

Time	Place	Presentation (paper) title	Corresponding author	Confirmed speaker / presenter
Monday 11 July				
07:00	Marmor Hall	Registrations desk opens. Poster set up.		
08:30	Auditorium 1	Opening ceremony. Moderator: Bruno Hedlund		
08:30		Welcome and opening of the 14th International Turfgrass Research Conference		Maria Strandberg, ITS President + representative for Copenhagen University
09:00		Keynote 1: The turfgrass challenge: Documenting the value of a crop that doesn't feed the world		Beth Guertal, Professor, Auburn University, USA
09:30		Keynote 2: The Leicester city Journey to a data-driven approach' and 'Developing and securing the next generation of sports turf students'		John Ledwidge, Head of Sports Turf and Grounds, Leicester City Football Club, UK
10:00		Coffee / exhibition		
10:30	Auditorium 1	Opening session continues. Moderator: Bruno Hedlund		
Presentation of selected voluntary papers related to the UN goals for sustainable development (Agenda 2030)				
10:30		Seeking Green Grass: Strong Sustainability for Golf and Turfgrass	Robbie Fitzpatrick, University of St. Andrews, UK	Robbie Fitzpatrick
10:50		Estimated energy use and greenhouse gas emissions associated with golf course turfgrass maintenance in the Northern USA	Michael Bekken, University of Wisconsin, USA	Michael Bekken
11:10		Reduced phosphorus fertilization on golf courses: A comparison of three fertilizer recommendations for putting greens	Karin J. Hesselsøe, Norwegian Institute of Bioeconomy Research (NIBIO)	Anne F. Borchert, NIBIO
11:30		Numerical Simulation of Water and Nitrogen Transport in Three Turf Species	Kelly Kopp, Utah State University	Kelly Kopp
12:00		Lunch		
13:30	Auditorium 1	Plenary session: Historic development of turfgrass research and future opportunities Moderator: Trygve S. Aamlid.		
13:30		Dr. James B Beard: "The Father of Modern Turfgrass Science".	Gwen Stahnke, Walla Walla Community College, USA	Gwen Stahnke
13:45		Golf Course 2030: implementing UN Sustainable Development Goals to identify industry and research for greater resiliency in golf course playability.	Yoichi Ohara, Formerly Obihiro Zootechnical Univ., Japan	Yoichi Ohara
14:00		Quality standards for the golf course beyond the greens	Steve Isaac, R&A, Scotland	John Kemp
14:15		The history of the research, education, and practice of "cold-region turfgrass" in Japan	Stewart Brown, University Centre Myerscough, UK	Stewart Brown
14:30		Analysis of turfgrass research papers 2008-19: Implications and future opportunities for the International Turfgrass Society	Don Loch, University of Queensland, Australia	Don Loch
14:45		One minute 'Welcome to my poster' presentations		
		Tracking the turfgrass literature: growth, evolution, and diversity: 1672 to 2020	Peter Cookingham, Michigan Turfgrass Information Center, USA	
14:50		Coffee & exhibitions		
15:15	Auditorium 1	Interdisciplinary session: Turfgrass water and nutrient balance: Environmental impacts. Moderator: Mikah Woods		
15:15		Setting the agenda: Invited keynote from industry		Fritz Lord, Compo Expert GmbH
15:30		Economic and sustainability benefits of the United States Golf Association's investment in water, fertilizer, and pesticide management research	Cole Thompson, United States Golf Association	Cole Thompson
15:45		Nitrogen rate, irrigation and rainfall impacts on groundwater nitrate levels in sandy coastal golf courses	A. Martin Petovic, Cornell University, USA	Marty Petrovic
16:00		Foliar biostimulant applications combined with low-mineral nitrogen fertilization equal the quality of high-input mineral fertilization programs on tall fescue turf	Diego Gomez de Barreda, Valencia Polytechnical University, Spain	Diego G. de Barreda
16:15		One minute 'Welcome to my poster' presentations		
		Water use and resilience in the leisure sector	Anthony Hanson, Environmental Solutions International Ltd, UK	Tony Hanson
		Effective rainfall estimates for St. Augustinegrass lawns under varying irrigation programs	Charles Fontanier, Oklahoma State University, USA	Charles Fontanier
		Nitrogen forms in runoff export from St. Augustinegrass	Charles Fontanier, Oklahoma State University, USA	Charles Fontanier
		Effect of topdressing of compost, compost tea, and various fertilizers on soil and lawn characteristics	Nicholas Bero, Wisconsin State University, USA	Nicholas Bero
