

# Larry J. Stowell

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## Professional Experience

### **PACE Turf, LLC: Principal and founder**

**1988 - present**

PACE Turf is an internationally recognized leader in research, education, information, extension and agronomic services in support of the turfgrass management community.

- Conducted research projects, with revenues of over one million dollars, producing key advances in integrated pest management, discovery and characterization of new turf diseases, and management of water quality and soil nutrition.
- Created web-based multimedia information service delivering turf agronomic advice to more than 350 paid subscribers using weekly email updates, pest and plant forecasting models and real-time site-specific weather data.
- Developed and maintained a free public service website providing turf management guidelines and an online venue, "Super Journal", for turf managers to publish and share their research results.
- Reduced unnecessary pesticide and fertilizer inputs through development and introduction of cultural practices for quick monitoring and remediation of soil conditions including: salinity, moisture, nitrogen levels and carbon dioxide levels.
- Developed guidelines for soil and water management, recycled water use and environmental run-off; guidelines are based on a soil and water analysis database representing more than 15,000 samples collected over 20 years.
- Sponsored, organized and led annual education and research conferences attracting hundreds of golf course superintendents, representatives of major agrichemical companies and distributors.
- Recognized for research and extension contributions by the California Environmental Protection Agency, regional chapters of the Golf Course Superintendents Association of America and the Turfgrass and Ornamental Communicators Association.

### **Mycogen Corporation: Director, Mycoherbicide Group**

**1984 - 1988**

Managed internal laboratory, greenhouse, field and commercial development efforts, as well as external university cooperator research programs to identify commercial candidates for microbially-based weed control products.

- Obtained two patents on mycoherbicide research innovations.
- Designed and constructed precision application equipment to insure uniform application of test materials to crop plants.
- Developed unique submerged and solid-state manufacturing process for filamentous fungal mycoherbicides.
- Managed greenhouse operation and staff.

### **University of California, Davis: Post doctoral researcher**

**1982 - 1984**

- Collaborated with plant breeders to develop disease resistance evaluation programs for common beans, large and small lima beans, chickpea and cowpea.
- Developed computer programs to determine the distribution of soil-borne pathogens, diseased plants in the field, and crop loss assessment.

- Evaluated foliar and seed-treatment fungicides for control of diseases of dry beans in California.
- Obtained funding from the California Dry Bean Advisory Board to conduct research.

## **Education**

University of Arizona, Tucson, AZ Ph.D., Plant Pathology	1982
University of Arizona, Tucson, AZ B.S., Agriculture	1977

## **Awards**

- 2009 Environmental Communicator of the Year Award, Turf and Ornamental Communicators Association
- 2002 Honorary member, Southern California and San Diego Golf Course Superintendents Associations (2002 – present)
- 1999 Distinguished Service Award, Southern California Golf Course Superintendents Association
- 1994 IPM Innovator Award, California Environmental Protection Agency

## **Professional Activities**

- 2011 Ad-Hoc Committee on Innovation and Entrepreneurship, American Phytopathological Society
- 2006 Associate editor, *Applied Turfgrass Sciences* (2006 – present)
- 2001 Chair, Turfgrass Committee of the American Phytopathological Society (2001-2002)
- 1995 Chair, American Registry of Certified Professionals in Agronomy Crops and Soils Executive Committee (ARCPACS is an organization serving 8,500 certified professional members in agriculture and related fields)
- 1994 National Plant Pathology Board of the American Phytopathological Society
- 1993 Chair, ARCPACS Long Range Planning Committee
- 1992 Elected to Board of Directors, National Alliance of Independent Crop Consultants
- 1991 Chair, ARCPACS Plant Pathology Board
- 1991 American Phytopathological Society Strategic Planning Committee
- 1991 American Phytopathological Society Journal Review Committee
- 1991 Elected to Board of Directors, Association of Applied Insect Ecologists
- 1991 Treasurer, Association of Applied Insect Ecologists, Sonoran Desert Branch
- 1990 American Phytopathological Society Public Responsibilities Committee
- 1989 American Phytopathological Society Biological Control Committee (Vice Chair 1991-1992, Chair 1992-1993)
- 1989 American Phytopathological Society Private Practice Committee (Vice Chair 1989-1990, Chair 1990-1991)
- 1984 American Phytopathological Society Epidemiology Committee

