianapolis, IN**

1. 1 hour: How to Pick the Right Bluegrass for Each Lawn
2. 1 hour: Managing Traffic on Athletic Fields
3. 1 hour: Bluegrass Cultivars for Athletic Fields

2015

**GCSAA Education Conference, Golf Industry Show, San Antonio, TX**

1. 4 hour: Managing Traffic Stress
2. 2 hour: Sharpen All Your Skills – The Successful Equipment Manager

**Seed Research of Oregon, Golf Industry Show, San Antonio, TX**

1. 1 hour: Bentgrass Cultivars:Competition with Poa annua
2. 1 hour: Performance of Tall Fescue and Kentucky Bluegrass Under Traffic

**Met Golf Course Superintendents Association & Connecticut Association of Golf Course Superintendents, Fall Educational Seminar, Fairfield, CT**

1. 1 hour: Soil Fertility Relationship to Winter Injury

**New England Grows, Boston, MA**

1. 1 hour: Fertilization Strategies for Pest Tolerance of Landscape Turf

**Awards**

2016 Specialist of the Year, Rutgers Cooperative Extension

**Service**

**Professional**

**International**

2018-present Secretary, International Turfgrass Society

2014-2017 Editor-in-Chief, International Turfgrass Society Research Journal

2009-2013 Secretary, International Turfgrass Society

1993-present Member, International Turfgrass Society

**National**

2014-present USGA Turfgrass and Environmental Research Committee, member

2013-2019 Associate Editor – Crop Forage and Turfgrass Management

**Societies**

1985-present American Society of Agronomy

1988-present Crop Science Society of America

1985-present Soil Science Society of America

**Journal Article Reviewer**

* Agronomy Journal (7)
* Crop, Forage and Turfgrass Management (4)
* International Turfgrass Society Research Journal (12)

**University**

**Rutgers Cooperative Extension**

2015 to present Awards Committee

**Department of Plant Biology**

2015 to present Vice Chair

2015 to present Section Leader

**Center for Turfgrass Science:**

2020, 2018, 2016 Finance Committee

2018, 2016 Rutgers Turfgrass Research Symposium Organizing Committee - member

**State**

**Turfgrass Advisory Board**

1991-present University / Industry Stakeholder group meets twice a year to prioritize turf research and education

**New Jersey Turfgrass Association**

1991-present University liaison

1993-present NJ Green Expo Educational Program Committee. Responsible for developing the educational program for the 3-day NJTA Exposition attended by ~1200.

1993-present Rutgers Turfgrass Research Field Day Committee. Develops the educational program for the annual NJTA sponsored Rutgers Turfgrass Research Field Days attended by 400-500 each year.

**Golf Course Superintendents Association of New Jersey**

1997-present University Liaison

**Sports Field Managers Association of New Jersey**

2005-present Advisor

**New Jersey Landscape Contractors Association** (formerly Bergen County Landscape Contractors Association)

1996-present University Liaison

**Cultivated Sod Association**

2013-present Secretary, University Liaison