		Cool-season lawn performance as influenced by 'Microclover' inclusion and supplemental nitrogen	Cale Bigelow, Purdue University, USA	

		Risks for surface runoff and leaching of fungicides after application in late fall to control winter-active diseases on sand-based putting greens	Trygve S. Aamlid, NIBIO, Norwegian Institute of Bioeconomy Research (NIBIO), Norway	Trygve S.Aamlid
		Variable impacts on growth of deficit irrigation on <i>Cynodon dactylon</i> (L.) Pers. × <i>Cynodon transvaalensis</i> Burt Davy and <i>Poa pratensis</i> L	Hanna Burgin, Brigham Young Univ., USA	
		Exploring fine fescues as an option for low-input golf greens in the north-central USA	Dominic Petrella, University of Minnesota, USA	Dominic Petrella
		A field scale facility to evaluate the effect of soil organic matter content of sod-established St. Augustinegrass lawns on nitrate-nitrogen leaching	Michael Fidanza, Penn State University, USA	Michael Fidanza
		Minimum water requirements of Japanese lawngrass for survival during prolonged drought	Mu Hong, Kansas State University, USA	
16:35		Discussion with presenters in panel		
15:15	Auditorium 2	Thematic session: Soil surfactants. Moderator: Wolfgang Prämasing		
15:15		Benefits of a soil surfactant on putting greens under dry and wet conditions	Trygve S. Aamlid, Norwegian Institute of Bioeconomy Research	Trygve S. Aamlid
15:30		An investigation into the principles mode of action of surfactants and how a novel formulation can improve turfgrass quality by increasing dominance of <i>Agrostis</i> spp. in golf greens	Thomas Martin, Lancaster University, UK	Tim Baldwin
15:45		Identification of Wetting Agents for Water Conservation on Deficit-Irrigated Hybrid Bermudagrass Fairways	James Baird, University of California Riverside, USA	Marco Schiavon
16:00		Soil surfactant use on athletic field infield surfaces	Adam Thoms, Iowa State University, USA	Adam Thoms
16:15		Physical properties of sports turf rootzone justify using organic stabilizers	Deying Li, North Dakota State University, USA	Deying Li
16:30		One minute 'Welcome to my poster' presentations		
		Comparison of fresh versus effluent water irrigation on soil chemical properties of golf greens and fairways	Yaling Qian, Colorado State University, USA	
15:15	Auditorium 3	Thematic session: Turfgrass physiology. Moderator: Michelle DaCosta		
15:15		Effects of elevated carbon dioxide on drought tolerance and post-drought recovery involving rhizome growth in Kentucky bluegrass	Bigru Huag, Rutgers University, USA	Bingru Huang
15:30		Effect of combined shade and drought stress on bermudagrass turf	Charles Fontanier	Charles Fontanier
15:45		The use of rapid light curves to predict photosynthetic changes in turfgrasses exposed to low-light conditions.	David Jespersen, University of Georgia, USA	David Jespersen
16:00		Antioxidant enzyme responses of Kentucky bluegrass to simulated athletic traffic stress	Benjamin Pease, Iowa State University, USA	Adam Thoms
16:15		Plant growth regulator affects on winter hardiness of annual bluegrass putting green turf	John Inguagiato, University of Connecticut, USA	John Inguagiato
16:30		Comparison of nitrogen assimilation components among <i>Agrostis</i> species and cultivars	Michelle DaCosta, University of Massachusetts	Michelle DaCosta
16:45		One minute 'Welcome to my poster' presentations		
		The use of artificial lighting on sports turf	Etienne Abelard, DLF Seeds & Science, France	Etienne Abelard
		Differential expression of gibberellin-related genes in wild type and dwarf mutant of <i>Poa pratensis</i> implied their roles in regulating plant height	Shuxia Yin, China Agricultural University, China	
		Humic acid-based plant biostimulants impact on root viability and drought tolerance of creeping bentgrass	Xunzhong Zhang, Virginia Tech University, USA	Wendell Hutchens, Virginia Tech
		The use of 5-aminolevulinic acid to reduce heat stress related damages in tall fescue	David Jespersen, University of Georgia, USA	David Jespersen
		Sod production characteristics: How strong is your bermudagrass?	Chrissie Segars, Texas A&M University, USA	Chrissie Segars
		Effect of acute shade on the canopy morphology and evapotranspiration rates of three turfgrasses	Charles Fontanier, Oklahoma State University, USA	Charles Fontanier