## Recent Research Grants

- 2008 Management and biology of brown ring patch on annual bluegrass greens (Golf Course Superintendents Association of America, \$14,000)
- 2006 Producing an integrated pest management (IPM) template to assist golf course superintendents in developing written IPM plans for golf courses. (Golf Course Superintendents Association of America, \$13,000)

## Professional Society Memberships

American Phytopathological Society  
Agronomy Society of America  
Association of Applied IPM Ecologists  
California Agricultural Production Consultants Association  
Crop Science Society of America  
Golf Course Superintendent's Association of America  
Mycological Society of America  
Sigma Xi  
Soil Science Society of America  
Weed Science Society of America

## Licenses

California Pest Control Advisor License No. 1037  
Qualified Applicator Certificate No. 41527  
California Community College Instructor Credential–Biological Sciences No. 341839

## Patents

Cardina, J., R.H. Littrell, and L.J. Stowell. 1987. Bioherbicide for Florida beggarweed. U.S. Patent #4,643,756.

Caulder, J.D., and L.J. Stowell. 1988. Synergistic herbicidal compositions comprising *Colletotrichum truncatum* and chemical herbicides. U.S. Patent #4,775,405.

## Book Chapters

Gelernter, W. and, L. Stowell, 2004. Resistance issues in golf course turf. p. 38-42. *In* Management of Pesticide Resistance: Strategies using crop management, biotechnology and pesticides. Special Publication No. 24. Council for Agricultural Science and Technology Ames, Iowa.

Stowell, L.J. 1993. Factors influencing acceptance and development of biopesticides. p. 249-260. *In* L. Kim (ed.) Advanced Engineered Pesticides. Marcel Dekker, Inc., New York.

Stowell, L.J. 1991. Submerged fermentation of biological herbicides. p. 225-261 *In* D.O. TeBeest (ed.) Microbial Weed Control. Chapman & Hall, New York.

Stowell, L.J., K. Nette, B. Heath, and R. Shutter 1989. Fermentation alternatives for commercial production of a mycoherbicide. p. 217-225 *In* A. Demain et. al. (ed.) Topics in Industrial Microbiology. Elsevier, Amsterdam.

