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Current position

Professor, University of Tennessee, Dept. of Plant Sciences.

Director, University of Tennessee Weed Diagnostics Center.

Areas of specialization

Turfgrass Weed Science; Herbicide Resistance

Appointments held

- 2013-2019 Associate Professor, University of Tennessee
- 2010-2015 Co-Director, Center for Athletic Field Safety, University of Tennessee
- 2008-2013 Assistant Professor, University of Tennessee
- 2007-2008 Assistant Professor/Extension Specialist, University of Hawaii

Education

- 2007 Ph.D. in Agronomy, The Pennsylvania State University
- 2004 M.S. in Plant, Soil, and Insect Science, The University of Massachusetts Amherst
- 2002 B.S. in Turfgrass Science, The Pennsylvania State University

Recent Refereed Publications

- 2023 Pritchard, B.D., D.E. Carroll, T.Q. Carr, G.K. Breeden, and **J.T. Brosnan**. Hybrid bermuda-grass responses to imazapic for growth regulation. *HortScience*. (*In press*)

- 2023 Vukovic, V., C. Mattox, A. Kowalewski, B. McNally, C. Bigelow, S. Meyers, **J.T. Brosnan**, and A.J. Patton. Ethofumesate resistant annual bluegrass (*Poa annua*) in grass seed production systems. *Weed Technol.* doi:10.1017/wet.2023.68
- 2023 Frisvold, G.B., C. Agme, D. Ervin, J. Allen, S.D. Askew, R.G. Bowling, **J.T. Brosnan**, M.T. Elmore, T.W. Gannon, J.E. Kaminski, L.B. McCarty, J.D. McCurdy, A.J. Patton, J. Taylor, J.B. Unruh, M. Bagavathiannan. Extension event attendance increases adoption of weed management practices by sports field managers. *Weed Technol.* doi:10.1017/wet.2023.66.
- 2023 Rutland, C.A., R. Bowling, E. Russell, N. Hall, J. Patel, S. Askew, C. Gonclaves, M. Bagavathiannan, **J.T. Brosnan**, T.W. Gannon, D. Hathcoat, L.B. McCarty, P. E. McCullough, J.D. McCurdy, A.J. Patton, J.B. Unruh, and J.S. McElroy. Survey of target site resistance alleles conferring resistance in *Poa annua*. *Crop Science*. <http://doi.org/10.1002/csc2.21066>.
- 2023 Kowalewski, A.R., C.M. Mattox, **J.T. Brosnan**, J.E. Kaminski, A.J. Patton, J.D. McCurdy, R.G. Bowling, T.W. Gannon, S.D. Askew, J.S. McElroy, J.B. Unruh, M.T. Elmore, D.E. Carroll, and E.B. De Castro. Using survey results to direct future extension efforts in annual bluegrass management. *Natural Sciences Education*. <https://doi.org/10.1002/nse2.20123>.
- 2023 Pritchard, B.D., J.J. Vargas, M. Mahey, **J.T. Brosnan**, and E.L. Patterson. A bioassay to determine *Poa annua* responses to indaziflam. *Frontiers in Agronomy*. <https://doi.org/10.3389/fagro.2023.1182528>.
- 2023 McCurdy, J.D., R.G. Bowling, E.B. DeCastro, A.J. Patton, A.R. Kowalewski, C.M. Mattox, **J.T. Brosnan**, D.E. Ervin, S.D. Askew, C.G. Goncalves, M.T. Elmore, J.S. McElroy, B.C. McNally, B.D. Pritchard, J.E. Kaminski, and M.V. Bagavathiannan. Developing and implementing an integrated weed management program for herbicide resistant *Poa annua* in turfgrass. *Crop, Forage & Turfgrass Management*. <https://doi.org/10.1002/cft2.20225>
- 2022 Allen, J., D.E. Ervin, G.B. Frisvold, **J.T. Brosnan**, J.D. McCurdy, R.G. Bowling, A.J. Patton, M.T. Elmore, T.W. Gannon, L.B. McCarty, P.E. McCullough, J.E. Kaminski, S. Askew, A.R. Kowalewski, J.B. Unruh, J.S. McElroy, and M. Bagavathiannan. Herbicide-Resistance in Turf Systems: Insights and Options for Managing Complexity. *Sustainability*. <https://doi.org/10.3390/su142013399>.
- 2022 Carr, T.Q., J.C. Sorochan, **J.T. Brosnan**, and B.J. Horvath. Impact of soil temperature on Prizm zoysiagrass establishment from sprigs. *Agronomy*. <https://doi.org/10.3390/agronomy12102329>.
- 2022 Carroll, D.E., B.J. Horvath, M. Prorock, R.N. Trigiano, A. Shekoofa, T.C. Mueller, and **J.T. Brosnan**. *Poa annua*: An annual species? *PLOS One*. <https://doi.org/10.1371/journal.pone.0274404>.
- 2022 **Brosnan, J.T.**, J.B. Peake, and B.M. Schwartz. An examination of golf course turfgrass growing zones. *Crop, Forage, and Turfgrass Management*. <http://dx.doi.org/10.1002/cft2.20160>
- 2022 Brown, A, **J.T. Brosnan**, N. Basinger, W. Porter, and G.M. Henry. Impact of verticutting on the efficacy and soil activity of ALS-inhibiting herbicides for dallisgrass control. *HortScience*. 57:290-296. <https://doi.org/10.21273/HORTSCI16209-21>.