		Interactive effects of waterlogging and salinity on perennial ryegrass and alkaligrass	Yaling Qian, Colorado State University, USA	
17:00		Poster Session with refreshments. Presenters attending posters		
19:00		ITS Symposium in memory of Dr. James Beard		

Tuesday 12 July			
08:30	Auditorium 1	Turfgrass practitioner seminar including 'Eat you golf course' (all day, see special program)	
08:30	Auditorium 2	Interdisciplinary session: Ecosystem services. Moderator: Ulike Pitha	
08:30		Setting the agenda: Invited keynote from industry	Edwin Roald, Golf Course Architect, Iceland
08:45		Presence of pollinator-friendly habitat on pollinator communities in managed turfgrass systems	Terri Billeisen, North Carolina State University, USA
09:00		Persistence and flowering performance of early-season flowering bulbs in warm- and cool-season turfgrasses in a subtropical climate	Bodie Pennisi, University of Georgia, USA
09:15		The golf course as an outdoor classroom – a proof of concept project	Anders Szczepanski, Linköping University, Sweden
09:30		One minute 'Welcome to my poster' presentations	
		Evaluation of flower visiting insect specimen sampling methodology in turfgrass habitat	Isodora G. P. de Souza, Mississippi State University, USA
		Future of Urban Landscapes: A Florida Perspective	Michael Dukes, University of Florida, USA
		Carbon Par: Estimating carbon status of land used by Icelandic golf courses and measuring carbon storage of turfgrass on golf fairways and mown roughs	Edwin Roald, Golf Course Architect, Iceland
		A cross-disciplinary forum promoting efficient biodiversity conservation in "new" grasslands in Sweden	Soifia Gylje Blank, Swedish Agricultural University
09:40		Discussion with presenters in panel	
08:30	Auditorium 3	Thematic session: Technology Integration in Turfgrass Management. Moderator: Josh Friell.	
08:30		An Improved User Interface to Identify Sustainable Turfgrasses within National Turfgrass Evaluation Program Data	Kevin Morris, National Turfgrass Evaluation Program
		NTEP-DB 1.0: A relational database for the national turfgrass evaluation program	Yiqun Xie, University of Minnesota, USA
08:45		Investigating targeted spring dead spot management via aerial mapping and precision-guided fungicide applications	Jordan Booth, Virginia Tech University, USA
09:00		Novel action thresholds of a logistic regression model to forecast dollar spot on bentgrasses	James Hempfling, Bayer Crop Science, USA
09:15		Impact of stitched hybrid systems in hybrid bermudagrass athletic fields	Kyley Dickson, University of Tennessee, USA
09:30		Use of plastic geocellular modules as a replacement gravel layer for natural turf rootzones	Tom Young, Sport Turf Research Institute, UK
09:45		One minute 'Welcome to my poster' presentations	
		An evaluation of mat hybrid turfgrass systems under simulated traffic	Adam Thoms, Iowa State University, USA
		The development of practices for the testing and maintenance of synthetic turf fields in the National Football League (NFL)	Andrew McNitt, Penn State University, USA
		Survival of Staphylococcus aureus applied to Poa pratensis, L. and synthetic turf	Andrew McNitt, Penn State University, USA
		A hydroponic system for natural turf that can take extreme wear as an alternative to artificial grass surfaces	Martin Sternberg, Capillary Concrete, Sweden
		A new era for golf course maintenance - from conventional to robotic mowers	Atle R. Hansen, Bærheim Golf Park, Norway
		Comparing Ground-based and Aerial Data at Field Scale During Dry Down on Golf Course Fairways	Josh Friell, The Toro Company, USA
		Counting dandelion blooms in field plots using an image processing program	Aaron Patton, Purdue University, USA
		Measurement of turf height and growth using a laser distance device	Aaron Patton, Purdue University, USA
10:00		Coffee & exhibitions	
10:30	Auditorium 2	Thematic session: Turfgrass establishment & maintenance I: Moderators: Simone Magni / Tom Young	
10:30		Comparison of mechanical removal of perennial ryegrass overseeding out of bermudagrass to chemical transitions	Kyley Dickson, University of Tennessee, USA
10:45		Species, Cultivar and Seeding Rate Effects on Non-Irrigated, Pesticide-Free Athletic Fields Playing Surface Quality	Garrett Maxey, University of Connecticut, USA
11:00		Bermudagrass variety and mowing height affects field performance characteristics	William Strunk, Western Kentucky University, USA