## Refereed Publications

- Stowell, L. and M. Woods. 2013. Minimum levels for sustainable nutrition. Appl. Turfgrass Sci. doi:10.2134/ATS-2013-0008BC
- Linde, D.T., L.J. Stowell, W. Gelernter, and K. McAuliffe. 2011. Monitoring and managing putting green firmness on golf courses. Online. Applied Turfgrass Science. doi:10.1094/ATS-2011--01260-0-RS.
- Hyder, N., F.P. Wong, A. Koski, N. Tisserat, and L. Stowell. 2010. First report of a rapid blight caused by *Labyrinthula terrestris* on *Poa annua* in Colorado. Plant Dis. 94(7):919.
- Wong, F.P., C.M. Chen, L.J. Stowell, and W.B. Carpenter. 2009. Evaluation of DMI and biological fungicides for the control of brown ring patch in Southern California. Plant Dis. Management Reports. 3:T009[1]-T009[2].
- Fidanza, M.A., D.L. Sanford, L.J. Stowell, W. Gelernter, P.J. Landschoot, N. Bosold, and J. Welshans. 2006. Survey of Irrigation Water for Golf Courses in Southeastern Pennsylvania. Appl. Turf. Sci. February, 2006.
- Stowell, L.J., S.B. Martin, M. Olsen, D. Bigelow, M. Kohout, P.D. Peterson, J. Camberato, and W.D. Gelernter. 2005. Rapid blight, a new plant disease. APSnet feature story. July, 2005.
- Wong, F.P., W. Gelernter, and L. Stowell. 2005. First report of *Pyricularia grisea* causing gray leaf spot on kikuyugrass (*Pennisetum clandestinum*) in the United States. Plant Dis., 89(4):433.
- Olsen, M.W., D.M. Bigelow, R.L. Gilbertson, L.J. Stowell, and W.D. Gelernter. 2003. First report of a *Labyrinthula* sp. causing rapid blight disease of rough bluegrass and perennial ryegrass. Plant Dis. 87 (10): 1267.
- Uddin, W., G. Viji, , and L. J. Stowell. 2003. First report of gray leaf spot on perennial ryegrass turf in California. Plant Dis. 86:75.
- Stowell, L.J., and W.D. Gelernter. 2001. Diagnosis of turfgrass diseases. Annual Review of Phytopathology 39:135-55.
- Nelson, M.R., R. Felix-Gastelum, T. Orum, L.J. Stowell, D.E. Myers. 1994. Geographic information systems and geostatistics in the design and validation of regional plant virus management programs. Phytopathology 84:898-905.
- Stowell, L. and M. McClure. 1993. A survey of plant parasitic nematodes in Southern California golf course putting green soils. Phytopathology 83(12):1338-1339.
- Misaghi, I.J., and L.J., Stowell. 1991. Portable device for preparation and delivery of gas mixtures. Appl. Environ. Micro. 57:843-846.
- Delp, B.R., L.J. Stowell, and J. J. Marois. 1986, Field runner: A disease incidence, severity and spatial pattern assessment system. Plant Dis. 70:954-957.
- Delp, B.R., L.J. Stowell, and J.J. Marois. 1986, Evaluation of field sampling techniques for estimation of disease incidence. Phytopathology 76:1299-1305.
- Alderman, S.C., and L.J. Stowell. 1986. Strand ontogeny in *Phymatotrichum omnivorum*. Trans. Br. Mycol. Soc. 86:207-211.
- Stanghellini, M.E., L.J. Stowell, and M.L. Bates. 1984. Control of root rot of spinach caused by *Pythium aphanidermatum* in recirculating hydroponic systems by ultraviolet irradiation. Plant Dis. 68:1075-1076.
- Stanghellini, M.E., L.J. Stowell, W.C. Kronland, and P. von Bretzel. 1983. Distribution of *Pythium aphanidermatum* in rhizosphere soil and factors affecting expression of absolute inoculum potential. Phytopathology 73:1463-1464.
- Misaghi, I.J., L.J. Stowell, R.G. Grogan, and L.C. Spearman. 1982. Fungistatic activity of water-soluble fluorescent pigments of fluorescent pseudomonads. Phytopathology 72:33-36

- Stowell, L.J., and M.A. McClure. 1979. Automated dehydration of small specimens. *J. Nematology* 11:206-210.
- McClure, M.A., and L.J. Stowell. 1978. A simple method of processing nematodes for electron microscopy. *J. Nematology* 10:376-377.

