**June 2, 2015**

Welcome / Meeting Overview

*Doug Karcher:*

* Introductions
* Lunch at Chileno’s

Foster the integration between teaching and extension

-Research/teaching into extension

*John Russin:*

* 2014 minutes
* 5 year project, rewritten in 2013
* Sign up for the project , NIMMS membership list
* Meeting schedule

*Janet Cole:*

* Welcome to Oklahoma

*Dennis Martin:*

* 1992, last meeting in Oklahoma
* 3.88 million in Oklahoma
* 1.1 million residencies in Oklahoma
* 70th year of turf education in Oklahoma
* Dr. Huffine, forage scientist 🡪turfgrass program (1963), agronomy department .
* Oklahoma:
	+ Eco-regions
	+ Mountains
	+ Rainfall
		- 12-52 inches
		- Emerged from drought
* USDA hardiness zone
* Faculty:
	+ Justin Moss
	+ Nathan Walker
	+ Yanqi Wu
	+ Kemin Su
	+ Eric Rebeck, ento extension
	+ Tom Royer, IPM
	+ Tracy Boyer
	+ Chanjin Chung
	+ Angela Post, extension wheat
	+ Dennis Martin

Turf Pathology Update

*Nathan Walker:*

* Ectotrophoc root-infecting fungi
* Host/pathogen interaction of Spring Dead Spot patho-system using transgenic fungi
	+ Transgenic fungi to see where they reside
* Teaching
	+ Teaching and turfgrass pathology emerging issues
		- Decline in students enrolled in turfgrass IPM at a Junior/Senior level course
		- Recent administrative emphasis on minimum class size for an upper level course at 12 students
			* Budget issues
		- Future offering of course is questionable
	+ Turfgrass industry has about 35 total fungicide active ingredients available
	+ 30 prepackaged fungicide mixtures
		- Increases spectrum of activity
		- Convenient
		- One even has 4 active ingredients
	+ Greater emphasis on resistance management
	+ Pathology teaching
		- Students stressed for time
		- Attendance issues
		- Reliance on short term memory/internet
	+ Industry support?
	+ MONEY (Puff Daddy: Its all about the Benjamins)
* Decline in extension turfgrass pathologists
	+ For many, turfgrass is only one of their commodity responsibilities
	+ Extension is only part of peoples responsibilities
* Australia
	+ Austeria program effectively ended most government and university research/teaching/extension programs
	+ Disease issues even on warm-season grasses
	+ Fringe “plant-protection industry”
* Issues not limited to turfgrass pathology
	+ Greater need than people can meet
	+ Many service industry outside of state
	+ Travel is expensive
* Research
	+ Greater performanece expectations and intensive management of Turfgrass
		- Mowing height, cultivars
	+ Environmental extremes
	+ Parasitic nematodes
	+ Bentgrass putting grass issues
	+ Ultradwarf Bermuda grass issues
* Disease
	+ Spring dead spot
		- Riveara
			* In the middle of the spectrum—good
			* Maturity issues
	+ Large patch is everyehere and severe
	+ Leaf Spot
	+ Fairway Patch?
		- Similar to spring-dead spot
	+ Fairy rings and unidentified disease

State Reports (AL, AZ, AR, FL, GA)

*Various State Rep’s*

*Alabama:*

* Faculty:
	+ New
		- Dr. Steve Lee
		- Dr. Joyce Ducar
* Student:
	+ Numbers are down
		- 23 full-time undergraduates
		- Down about 50% from recent high
	+ Building online program
		- Master of turfgrass management
			* Non-thesis masters
			* 32 credit hours
			* Capstone project
			* Tuition
				+ $450 per credit hour
* Extension
	+ Ebook series
		- Gardening in the South
	+ Smart yards app
* Resignation
* Dean of the College of Agriculture

*Arizona:*

* Not present
* Faculty updates
	+ Retirees
* Research
	+ Cultivar screening
	+ Salt stress, drought stress
* Extension
	+ Turfgrass field day
	+ IPM seminars
	+ Turf schools
* Courses:
	+ 14 students
	+ Intro to turf science and management
		- 14 students
* Budget cuts
	+ Farm fees apply to all land use