- 2022 Elmore, M.T., K.H. Diehl, R. Di, J. Chen, E.L. Patterson, **J.T. Brosnan**, R.N. Trigiano, D.P. Tuck, S.L. Boggess, and S. McDonald. Identification of two *Eleusine indica* (Goosegrass) biotypes of cool-season turfgrass resistant to dithiopyr. *Pest Manag. Sci.* 78: 499-505. <https://doi.org/10.1002/ps.6654>.
- 2021 Carroll, D.E., C.A. Stephens, C.T. Stripling, J.C. Sorochan, and **J.T. Brosnan**. Women in turf: a qualitative study examining how women have sustained their leadership role in the turfgrass industry. *Journal of Agricultural Education*. <https://doi.org/10.5032/jae.2021.04138>.
- 2021 Taylor, D.R., M. Prorock, B.J. Horvath, and **J.T. Brosnan**. Modeling emergence of *Poa annua* in urban greenspace. *Scientific Reports*. 11. doi: 10.1038/s41598-021-98525-4
- 2021 Richardson, M.D., **J.T. Brosnan**, J. McCalla, and G.K. Breeden. Fraise mowing can improve herbicidal control of bermudagrass. *Agron. J.* 113:3789-3799. <https://doi.org/10.1002/agj2.20411>
- 2021 McCurdy, J.D., Z.D. Small, T. Tseng, **J.T. Brosnan**, and E.H. Reasor. Effects of soil compaction and moisture on path rush (*Juncus tenuis*) growth. *Intl. Turf. Soc. Res J.* <https://doi.org/10.1002/its2.92>
- 2021 Carroll, D.E., **J.T. Brosnan**, J.B. Unruh, C.A. Stephens, C. McKeithen, and P. Boeri. Non-chemical control of annual bluegrass in bermudagrass via fraise mowing: efficacy and barriers to adoption. *Sustainability*. <https://doi.org/10.3390/su13158124>
- 2021 Laforest, M.L., B. Soufiane, E.L. Patterson, J.J. Vargas, S.L. Boggess, L.C. Houston, R.N. Trigiano, and **J.T. Brosnan**. Differential expression of genes associated with non-target site resistance in *Poa annua* with target-site resistance to acetolactate synthase inhibitors. *Pest Manag. Sci.* <https://doi.org/10.1002/ps.6541>
- 2021 Carroll, D.E., **J.T. Brosnan**, J.D. McCurdy, E. DeCastro, A.J. Patton, W. Liu, J.E. Kaminski, K. Tang, P.E. McCullough, and D.E. Westbury. Germinability of *Poa annua* seed during spring in the eastern United States. *Crop, Forage & Turfgrass Mgmt.* <https://doi.org/10.1002/cft2.20117>
- 2021 Carroll, D.E., **J.T. Brosnan**, and G.K. Breeden. Applications of topramezone and Speedzone for postemergence goosegrass (*Eleusine indica*) control in hybrid bermudagrass. *Weed Technol.* doi:10.1017/wet.2021.24
- 2021 Carroll, D.E., **J.T. Brosnan**, E. H. Reasor, J.P. Kerns, C. Stephens, B. J. Horvath, K. H. Dickson, and Tomaso-Peterson, M. Effects of growing degree day based trinexapac-ethyl application on ultradwarf hybrid bermudagrass putting green quality and ball roll. *Int. Turf. Res. J.* <https://doi.org/10.1002/its2.41>.
- 2021 Carroll, D.E., **J.T. Brosnan**, R.N. Trigiano, B.J. Horvath, A. Shekoofa, and T.C. Mueller. Current understanding of the *Poa annua* life cycle. *Crop Sci.* <https://doi.org/10.1002/csc2.20441>
- 2021 Carroll, D.E., **J.T. Brosnan**, and G.K. Breeden. Annual bluegrass control in bermudagrass using dimethenamid and pendimethalin. *Crop, Forage, and Turfgrass Management*. <http://dx.doi.org/10.1002/cft2.20083>