### Refereed Abstracts

- Stowell, L., Woods, M. and W. Gelernter. 2014. Only what the turf needs: updating the Minimum Levels for Sustainable Nutrition Guidelines. International Annual Meeting, ASA-CSSA-SSSA. <https://scisoc.confex.com/scisoc/2014am/webprogram/Paper86244.html>
- Mock, T.J., Baird, J.H. and L.J. Stowell. 2013. Effects of combined kikuyugrass management practices on turfgrass quality. International Annual Meeting, ASA-CSSA-SSSA. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper81237.html>.
- Stowell, L.J. and W.D. Gelernter. 2013. Unmanned aerial vehicles (drones) for remote sensing in precision turfgrass management. International Meeting, ASA-CSSA-SSSA. <https://scisoc.confex.com/scisoc/2013am/webprogram/Paper80851.html>
- Stowell, L. and M. Woods. 2012. Development of Minimum Levels for Sustainable Nutrition guidelines using data mining and distribution fitting software. International Annual Meeting, ASA-CSSA-SSSA. <https://scisoc.confex.com/crops/2012am/webprogram/Paper75298.html>
- Chen, C.M., L. Stowell, and F.P. Wong. 2010. Assessing the accuracy of brown ring patch severity using digital image analysis. 2010 International Annual Meeting, ASA-CSSA-SSSA.
- Wong, F.P., C.M. Chen, K.A. de la Cerda, G. W. Douhan, L. Stowell. 2010. The biology of brown ring patch disease on cool season turfgrasses. *Phytopathology*. 100(65):S152.
- Chen, C.M., L. Stowell, and F.P. Wong, 2009. The effects of nitrogen and trinexapac-ethyl on the severity of brown ring patch on annual bluegrass golf course putting greens. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L., W. Gelernter, and J. Beardsley. 2008. Ten years of recycled water: what we have learned. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L., and W. Gelernter. 2008. Evaluation of a Geonics EM38 and NTech GreenSeeker sensor array for use in precision turfgrass management. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L., W. Gelernter, F.P. Wong, C.M. Chen. 2008. Using virtual irrigation to forecast disease. American Phytopathological Society of America meeting abstract.
- Stowell, L., and W. Gelernter. 2007 Virtual Irrigation audits in real-time. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L., W. Gelernter, and L. Yoder. 2006. Soil compaction evaluation with the Spectrum Technologies SC-900 before and after a Rolling Stones concert at Petco Park. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L., and W. Gelernter. 2005. Temporal variation in golf course soil chemistry: case studies from the arid Southwest. International Annual Meeting, ASA-CSSA-SSSA.
- Fidanza, M.A., Stowell, L., Gelernter, W. and S.D. Davis. 2004. Irrigation water quality survey for golf courses in southeastern Pennsylvania. International Annual Meeting, ASA-CSSA-SSSA.
- Gelernter, W.D. and Stowell, L.J. 2004. Using soil content of plant-available nitrogen as a tool for diagnosing turfgrass damage. International Annual Meeting, ASA-CSSA-SSSA.
- Harivandi, A., Stowell, L.J. and Gelernter, W.D. 2004. Soil acidity and aluminum availability in golf course soils. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J. and Gelernter, W.D. 2004. Chloride content of golf course turfgrass soils: survey results. International Annual Meeting, ASA-CSSA-SSSA.