*Arkansas:*

* Jon Boyd
	+ Extension
* Faculty update
	+ 5 grad students
		- 2 phd
		- 3 masters
	+ Retirement
* New department head
	+ 5 star quarterback
	+ Wayne
* Alternate year field day schedule
* New putting green
	+ Warm season research

*Florida:*

* New hire
	+ Provost at Cornell
		- Pro-agriculture
	+ New dean for research
	+ Agronomy head
* Retirement
	+ Jon Cisar
* Hiring turf entomologists
* Teaching
	+ No more turf degree program🡪 degree in plant science
* Research
	+ Drop in research
	+ Spread too thin
* Extension
	+ New positions

*Georgia*

* Retirement
	+ Bob Carrow
	+ Keith Karnok
	+ Lee Burpee
* Faculty
	+ 19 state wide
	+ Promotions
* New cultivar release
	+ Bermuda grass
	+ DT1
* Awards
	+ Walter B Hill Award
* Field Day
	+ 850 attendees
	+ Governor spoke
	+ Every two years
	+ August 3, 2016
* Facilities enhancement project
	+ 11.5 million dollars of bond funding
	+ Facility enhancement statewide
* Extension
	+ Hiring county agents
* Teaching
	+ 21 students in undergrad program
	+ 5 or 6 grad students

Break

Turf Nematode Update

*Billy Crow:*

* Nemacure
	+ Fenamiphos-Nemacure 10 G and Nemacure 3 Turf
		- Organophosphate “nerve poison”
	+ Versatile
		- All kinds of nematodes and turf types
	+ Cease use by October 2015
		- Deadline pushed to 2017
* Fluensulfone
	+ New class of nemacide
	+ Owned by Adama/Qualipro
	+ Approved for food crop, safe for animal and human
* Nemitz Pro G
	+ 1.5% a.i. granular formulation
	+ Effects of B.longicaudatus , percent green cover, and root length graphs
	+ Decreased population density of sting and lance nematode (roots and soil)
	+ Improved turf root system and cover
	+ Multiple lower dose more effective than single large dose
	+ National launch
* Abamectin
	+ Active ingredient in Syngenta’s Avid 0.15 EC
	+ Labeled for greens, tees and fairways
	+ RUP
	+ Do not have to buy with Heritage
* Avid
	+ Related to invermectin used in human and veterinary medicine
	+ Excellent nematicide but poor movement in soil.
		- Will go only about 2 inches deep
	+ Restricted use pesticide in Florida
	+ Percentage green cover and USGA nematode control graph
	+ Turf responses, no nematode reduction
	+ Targeted at Sting nematodes but application eliminated root-knot nematodes
		- Juvenile root-knot nematodes inside roots causing problems but not laying eggs yet
* USGA/FGSCA IPM study
	+ Sting, spiral, stubby root, and ring nematodes
	+ Bermuda grass cultivars with different level of nematode resistance
		- Nitrate leaching
* 2016
	+ Good year for nematode management
	+ New Bayer product
		- Safe?
	+ Nematicice rotations