11:15		Plant Bio-stimulant effect on 3 cold season turfgrass species grown under controlled environment in Ohio	Alejandra Acuña, Pontificia Univ. Católica de Chile	Alejandra Acuna
11:30		One minute 'Welcome to my poster' presentations		
		Poa trivialis or Lolium perenne as nurse crops for faster establishment of Agrostis stolonifera putting greens in northern climates	Pia Heltoft, Norwegian Institute of Bioeconomy Research (NIBIO), Norway	Trygve S. Aamlid
		Weed pressure and turfgrass establishment in response to mulching media	Gerald Henry, University of Georgia, USA	Gerald Henry
		Fall establishment of Zoysiagrass (Z.japonica) on roadsides in the US transition zone	Grady Miller, North Carolina State University, USA	Grady Miller
		Practical reestablishment of golf greens following winter damages – A field study	Carl-Johan Lönnberg, Swedish Golf Federation, Sweden	Carl Johan Lönnberg
		Clippings return decreases mineral nitrogen requirements for bermudagrass (Cynodon spp.) lawns in Mediterranean Europe	Cristina Pornaro, University of Padova, Italy	Christina Pornaro
		Evaluation of late-season nitrogen source application on autumn color and winter injury of 'Riviera' bermudagrass in the upper transition zone of the U.S.	Jack Fry, Kansas State University, USA	Yanqi Wu
		Glycerin-based nitrogen applications for turfgrass growth	Adam Thoms, Iowa State University, USA	Adam Thoms
		Evaluating the use of the Branched-Chain Amino Acids in Combination with Urea on Creeping Bentgrass at Establishment	Adam Thoms, Iowa State University, USA	Adam Thoms
		Establishing seeded tall fescue with covers and drip irrigation methods	Dale Bremer, Kansas State University, USA	
10:30	Auditorium 3	Thematic session: Turfgrass genetics, breeding and species/variety testing I. Moderators: Leah Brilman / Don Loch		
10:30		Gene expression differences for drought stress response in three cool-season turfgrasses	Shaun Bushman, US Department of Agriculture (USDA), USA	Shaun Bushman
10:45		A novel method of generating RNAi library for high throughput gene function analysis in creeping bentgrass	Shui-zhang Fei, Iowa State University, USA	Shui-zhang Fei
11:00		Genetic diversity and species-specific DNA markers of Cynodon	James Baird, University of California Riverside, USA	Marta Pudzianowska
11:15		Octoploid zoysiagrass: Origin, stability, characteristics, and breeding behavior	Kenneth Quesenberry, University of Florida, USA	Ken Quesenberry
11:30		Identification of QTL associated with cold acclimation and freezing tolerance in Zoysia japonica	Xingwang Yu, North Carolina State University, USA	Xingwang Yu
11:45		Genetic identity and diversity among experimental selections and cultivars of vegetatively propagated turf bermudagrass as assessed with SSR markers	Yanqi Wu, Oklahoma State University, USA	Yanqi Wu
12:00		Lunch		
13:30	Auditorium 2	Thematic session: Turfgrass establishment & maintenance II: Moderators: Simone Magni / Tom Young		
13:30		Evaluating Biological Thatch Control on Golf Greens	Joshua Weaver, Clemson University, USA	Bert McCarty
13:45		A Review of a Novel Enzyme System for the Management of Thatch and Soil Water Repellency in Turfgrass	Paul Raymer, University of Georgia, USA	Sudeep Sidhu
14:00		Identification of earthworm species in sand-topdressed hybrid bermudagrass golf tees	Paige Boyle, Utah State University, USA	Paige Boyle
14:15		Using local weather stations to generate growing degree-day data to predict the flowering pattern of an annual bluegrass fairway in Michigan	Kevin Frank, Michigan State University, USA	Aaron Hathaway
14:30		Plant growth regulator and low-dose herbicide programs for annual bluegrass seedhead suppression in fairway and athletic-height turf	John Peppers, Virginia Tech University, USA	John Peppers
14:45		One minute 'Welcome to my poster' presentations		
		Influence of mowing height of cut and frequency for golf tournament preparation on putting green ball roll distance and turfgrass quality	Timothy Lulis, Penn State University, USA	John Kaminski
		Influence of brush type and brushing frequency on putting green ball roll distance and turfgrass quality	Timothy Lulis, Penn State University, USA	John Kaminski