- Gelernter, W.D., Stowell, L.J., Darrock, B., Ashworth, M. and Guzman, J. 2003. Effect of interactions among turf variety, water quality, overseeding practices and other stressors on turfgrass performance. International Annual Meeting, ASA-CSSA-SSSA.
- Olsen, M.W., Bigelow, D.M., Gilbertson, R.L., Stowell, L.J. and Gelernter, W.D. 2003. Update on rapid blight, a new disease of turfgrass caused by *Labyrinthula*. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J., Gelernter, W.D. and Thurow, M. 2003. Evaluation of Spectrum Technology's CM1000 Field Scout Chlorophyll Meter for quantification of turfgrass quality. International Annual Meeting, ASA-CSSA-SSSA.
- Wong, F.P., W. Gelernter, L. Stowell, and N. Tisserat. 2003. First report of *Gaeumannomyces graminis* var. *graminis* on kikuyugrass in the United States. *Plant Dis.* 87(5):600.
- Stowell, L., W. Gelernter, D. Dinelli, D. Garling, D. Potts, G. Dalton and S. Chong. 2002. The influence of soil carbon dioxide on turfgrass performance: field observations from California and Illinois golf course greens. International Annual Meeting, ASA-CSSA-SSSA.
- Martin, S.B., L.J. Stowell, W.D. Gelernter, S.C. Alderman. 2002. Rapid blight: a new disease of cool season turfgrasses. International Annual Meeting, ASA-CSSA-SSSA.
- Gelernter, W., L. Stowell, B. Darrock, J. Guzman, and B. Sandland. 2002. Using a gradient irrigation system to evaluate the interactions among water quality, turf variety and overseeding practices on turfgrass performance. International Annual Meeting, ASA-CSSA-SSSA.
- Wong, F.P., L. Stowell, W. Gelernter. 2002. The role of *Gaeumannomyces* in decline of kikuyugrass in California. International Annual Meeting, ASA-CSSA-SSSA.
- Colbaugh, P., L.J. Stowell, S.D. Davis, M.A. Fidanza, M.A. 2001. A regional turfgrass disease ID program through an industry/university/private consultant partnership. *Agronomy Abstracts*.
- Stowell, L.J. 2001. Academia and Industry: Private consultant perspective. *Agronomy Abstracts*.
- Gelernter, W., Stowell, L., Darrock, B. Guzman, J. and Sandland, B. 2001. Evaluation of warm and cool season turf variety performance using salinity gradient irrigation. International Annual Meeting, ASA-CSSA-SSSA.
- Carrow, R.N., L.J. Stowell, S.D. Davis, M.A. Fidanza, J.B. Unruh, and W. Wells. 2001. Developing regional soil and water baseline information for golf course turf. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J. 2000. Diagnosing diseases caused by *Gaeumannomyces* species. *Phytopathology* 90:S97.
- Gelernter, W.D. and L.J. Stowell. 2000. Annual bluegrass seedhead management using ethephon and ethephon plus trinexapac-ethyl on golf course greens and fairways. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J. and Gelernter, W.D. 2000. Kikuyugrass clipping reduction and quality improvement using trinexapac ethyl. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J. 1999. The influence of water and soil quality factors on turfgrass health management systems. Annual Meeting, American Phytopathological Society.
- Stowell, L.J. and W. Gelernter. 1998. A low cost method for monitoring soil carbon dioxide concentrations on golf course greens. International Annual Meeting, ASA-CSSA-SSSA.
- Gelernter, W.D. and L.J. Stowell. 1996. Management of scarab grubs on western golf course turf: Results of a three year study. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J. 1995. Management of temporal variations in stress inducing factors at Southern California golf courses. *Phytopathology*. 85:1151.
- Stowell, L.J. 1994. Managing soil salinity to prevent turfgrass losses at Southern California Golf Courses. International Annual Meeting, ASA-CSSA-SSSA.
- Stowell, L.J., and S. Davis. 1993. Direct measurement of electrical conductivity (EC) in golf course high-sand content soils. *Phytopathology* 83:693.

- Stowell, L. J. and M. A. McClure. 1993. A survey of nematodes on Southern California Golf courses. 32nd Annual Meeting of the Society of Nematology.
- Nelson, M.R., and L.J. Stowell. 1989. Dispersion characteristics of a whitefly-transmitted geminivirus in the field. *Phytopathology* 79:1219.
- Stowell, L. J., J. Bannon, and J. Glatzhofer. 1987. The influence of pH on the efficacy of *Alternaria cassiae* mycoherbicide. *Proc. Weed Science Society of America*. 27:48.
- Stowell, L.J., B.R. Delp, and R.G. Grogan. 1984. Disease distribution and crop loss assessment using a field-portable microcomputer. *Phytopathology* 74:871.
- Delp, B.R., L.J. Stowell, and R.G. Grogan. 1984. Distribution of lettuce anthracnose in the field. *Phytopathology* 74:871.
- Dillard, H.R., L.J. Stowell, and R.G. Grogan. 1983. Relationship between sclerotial populations of *Sclerotinia minor* and the incidence of lettuce drop. *Phytopathology* 73:958.
- Stanghellini, M.E., L.J. Stowell, and M.L. Bates. 1983. Use of ultraviolet radiation for control of *Pythium aphanidermatum* in recirculating hydroponic systems. *Phytopathology* 73:962.
- Stowell, L. J., and M.E. Stanghellini. 1983. The correlation between quantitative characters and the virulence of *Erwinia carotovora*. *Phytopathology* 73:962.
- Delp, B.R., L.J. Stowell, and R.G. Grogan. 1985. Comparison of diagonal, W and stratified random sampling patterns using simulation. *Phytopathology* 75:1319.
- Stowell L.J., M.E. Stanghellini, and I.J. Misaghi. 1981. The bacteriostatic activity of the fluorescent pigment of *Pseudomonas fluorescens*. *Phytopathology* 71:906.
- Alderman, S.C., L.J. Stowell, and R.B. Hine. 1981. Strand ontogeny in *Phymatotrichum omnivorum*. *Phytopathology* 71:199.
- Misaghi, I.J., R.G. Grogan, L.C. Spearman, and L.J. Stowell. 1981. Antifungal activity of a fluorescent pigment produced by fluorescent pseudomonads. *Phytopathology* 71:199.
- Stowell, L.J., and M.R. Nelson. 1978. SAMSIM: a program for computer aided learning of plant disease epidemiology. *Phytopathology News* 12:203.