Sports Turf Safety Research

*Adam Thoms:*

* Center for athletic turf safety
	+ Funded by astroturf
	+ Half natural, half synthetic
	+ Each plot is lined with pond liner and designed for leaching testing
	+ Natural
		- Bermuda grass and KBG
		- Soil
			* Silt-loam (native)
			* Sand-cap
	+ Synthetic
		- Fiber, denier, thatch (root zone layer), pile, primary polymer, etc.
* Athletes
	+ Contact vs non-contact injuries
		- Prevent non-contact injuries
	+ Bio mechanics
	+ Athlete-to-surface interactions
		- Ground reaction forces
			* 3-5 times force back on them
	+ Issues with natural turf testing
		- Portable device to simulate human reaction with turf
		- Tennessee Athletic Field Tester
			* Change out shoes and forces
* Temperature on synthetic turf
	+ Higher temperatures🡪higher athlete injury rate
	+ Irrigation and synthetic turf
		- Works for about 20 minutes
	+ Temperature upper limits
	+ Build model to predict synthetic turf surface temperatures
		- Maximum forecasted air temperature + maximum forecasted solar radiation
* Natural turf plots
	+ Digital image analysis
	+ 30 similar traffic events
		- 10 games a week over 3 weeks
		- 3 games a week over 10 weeks
	+ Sand performance
	+ Surface hardness
		- 100 GMAX NFL limit
		- All tested surface were playable in wet and dry years
	+ Force measurements
		- No differences in cleat interaction
* Cultivar research
	+ Green cover on simulated traffic events
		- Tifway vs Patriot
		- Latitude vs Tifway
		- Northbridge vs Tifway
* Field quality and weeds
	+ Broadleaf and grassy weed effects on athletic field quality
		- %cover vs games
		- Weeds lead to higher chance of head injury vs Bermuda grass
			* Ranges of weed cover testing in the future
* Hardness testers
	+ F355 and Clegg relationship
		- Non-existent
* Merge natural and artificial turf
* Cleat design and surface
	+ Higher force on more aggressive frontal cleating

Lunch

Breeding Cold Tolerance in Warm-Season Grasses

*Dennis Martin:*

* Freezing tolerance vs chilling resistance
	+ Chilling tolerant
		- Maintaining color through cold season
	+ Freezing tolerant
		- Freeze injury
* History
	+ 1986-USGA/OCAST funding for improved seeded turf-type Bermuda grass
	+ 2001-2002-Yukon and Riviera seeded Bermuda grass became available
	+ 2002-2003- Patriot interspecific hybrid becomes available
	+ 2012- Latitude 36 and Northbridge commercially available
* Experimental trials
	+ Bermudagrass trial
		- OKC varieties
	+ Warm season putting green trial

*Yanqi Wu:*

* Hybrid bermudagrass
	+ Tifgreen
		- Mutations in different environments
	+ Tifdwarf
	+ Champion dwarf
* Justification and breeding goal
	+ Winterkill
		- No cold-hardy cultivar of this kind has ever been released for transition zone in US
	+ Develop cold hardy grass
* Preliminary data
	+ Dwarf type progeny from C. transvaalensis x C. dactylon
* Future plan
	+ Dr. Moss and Dr. Martin replicated mowing trial
	+ Dr. Nathan Walker evaluating host plant disease resistance especially Spring Dead Spot
	+ Wu to continue to produce new dwarf type interspecific hybrids

*Ambika Chandra*

* Long term collaboration between TAMU and KSU to develop new and improved Zoysia grasses for the transition zone.
* Chisholm
	+ Comparable cold-tolerant to Meyer
	+ Superior turf quality
	+ Rapid rate of establishment
	+ Rapid recovery rate
	+ Shade tolerant
	+ Goof fall color retention
	+ High shoot density
	+ Low seed-head number
	+ Resistant to Zoysia grass mite
* Finer textured and cold tolerant Zoysia
	+ KSUZ 0802 and KSUZ 1201 are superior to Meyer
* USGA
	+ 2012
	+ Three state collaboration
		- KSU, TAMU, and Purdue
	+ Develop cold hardy and large patch resistant Zoysia grasses
		- 60 have been qualified for advancement

*Susana R. Milla-Lewis*

* Breeding for cold tolerance in NC
* St. Augustine
	+ Long range of winter survival in North Carolina
	+ Raleigh
		- Released in 80’s
		- Could use improvement
		- Industry standard for cold tolerance
		- Ugly
	+ Parent selection
	+ Improving selection
	+ Markers
	+ Advanced trials
		- 2014
			* 81 entries
			* 4 locations
		- 2015
			* 45 entries
			* 3 locations
* Zoysiagrass
	+ 2010
	+ 80 entries
	+ Evaluated 10-11 for winter coverage
	+ 350 hybrids per year
	+ First trial 2016?
	+ MyerxVictoria=175 progeny