		Velvet bentgrass putting green quality, water retention, and infiltration as affected by topdressing sand size and rate	Ruying Wang, Oregon State University, USA	Ruying Wang
		Comparing conventional aerification practices with the core recycler	Gerald Henry, University of Georgia, USA	Gerald Henry
		Evaluating biological thatch control on Zoysia matrella (L.) Merr. golf greens	Joshua Weaver, Clemson University, USA	
		Irrigation frequencies and reference evapotranspiration replacement affecting annual bluegrass encroachment in perennial ryegrass in western Oregon	Alyssa Cain, Oregon State University, USA	Alec Kowalewski

		Maximizing seedhead suppression of <i>Poa annua</i> L. in Michigan by using growing degree-days to predict optimum application timing for mefluidide, ethephon, or ethephon plus trinexapac-ethyl	Kevin Frank, Michigan State University, USA	Aaron Hathaway
13:30	Auditorium 3	Thematic session: Turfgrass genetics, breeding and species/variety testing II. Moderators: Leah Brilman / Don Loch		
13:30		Divot recovery of cool-season turfgrass species and mixtures in low maintenance fairways	Stacy Bonos, Rutgers University, USA	Lindsay Hoffman
13:45		Viability of five fairway turfgrasses with and without chemical inputs	Ben Pease, Iowa State University, USA	
14:00		Seed mixtures of red fescue and colonial, creeping, or velvet bentgrass for pesticide-free management of Nordic golf greens	Karin Juul Hesselsøe, Norwegian Institute of Bioeconomy Research (NIBIO), Norway	Karin Juul Hesselsøe
14:15		Review of cool-season turfgrasses for salt-affected roadsides in cold climates	Eric Watkins, University of Minnesota, USA	Eric Watkins
14:30		One minute 'Welcome to my poster' presentations		
		Effects of polyethylene glycol on root and shoot production in zoysiagrasses	Kevin Kenworthy, University of Florida, USA	Kevin Kenworthy
		Predictive ability of perennial ryegrass spaced-plant nurseries for turfgrass and seed production swards in Minnesota	Garrett Heineck, University of Minnesota, USA USA	Eric Watkins
		SCANTURF - Evaluation of turfgrass varieties for lawns and sports grounds in Scandinavia	Lars T. Havstad, Norwegian Institute of Bioeconomy Research (NIBIO), Norway	Lars Havstad
		Domestication of native grasses in New Zealand	Alan Stewart, PGG Wrightson Seeds, New Zealand	Alan Stewart
		Winter survival of experimental bermudagrasses in the upper transition zone of the U.S.	Mingying Xiang, Texas A&M University, USA	Yanqi Wu
		Mixing warm-season turfgrass cultivars to reduce weed pressure and increase lawn quality	Adam Dale, University of Florida, USA	Adam Dale
		Minimum water requirements of cool-season turfgrass for survival and recovery after prolonged drought	Mu Hong, Kansas State University, USA	
		Low-input golf course putting green performance of fine-textured inter- and intra-specific zoysiagrass (<i>Zoysia</i> spp.)	Ambika Chandra, Texas A&M University, USA	Chrissie Segars
13:30	Auditorium 4	Student presentations / competition I. Moderator: Paul Koch		
13:30		Effects of perennial ryegrass competition on bermudagrass and hybrid bermudagrass cover, biomass, and total nonstructural carbohydrate accumulation	John Peppers, Virginia Tech University, USA	John Peppers
13:45		Evaluation of South-African common bermudagrass germplasm for shade tolerance	Esdras Carbajal, North Carolina State University, USA	Esdras Carbajal
14:00		Minimal irrigation requirements of Kentucky bluegrass and tall fescue blends in the northern transition zone	Jada Powlen, Purdue University, USA	Jada Powlen
14:15		Aboveground and belowground traits of turf-type bahiagrass (<i>Paspalum notatum</i> Flüggé) genotypes under simulated drought	Pablo Agustin Boeri, University of Florida, USA	Pablo Boeri
14:30		Aerial and ground-based assessments of preemergence herbicide effects on St. Augustinegrass grow-in	Amy Wilber, Mississippi State University, USA	Amy Wilber
15:00		Coffee & exhibition		
15:30	Auditorium 2	Thematic session: Turfgrass establishment & maintenance III: Moderators: Simone Magni / Tom Young		
15:30		Traffic form and season of wear affect responses of fine fescues	Hui Chen, Rutgers University, USA	Hui (Eric) Chen
15:45		Influence of foot traffic, irrigation, nitrogen fertilization, and weather factors on tissue N content in creeping bentgrass 'Focus'	Qiyu Zhou, University of Wisconsin, USA	Doug Soldat