### Trade Publications

- Woods, M., Stowell, L. and W. Gelernter. 2014. Just what the grass requires: Using minimum levels for sustainable nutrition. *Golf Course Management*, January, 2014.
- Gelernter, W., Stowell, L. And M. Woods. 2013. Documenting your progress toward sustainability. *Golf Course Management*, December 2013.
- Komor, A., D. Zahrte, L. Stowell, R. Goss. 2011. Desalination of Golf Irrigation Water - Water Reduction and Turf Improvement Benefit Versus Cost of Installation and Operation. 26th Annual WaterReuse Symposium 2011 (ISBN:978-1-61839-758-4) pp. 207-218
- Gelernter, W., L. Stowell, R. Brandenburg, D. Kopec, D., K. Umeda, and F. Yelverton. 2010. Bringing IPM to the next level. *Golf Course Management*. 78(7): 72-78.
- McDonald, S., D. Settle, Stowell, C.M. Chen, F.P. Wong. 2009. Chemical control of brown ring patch. *Golf Course Management*. 77(8): 74 – 80.
- Wong, F.P., C.M. Chen, and L. Stowell. 2009. Effects of nitrogen and Primo Maxx on brown ring patch development. *Golf Course Management*. 77(5): 117-121.
- Gelernter, W., and L. Stowell. 2009. Biological pest control: a realistic outlook. *Golf Course Management*. 77(4): 110-115.
- Gelernter, W., and L. Stowell. 2009. Preventing herbicide mix-ups. *Golf Course Industry*. 21(3):72-74.
- Gelernter, W., and L.J. Stowell. 2008. Shade versus turfgrass: A no-win situation? *Golf Course Industry* 20(2):66-78.
- Stowell, L.J., and W. Gelernter. 2008. Consider agronomics when negotiating reclaimed water contracts. *Golf Course Industry*. 20(9): 46-54.
- Stowell, L.J. 2007. Greens management. *Golf Course Industry*. September, 2007. 93-96.