*Dr. Paul Raymer*

* Seashore paspalum
* North

*Dr. Kemin Su*

* Cell membrane are primary site of damage
* Three bermudagrasses
	+ Okc 1131
		- Early spring green up
		- Freexing tolerant
	+ Tifway
	+ Celebration
	+ Goals
		- Quantify membrane lipid molecular species change under optimum conditions
		- Identify relationships between lipids and cold tolerance
	+ CRD with 5 reps, well waters, lipid sampling, mowed 1xweek at 5 cm
	+ Optimum temperature 30 C day, 24 C night with light intensity of 680 umol over 14 hour photoperiod
	+ Chilling stress
	+ Lipids collected 3 x per day
		- Before chilling treatment
		- 14 days chilling stress
		- 42 days chilling stress
	+ 4th time leaf samples were collected when greening up

*Kevin Kenworthy from Florida*

* Florida cold tolerant
	+ Green all year round
* SERI program
* NTEP trials as cold tolerant screen

Update on the SCRI Multi-State Warm-Season Grass Breeding Project

*Ambika Chandra:*

* Federal finding to agricultural research and development
* Specialty crops competitiveness act of 2004
	+ Specialty crops
		- Intensively cultivated
		- Used by people
			* Fruits and vegetables, tree nuts, dried fruits and nursery crops.
			* Turfgrass is now included
* SERI investment by Major Crop Groups
	+ Funding to turfgrass research
	+ 5 years of finding
	+ Variance of proposals throughout the years
	+ 3% of funding
* 2008-2009 proposal deficiencies
	+ Need feedback mechanism
	+ Management plan
	+ No social science component
	+ Not enough detail provided on how consumer surveys will be conducted
	+ Need experienced turfgrass economist
	+ Grant and program coordinator
	+ More detail on stages of breeding, germplasm sharing, and evaluation
	+ Biotic and abiotic stress tolerant
* Funded in 2010
* Objectives
	+ Creation of Coordinate Agricultural Projects team
		- 5 species
		- Multi-state team
		- Transdisciplinary
	+ Functioning of the ream to promote SSTIP
	+ Development of superior cultivars
		- Turfgrass breeding and development
		- DALSA 0605 St. Augustine grass
			* Highly sterile
			* Drought tolerance
			* High Gray LeafSpot tolerance
			* Suppression of Southern Cinch bugs
			* Reasonably good cold tolerance
		- DT-1 Bermudagrass
			* Triploid hybrid
			* More drought tolerant
			* Better establishment
			* Superior traffic resistance
			* Higher sod strength
			* Faster spring green up
			* Greater color retention
		- Gentice and QTL Mapping in bermuda grass drought tolerance
			* More than 100 simple sequence repeat SSR Markers
			* 981 SSR markers in African Bermuda grass
			* 18 linkage groups
		- Sequence-tagged high density genetic map of Zoysia Matrella
			* Crossing diamond and cavalier
			* 95 F1 individuals were genotyped
			* Genetic map of diamond has 2375 RAD markers
			* Cavalier has 3563 RAD markers
* Cross location progeny evaluation
	+ - 8 locations
			* Stillwater, Oklahoma
			* Dallas, Texas
			* College Station, Texas
			* Raleigh, North Carolina
			* Griffin, Georgia
			* Tifton, Georgia
			* Jay, Florida
			* Gainesville, Florida
	+ Commercialization
	+ Consumer preference
		- Determine consumer preferences for drought and salinity tolerant turfgrass based on grass attributes
	+ Education
* Shade tolerance
	+ RFT for field shade testing at Tifton, GA
		- Planted summer 2014
		- 70% shade for advanced lines of all four species
* Structure
	+ Holistic approach
	+ Measurable parameters
		- Germplasm exchange
		- Germplasm advanced
		- Cultivar releases
		- Graduate student training
		- Publications
		- Socio-economic surveys
		- Extension outreach
* Challenges
	+ Budget
		- 3.8 million over 5 institutions
	+ Personal changes
		- 4 CoPis moved/retired
	+ Data analysis
		- Method, data template
	+ Rating scale/system
		- Standardization
	+ Drought
		- Variable across locations
	+ Years to selection
		- 2 years for drought evaluation in SSPN and selections for RFT
	+ Changes
		- Scope of work based on results and discussion
	+ Extension outreach
		- No cultivars on hand for first year of project