- 2021 Bearss, R., A.J. Patton, **J.T. Brosnan**, and G.K. Breeden. Postemergence smooth crabgrass control is not influenced by trinexapac-ethyl. *Crop, Forage, and Turfgrass Management*. <http://dx.doi.org/10.1002/cft2.20082>
- 2020 Sheekoofa, A.S., **J.T. Brosnan**, J.J. Vargas, D.P. Tuck, and M.T. Elmore. Environmental effects on efficacy of herbicides for postemergence goosegrass (*Eleusine indica*) control. *Scientific Reports*. 10:20579. <https://doi.org/10.1038/s41598-020-77570-5>
- 2020 **Brosnan, J.T.**, A. Chandra, R.E. Gaussoin, A. Kowalewski, B. Leinauer, F.S. Rossi, D.J. Soldat, J.C. Stier, and J.B. Unruh. A justification for continued management of turfgrass during economic contraction. *Agricultural and Environmental Letters*. <https://doi.org/10.1002/ael2.20033>
- 2020 Soldat, D.J., **J.T. Brosnan**, A. Chandra, R.E. Gaussoin, A. Kowalewski, B. Leinauer, F.S. Rossi, J.C. Stier, and J.B. Unruh. Estimating economic minimums of mowing, fertilizing and irrigating turfgrass. *Agricultural and Environmental Letters*. <https://doi.org/10.1002/ael2.20032>.
- 2020 Richardson, M.D., **J.T. Brosnan**, J. McCalla, and G.K. Breeden. Fraise mowing can improve herbicidal control of bermudagrass. *Agron. J.* <https://doi.org/10.1002/agj2.20411>
- 2020 **Brosnan, J.T.**, J.J. Vargas, G.K. Breeden, and J.M. Zobel. Herbicide resistance in annual bluegrass (*Poa annua*) on Tennessee golf courses. *Crop, Forage, and Turfgrass Mgmt.* <https://doi.org/10.1002/cft2.20050>
- 2020 Reasor, E.H. and **Brosnan, J.T.** Trinexapac-ethyl applications and light-weight rolling on ultradwarf bermudagrass (*Cynodon dactylon* (L.) Pers. x *C. transvaalensis* Burtt-Davy) putting greens. *Crop, Forage, and Turfgrass Mgmt.* <https://doi.org/10.1002/cft2.20036>
- 2020 Reasor, E.H., **J.T. Brosnan**, and M.S. Woods. A new method to measure bermudagrass (*Cynodon* spp.) golf course putting green ball roll uniformity. *Journal of Testing and Evaluation*. 49. <https://doi.org/10.1520/JTE20180277>.
- 2020 **Brosnan, J.T.**, M.T. Elmore, and M.V. Bagavathiannan. Herbicide resistant weeds in turfgrass: current status and emerging threats. *Weed Technol.* 34:424-430. <https://doi.org/10.1017/wet.2020.29>
- 2020 **Brosnan, J.T.**, M.W. Barrett, and P.B. Bhowmik. Herbicide resistance in turfgrass: a chance to change the future? *Weed Technol.* 34:431-436. <https://doi.org/10.1017/wet.2020.28>
- 2020 **Brosnan, J.T.**, J.J. Vargas, B. Spesard, D. Netzband, J.M. Zobel, J. Chen, and E.L. Patterson. Annual bluegrass (*Poa annua*) resistance to indaziflam applied early-postemergence. *Pest Manag. Sci.* 76:2049-2057. <https://doi.org/10.1002/ps.5740>
- 2020 **Brosnan, J.T.**, G.K. Breeden, J.M. Zobel, A.J. Patton, and Q.D. Law. Non-chemical annual bluegrass (*Poa annua*) management via fraise mowing. *Weed Technol.* 34:482-488. <https://doi.org/10.1017/wet.2019.136>

A total of **118** other peer-reviewed publications from 2005-2019.

A total of **142** popular press and extension publications from 2005-2023.

Abstracts & Proceedings

Over **210** published abstracts and proceedings since 2004.