- Stowell, L. 2007. Shed light on rapid blight. *Golf Course Industry*. 19(3):86-91.
- Gelernter, W., and L. Stowell. 2006. Predicting turf performance. *Grounds Maintenance*. August, 2006.
- Gelernter, W., and L. Stowell. 2006. Keeping an eye on nitrogen. *Grounds Maintenance*. April, 2006. pp. 12 – 18.
- Tredway, L.P., L.J. Stowell, and W. Gelernter. 2006. Yellow spot and the potential role of cyanobacteria as turf pathogens. *Golf Course Management*, November, 2006. pp. 83-86.
- Stowell, L., and W. Gelernter. 2006. Sensing the future. *Golf Course Management*, March, 2006. pp. 107-110.
- Gelernter, W.D., and L.J. Stowell. 2005. Improved overseeding programs: the role of weather. *Golf Course Management*. March, 2005. 108 – 113.
- Gelernter, W.D., and L.J. Stowell. 2005. Improved overseeding programs: managing the spring transition. *Golf Course Management*. March, 2005. 114-118.
- Gelernter, W., and L.J. Stowell. 2004. Improving performance of cool-season roughs. *Golf Course Management*. August, 2004. 101-104.
- Carrow, R.N., L. Stowell, W. Gelernter, S. Davis, R.R. Duncan, and J. Skorulski. 2004. Clarifying soil testing: III SLAN sufficiency ranges and recommendations. January, 2004 *Golf Course Management*. pp. 194-198.
- Carrow, R.N., L. Stowell, W. Gelernter, S. Davis, R.R. Duncan, and J. Skorulski. 2004. Clarifying soil testing: II Choosing SLAN extractants for macronutrients. January, 2004 *Golf Course Management*. pp. 189 – 193.
- Carrow, R.N., L. Stowell, W. Gelernter, S. Davis, R.R. Duncan, and J. Skorulski. 2003. Clarifying soil testing: I. Saturated paste and dilute extracts. *Golf Course Management*. September, 2003. 81-85.
- Gelernter, W., and L. Stowell. 2003. Improving the performance of warm-season fairways. *California Fairways*. September/October 2003. 14-16.
- Olsen, M.W., D.M. Biegelow, R.L. Gilbertson, L.J. Stowell, and W. Gelernter. 2003. Rapid blight pathogen identified. *Golf Course Management*. April 2003:119.
- Gelernter, W., and L. Stowell. 2003. Sulfonylureas control weeds on bermudagrass. *Turfgrass Trends*, May 1, 2003.
- Martin, B., L. Stowell, and W. Gelernter. 2002. Rough bluegrass, annual bluegrass and perennial ryegrass hit by new disease. *Golf Course Management*. 70(4): 61-65.
- Gelernter, W. and L. Stowell. 2001. Advances in *Poa* seedhead management. *Golf Course Management*. 69:49-53.
- Gelernter, W. and L. Stowell. 2001. Learning to love kikuyugrass. *Golf Course Management*. 69:55-59.
- Gelernter, W., and L. Stowell. 2000. Genetically modified plants: Problem or solution? *Golf Course Management*. 68(9): 64-67.
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- Stowell, L.J., and W.D. Gelernter. 1998. How to test products and practices - Part 2, experiment design. *California Fairways* 7:22-31.
- Stowell, L.J., and W.D. Gelernter. 1997. How to test products and practices - Part 1, getting started. *California Fairways* 6:20-22.
- Stowell, L.J. 1997. Improving turfgrass health with a low-salt diet. *Sports Turf* 13:14-17.
- Stowell, L.J. 1996. Water quality - from ECs to ETs. *California Fairways*. 5(5):12-16.
- Stowell, L.J. 1996. Chemical control for turf diseases. *California Fairways*. 5(2):12-16.
- Stowell, L.J. 1995. How does your irrigation water measure up? *Golf Course Management*, 63:58-62.



## Video Podcasts

Free public service videos (available on <http://www.youtube.com/user/paceturf>)

- Aeration: a breath of fresh air for greens
- Bacterial wilt
- Fairy ring diagnosis
- Fairy ring symptoms
- Frost delays on golf courses: the cold, hard truth
- Gray leaf spot diagnosis
- iStimp fails the test
- The iStimp: For better or worse
- Pythium diagnosis
- Rapid blight
- What makes a grub a grub?
- Why does turf die in the summer?

PACE Turf videos (available on <http://www.paceturf.org> to PACE Turf members)

Chemistry:

- Avogadro, moles and valences
- pH: An introduction
- Measuring pH
- How much phosphorus is enough (and how much is too much)?

Cultural practices:

- Against the Grain: Grain on G6 bentgrass greens
- Monitoring for soil salinity
- Kikuyugrass aeration and topdressing
- Localized dry spot and root zone depth
- Failure of poa in greens surrounds
- Fall aeration triggers a disease outbreak
- Organic matters
- Organic fertilizer surprise
- GPS, GIS and sand pits
- Sand quality control
- Aeration: avoiding the polka dot effect

Diseases:

- Cyanobacteria, aka aglae, on Tyee bentgrass
- Algae, blue green bacteria, cyanobacteria and yellow spot
- Early spring anthracnose
- Diagnosing bacterial wilt
- End of summer blues with bacterial wilt, etc. etc.
- Brown ring patch diagnosis
- Damping off disease
- Dollar spot diagnosis
- Dollar spot mania
- Fairy ring -- again (summer, 2010)
- Identifying fairy ring symptoms
- Fall fairy ring