16:00		Effects of growing degree day based trinexapac-ethyl application on ultradwarf hybrid bermudagrass putting green quality and ball roll	James Brosnan, University of Tennessee	James Kerns
16:15		Impact of putting green management on visible wear damage caused by foot traffic	Douglas Karcher, University of Arkansas, USA	Thom Nicholai
16:30		One minute 'Welcome to my poster' presentations		
		Assessing fine fescue mixtures and plant growth regulator applications to determine their effect on traffic tolerance and divot recovery	Eric Watkins, University of Minnesota, USA	Maggie Reiter
		Evaluation of Late Season Nitrogen Source Application on Autumn Color and Winter Injury of 'Riviera' Bermudagrass in the Upper Transition Zone of the U.S.	Jack Fry, Kansas State University, USA	Yanqi Wu
		Plant parasitic nematodes, substrates or grass species as reasons for poor reestablishment of a sand-based putting green after winter kill	Kemeng Xiao, China Agricultural University, China	Yan Sun

		Simulated Traffic on Turfgrasses during Drought Stress: I. Performance and Recovery of Turf Canopies	Ross Braun, Purdue University, USA	
		Simulated traffic on turfgrasses during drought stress: II. Soil moisture, soil compaction, and rooting	Ross Braun, Purdue University, USA	
15:30	Auditorium 3	Thematic session: Turfgrass genetics, breeding and species/variety testing III. Moderators: Leah Brilman / Don Loch		
15:30		Use of endophytic fungi in turf grasses; difficulties in delivering to the market	Alan Stewart, PGG Wrightson Seeds, New Zealand	Alan Stewart
15:45		Variation in southern chinch bug (<i>Blissus insularis</i>) survival and damage on St. Augustinegrass germplasm	Rocio van der Laat, North Carolina State University, USA	Esdras Carbajal
16:00		Mowing frequency and performance of genetically modified St. Augustinegrass and standard commercial cultivars	Jamie Buhlman, University of Florida, USA	Jamie Buhlman
16:15		Evaluation and genetic analysis of red thread (<i>Laetisaria fuciformis</i>) disease prevalence in tall fescue (<i>Festuca arundinacea</i>)	Yuanshuo Qu, Rutgers University, USA	Yuanshuo 'Henry' Qu
16:30		One minute 'Welcome to my poster' presentations		
		Identification of sources of resistance to gray leaf spot in <i>Stenotaphrum</i> germplasm	Esdras Carbajal, North Carolina State University, USA	Esdras Carbajal
		Global DNA methylation predicts epigenetic reprogramming and transgenerational plasticity in <i>Poa annua</i> L	David Huff, Penn State University, USA	John Kaminski
		Multispecies genotype × environment interaction for turfgrass quality in five turfgrass breeding programs in the southeastern United States	Esteban Rios, University of Florida, USA	
		Multienvironment evaluation of St. Augustinegrass breeding lines for turf performance via a mixed-models approach	Esteban Rios, University of Florida, USA	
		Characterizing the growth and winter survival of commercially available and experimental genotypes of St. Augustinegrass	Aaron Patton, Purdue University, USA	Kevin Kenworthy
		Effects of St. Augustinegrass Genotype and Irrigation Frequency on Turfgrass Quality in a Subtropical Environment	Manuel Chavarria Sanchez, University of Florida, USA	Kevin Kenworthy
15:30	Auditorium 4	Student presentations / competition II. Moderator: Paul Koch		
15:30		Resolving issues related to target-site resistance detection in <i>Poa annua</i> alpha-tubulin	Claudia Ann Rutland, Auburn University, USA	Claudia Rutland
15:45		Evaluation of nitrogen fertility and plant growth regulator impacts on annual bluegrass weevil (<i>Listronotus maculicollis</i>) oviposition and larval survivorship	Audrey Simard, Penn State University, USA	Audrey Simard
16:00		The creeping bentgrass microbiome: Traditional culturing and sequencing results compared with metagenomic techniques	Edward McNab, University of Guelph, Canada	Edward McNab
17:00		Poster Session with refreshments. Presenters attending posters		
Thursday 14 July				
08:30	Auditorium 1	Interdisciplinary plenary session: Integrated Pest Management. Moderator: Annick Bertrand		
08:30		Setting the agenda: Invited introduction from industry		Niels Dokkuma, Netherlands Golf Federation
08:45		Integrated pest management effects on weed populations managed without herbicides in the Pacific Northwest	Emily Braithwaite, Oregon State University, USA	Emily Braithwaite