Grants

- 2023 Bowling, R., Gannon, T.W., **Brosnan, J.T.**, McElroy, J.S., Patton, A.J., Zou, L., Menard, R.J., Albus, K.H., Askew, S.D., Bagavathiannan, M.V., Brunharo, C.A.C.G., Elmore, M.T., Henry, G.M., Kaminski, J.E., Kowalewski, A.R., Lavelle, M., Mattox, C.M., McCurdy, J.D., Patel, J.D., Petelewicz, P., Schmid, C.J., Unruh, J.B., Wright Smith, H. Environmental Management and Ecological Research for Greenspace Enhancement (EMERGE): A Turfgrass Weed Science Project. USDA-NIFA Specialty Crops Research Initiative. \$9,866,739. *Pre-proposal submitted Dec 8, 2023.*
- 2023 Prorock, M., J.C. Ganter, T. Chappell, J. LaForest, L. Isley, R. Mason, W. Huffman, **J.T. Brosnan**, R.B. Bowling, R.J. Cordes, S. David, B. Saavedra, A. John. C. Boyer, J. Olich, C. Stapleton, B. Bains, N. Helmy, T. Rump, C. Abernethy, and K. Gidenko. 2023. NSF Convergence Accelerator Track J: Food, Land, Water Environmental Open-Source Risk Intelligence Synthesis Model (FLOWER-ISM). National Science Foundation. Two Years: 2024-2025. \$4,994,336. *Submitted August 28, 2023.*
- 2023 Prorock, M., R. Mason, B. Saavedra, R. Fish, B. Slagle, S. David, **J.T. Brosnan**, and R. J. Cordes. NSF Convergence Accelerator Track J: Food, Land, Water Environmental Open-Source Risk Intelligence Synthesis Model (FLOWER-ISM). National Science Foundation. One Year: 2023. \$750,000.
- 2022 Seagars, C.A., A. Chandra, M.D. Richardson, J.C. Sorochan, and **J.T. Brosnan**. Developing Management Tools for New Greens-Type Zoysiagrasses. United States Golf Association. Two Years: 2023-2024. \$42,000.
- 2020 Richardson, M.D., **J.T. Brosnan**, and A.J. Patton. Shade and water quality effects on efficacy of plant growth regulators. United States Golf Association. Two Years: 2021-2022. \$60,000.
- 2018 Bagavathiannan, M.V., R. Grubbs, J.D. McCurdy, **J.T. Brosnan**, J.S. McElroy, L.B. McCarty, P.E. McCullough, T.W. Gannon, J.B. Unruh, A.J. Patton. S.D. Askew, M.T. Elmore, J.E. Kaminski, A. Kowaleski, D. Ervin, and G. Frisvold. Research and extension to address herbicide resistance epidemic in annual bluegrass in managed turf systems. USDA-SCRI. Four Years: 2018-2022. \$5,700,000.

Awards & Honors

- 2021 Inductee, Gamma Sigma Delta Honors Society
- 2020 Outstanding Paper Award, Crop, Forage & Turfgrass Management
- 2017 Dr. William H. Daniel Award, Sports Turf Managers Association of America
- 2016 Outstanding Educator Award, Northeastern Weed Sci. Soc.
- 2016 Young Crop Scientist Award, Crop Science Society of America.
- 2014 Outstanding Young Weed Scientist Award, Southern Weed Sci. Soc.
- 2014 T.J. Whatley Distinguished Young Scientist Award, UT Institute of Agriculture

2013 Outstanding Researcher Award. Northeastern Weed Sci. Soc.
2012 University of Tennessee QUEST Scholar of the Week
2011 Tennessee Turfgrass Professional of the Year

Outreach

Over **637** presentations made at seminars, workshops, and technical meetings at the International, National, State, Multi-state, and Departmental Levels.

Director of the UT Weed Diagnostics Center created to provide stakeholders from across the United States an array of diagnostic tests specific to problematic weeds including weed identification, herbicide resistance screening, and bermudagrass characterization.

Manage UT Extension websites, turfgrassweeds.org and weeddiagnostics.org
Developed a new mobile resource, Mobile Weed Manual, to assist with herbicide selection in turfgrass in ornamentals. The resource is available mobileweedmanual.com and via the [Apple App Store](#) and the [Google Play Store](#)

Coordinate UT Turfgrass Crash Course, [#TNTurfTuesday](#) digital learning series, and the [Tennessee Turfgrass Association](#) Conference and Trade Show.