- Gray leaf spot diagnosis
- Leptosphaerulina leaf blight
- Mad tiller?
- Free living nematodes
- Root knot nematode
- Putting out a biorational nematicide trial
- Diagnosing Pythium blight
- Autumn surprise (Pythium on bermudagrass)
- Diagnosing rapid blight
- Rapid blight invades Colorado
- Rapid blight can look like Microdochium patch (pink snow mold)
- Rust and nitrate
- Spring dead spot diagnosis
- Summer patch diagnosis
- Mad tiller disease, rabbits and Southern blight
- Puerto Rico turf diseases
- Double Whammy! (fairy ring and rapid blight)
- Using threat temperatures to prevent disease outbreaks

#### Golfer education

- Golfer education on heat and turf damage
- Golfer education on frost delays
- Golfer education on aeration
- Golf-it's not just a game

#### Insects

- Billbugs: Identifying billbug damage
- Billbugs: Billbugs in sod, the gift that keeps giving
- Frit flies: Hiding in plain sight: frit flies on turf
- Mealybugs
- White grubs: What makes a grub a grub?

#### Irrigation

- Unwelcome bryozoan guests

#### Soils

- Gypsum vs. calcium sulfate anhydrite
- Quick test for gypsum products
- Bermudagrass fairways puzzler answer: localized dry spot
- Compaction relief with deep tine aeration

#### Tools

- Knockout trials (doing your own research)
- Calibrating your EC meter
- Measuring soil moisture with Turf Guard vs. Spectrum TDR-300
- The iStimp arrives: for better or worse
- iStimp Field Evaluation

#### Weather

- Heat and drought recovery
- Purple bentgrass and cool temperatures
- Using threat temperatures to prevent disease outbreaks

## Weeds

- Herbicide use precaution
- A new approach to stamping out poa on greens
- Poa and ryegrass removal from bermudagrass
- Iron, phosphorus and poa
- Influence of heat on Proxy performance
- Extreme measures: poa control at Big Canyon Country Club
- Weather changes trigger poa color variation

## Recent Invited Presentations and Webcasts

- Gizmos and gadgets. San Diego Golf Course Superintendent's Association Assistant Superintendent Bootcamp, Rancho Santa Fe, CA. March 2011.
- Precision management for improved soil management, turf quality and IPM, Canadian Golf Course Superintendent's Association, Vancouver, BC, March, 2011.
- Nematode damage on turf: an increasing threat and how to manage it, Canadian Golf Course Superintendent's Association, Vancouver, BC, March, 2011.
- Sensor technology, Golf Course Superintendent's Association of America, Orlando, FL, February, 2011.
- Tools for managing economic challenges: The IPM template and precision turf management. Golf Course Superintendent's Association of America, Orlando, FL, February, 2011.
- Nematode damage on turf: an increasing threat and how to manage it. Target Specialty Products, Cathedral City, CA, April, 2010.
- Transition: Weather, cultural practices, transition accelerators and how they interact. Target Specialty Products, Cathedral City, CA, April, 2010.
- Water management: Recycled, local well, canal analysis and management methods. Target Specialty Products, Cathedral City, CA, April, 2010.
- Making the most of your IPM plan. Golf Course Superintendent's Association of America. November 2010. Webcast
- Managing soil moisture for improved turf quality, firmness and pest control. TurfNet. August 2010. Webcast
- Tools for Developing Golf Course IPM Programs, Bayer Environmental Science. Multi-city seminar series, OK. March 2009.
- Managing moss and algae. Southern California Golf Course Superintendent's Association. Escondido, Ca. March, 2009.
- Precision tools for the 21st century. Northern California Golf Association. Asilomar, CA. September, 2009.
- What's up with brown ring patch? Minnesota Green Expo. St. Paul, MN. January, 2008.
- Moss and algae: is there a link? Minnesota Green Expo. St. Paul, MN. January, 2008.
- The great sprayer nozzle debate of 2006. California Golf Course Superintendent's Association. Temecula, CA. May 2006.
- Cultural practices and environmental conditions that influence disease activity and disease management. Pensacola, FL, January, 2005.