09:00		A new device for selective, mechanical weed control in turfgrasses	Jason Henderson, University of Connecticut, USA	Jason Henderson
09:15		Empirical and theoretical assessment of mechanical and injection cultivation methods to manage white grubs in turfgrass	Benjamin McGraw, Penn State University, USA	Ben McGraw
09:30		Non-conventional fungicides to control dollar spot disease	Tom Hsiang, University of Guelph, Canada	Tom Hsiang
09:45		Utilizing organic amendments for general suppression of dollar spot on creeping bentgrass turf	Joseph Roberts, Clemson University, USA	Joe Roberts
10:00		Discussion with presenters in panel		
10:30		Coffee & exhibition		
11:00	Auditorium 1	Thematic session: Turfgrass weed management I. Moderators: Scott McElroy / Diego Gomez de Barreda		
11:00		Long-term influence of nitrogen, plant growth regulators, and iron sulfate on annual bluegrass populations and turfgrass quality on a golf green	John Kaminski, Penn State University, USA	Kaiyuan Tang

11:15		Characterization of mutations conferring inherent resistance to acetyl coenzyme A carboxylase-inhibiting herbicides in turfgrass and grassy weeds	Paul Raymer, University of Georgia, USA	Trent Tate
11:30		Lolium arundinaceum leaf and root developmental temperatures influence its allelopathic potency on Poa annua+C2	Daewon Koo, Virginia Tech University, USA	Daewon Koo
11:45		One minute 'Welcome to my poster' presentations		
		Response of creeping bentgrass (<i>Agrostis stolonifera</i>) and weed species to plant growth regulators	Gerald Henry, University of Georgia, USA	Gerald Henry
		Nitrogen fertility rates affecting weed population dynamics in a perennial ryegrass stand in western Oregon	Alec Kowalewski, Oregon State University, USA	Alec Kowalewski
		Influence of grass species and mowing practices on weed cover and quality in infrequently mowed grass stands	Peter Landschoot, Penn State University, USA	Peter Landschoot
		Field assessment of flazasulfuron and trifloxysulfuron sodium drift	Shawn Askew, Virginia Tech University, USA	Shawn Askew
		Selective perennial ryegrass control in creeping bentgrass with flazasulfuron	Clebson Gonçalves, Virginia Tech University, USA	Clebson Gonçalves
		Fraise mowing can improve herbicidal control of bermudagrass	Michael Richardson, University of Arkansas, USA	
11:00	Auditorium 2	Thematic session: Management of Turfgrass diseases and insect pests. Moderator: Ruth Mann		
11:00		Etiology and management of Pythium root rot in golf course putting greens	James Kerns, North Carolina State University, USA	Jim Kerns
11:15		Strategies for increasing ferrous sulfate efficacy against dollar spot of creeping bentgrass	Wendell Hutchens, Virginia Tech University, USA	Wendell Hutchens
11:30		Suppression of Microdochium patch using rotations of mineral oil, sulfur, and phosphorous acid	Clint Mattox, Oregon State University, USA	Clint Mattox
11:45		One minute 'Welcome to my poster' presentations		
		Comparing rates of mineral oil, sulfur, and phosphorous acid on Microdochium patch suppression and turfgrass quality	Clint Mattox, Oregon State University, USA	Clint Mattox
		In vitro screening of turfgrass species and cultivars for resistance to dollar spot	Tatsiana Espevig, Norwegian Institute of Bioeconomy Research (NIBIO), Norway	Tatsiana Espevig
		Pacific shoot-gall disease control in annual bluegrass putting greens using a new formulation of abamectin	James Baird, University of California Riverside, USA	James Baird
		Effects of fungicides on creeping bentgrass health and rooting characteristics under abiotic stress	James Baird, University of California Riverside, USA	James Baird
		Use of fans and their effects on the turf microenvironment and disease development	Charles Peacock, North Carolina State University, USA	Charles Peacock
		Identification, frequency of occurrence, and inoculum density of select ectotrophic root-infecting fungi within ultradwarf hybrid bermudagrass greens in Mississippi	Maria Tomaso-Peterson, Mississippi State University, USA	Maria Tomaso-Peterson
		Compost topdressing to suppress necrotic ringspot and improve overall health of Kentucky bluegrass lawns	Yaling Qian, Colorado State University	
12:00		Lunch		
13:00	Auditorium 1	Thematic session: Turfgrass weed management II. Moderators: Scott McElroy / Diego Gomez de Barreda		
13:00		Turfgrass response to flazasulfuron and trifloxysulfuron sodium deposited by runoff water	Shawn Askew, Virginia Tech University, USA	Shawn Askew
13:15		Effect of spray droplet size on pronamide control of Poa annua	Martin Ignes, Mississippi State University, USA	Martin Ignes
13:30		Perennial ryegrass phytotoxicity increases with mesotrione rate and growth-promoting environmental conditions	Clebson Gonçalves, Virginia Tech University, USA	Clebson Gonçalves
13:45		Postemergence <i>Polygonum aviculare</i> control in <i>Cynodon dactylon</i> turf	Whitnee Askew, Virginia Tech University, USA	Whitnee Askew
14:00		One minute 'Welcome to my poster' presentations		
		Efficacy of Natural Herbicides on Dandelion (<i>Taraxacum officinale</i> Weber x Wiggers) and White Clover (<i>Trifolium repens</i> L.) Populations	John Kaminski, Penn State University, USA	John Kaminski
		Monitoring fall CO2 efflux of dallisgrass and bermudagrass: Implications for non-selective weed control	Gerald Henry, University of Georgia, USA	Gerald Henry
		Assessing a programmatic approach for the control of quinclorac-resistant smooth crabgrass (<i>Digitaria ischaemum</i>) in established bermudagrass turf	Atikah Putri, Mississippi State University, USA	Atikah Putri
		Effect of hollow-tine cultivation on crabgrass infestation in cool-season turf	Matthew Elmore, Rutgers State University, USA	Jim Murphy
		Effects of soil compaction and moisture on the growth of <i>Juncus tenuis</i>	James McCurdy, Mississippi State University, USA	Jay McCurdy

13:00	Auditorium 2	Thematic session: Management of Turfgrass diseases and insect pests. Moderator: Ruth Mann		
13:00		Diversity, composition, and freedom to choose drive effects of St. Augustinegrass cultivar blends on an herbivorous insect	Adam Dale, University of Florida, USA	Adam Dale
13:15		Evaluating biological and oil-based fungicides for dollar spot suppression on turfgrass	Paul Koch, Wisconsin State University, USA	Paul Koch
13:30		Management of leaf and sheath spot (mini ring) on hybrid bermudagrass in Hawaii	Zhiqiang Cheng, University of Hawaii, USA	Zhiqiang Cheng
13:45		Reproductive phenology and feeding patterns of <i>Listronotus maculicollis</i> during spring emergence: Implications for spring management	Benjamin McGraw, Penn State University USA	Garrett Price
14:00		One minute 'Welcome to my poster' presentations		
		Impact of nitrogen source, fall fertilizers, and preventive fungicides on spring dead spot caused by <i>Ophiosphaerella korrae</i> and <i>O. herpotricha</i>	Lane Tredway, Syngenta, USA	James Kerns
		Phylogenetic evaluation of <i>Cochliobolus</i> spp. collected from turfgrass	Nathan Walker, Oklahoma State University, USA	Nathan Walker
		Influence of calcium and nitrogen fertilizer on creeping bentgrass infected with dollar spot under cool temperatures	Xi Xiong, University of Missouri, USA	
		Effects of nitrogen, phosphorus and potassium rates on <i>Microdochium</i> patch	Alec Kowalewski, Oregon State University, USA	Alec Kowalewski
		Nitrogen source impacts <i>Rhizoctonia</i> leaf and sheath spot severity in ultradwarf bermudagrass	Lukas Dant, Clemson University, USA	James Kerns
		Field evaluations and in vitro sensitivity of <i>Microdochium nivale</i> to succinate dehydrogenase (SDHI) fungicides	Kurt Hockemeyer, Wisconsin State University, USA	Kurt Hockemeyer
		Red bermudagrass mite severely reduces growth in hybrid bermudagrass	Donald Loch, University of Queensland, Australia	Don Loch
		Detection of cyanotoxins in irrigation water and potential impact on putting green health	Gerald (Lee) Miller, North Carolina State University, USA	Lee Miller
		In Vitro Sensitivity of <i>Claviceps</i> , <i>Fusarium</i> and <i>Microdochium</i> Isolated from Grasses to Commonly Used Fungicides	Tatsiana Espevig, Norwegian Institute of Bioeconomy Research (NIBIO), Norway	Marina Usoltseva
		<i>Pyricularia oryzae</i> incites gray leaf spot disease on hard fescue (<i>Festuca brevipila</i>)	Phillip Vines, Rutgers University, USA	Bruce Clarke
		Resistance to the demethylation-inhibiting fungicide propiconazole in Canadian populations of <i>Microdochium nivale</i>	Tom Hsiang, University of Guelph, Canada	Tom Hsiang
15:00		Poster Session with refreshments. Presenters attending posters		
15:30		ITS Quadrennial meeting, including student presentation awards		
19:00		Conference dinner		