**June 3, 2015**

SERA-25 Business Meeting

*Doug Karcher*

* *Agenda approval*
* *2014 Meeting Summary (Dara Park)*
	+ *14 participants in Greenville*
	+ *June 22/23-25*
	+ *5 year plan*
	+ *New format for the state reports*
	+ *Discussion on next year’s meeting*
	+ *New joint conference*
	+ *Gerald Henry, undergraduate teaching*
		- *Students are doing too much*
		- *Promoters*
		- *Be better at utilizing counselors*
		- *Distance education*
		- *Undergraduate vs Graduate*
	+ *Clemson*
		- *Fertility*
		- *Nitrogen*
		- *Asian turf grass counsel and PACE*
		- *USDA tool kit*
		- *Organics vs natural sources of chemicals (nitrogen)*
			* *Stakeholder knowledge*
	+ *Importance of nickel for urea.*
	+ Program discussion
	+ Viability of South joint program
		- No, different states have different requirements
	+ Business meeting
		- Attendance
		- 3-4 member steering committee
		- NTEP reports—Jason
	+ Grassology
	+ Pre-emergence failure
	+ Low sod supply
	+ Nematodes
	+ Tour of field
	+ Winter damage and recovery
		- Healthy going in , healthy coming out
		- Zoysia
		- Increasing mowing height in the Fall
		- Covers
		- Prediction models
* *NTEP Report (Jason Kruse)*
	+ National Arboritum
		- Ways to raise money to cover next 4 years
		- Grassroots installation
			* Engage public
			* Traveling show?
	+ New modified grasses
		- Bypass regulation
	+ Cool-season grasses
		- Export market
		- GMOs
	+ USGA update
		- Grant money
			* Project funding
		- Water
		- Agronomist retiring
		- Taking turf out
		- War season breeding in California
		- Two surveys
			* Water and fertilizer
			* 80 thousand per survey
		- Shelters for projects
* *2016 Site Selection / Secretary Election*
	+ History
		- 2nd or 3rd week of June
		- At the beach?
* Potential states
* Texas
* Alabama
* Louisiana
	+ Secretary
		- Dr. Ben Wherley
	+ **Alabama, 2nd week of June**
	+ Landgrantimpacts.org
		- No increase in capacity funding
	+ Impact discussion for next meeting
	+ Mission statement
		- Information exchange relevant to turfgrass extension and research issues
		- Cultivar development, drought resistance, pest management
		- To foster the discussion and exchange of information and ideas related to turfgrass extension and issues.
* *Adjourn*

Urban Extension Programs

*Matt Elmore*

* Discussion
	+ What causes a lack of visibility in urban areas?
	+ Do we desire more visibility?
	+ Successful programs
	+ New strategies to increase visibility
	+ Role of Ext. specialist in more traditional extension programs
* Urban/suburban visibility
	+ Not a new problem
	+ Turf interaction
	+ Homeowners source of information
		- Family, magazine, retailer, levels, ads, company and extension
	+ Problems
		- Do not have time to personally engage all clientele
			* Agents spread thin
			* Lack of funding
			* Young people
		- Limited funding
		- Topics are not “cutting-edge”
	+ Potential benefits
		- Impact
		- Lawn and patio shows
	+ Audience issues
	+ Florida Friendly Landscape Program
	+ Engaging athletic field managers
		- Dave Han—Auburn
		- Program to engage coaches that manage fields. More effective in rural areas, moving towards urban areas.
	+ SAFE Program in Texas
		- Integrating athlete safety, water conservation, and other agronomic principles
		- 7 million in DFW area
	+ Georgia BMP Template
		- Water-use efficiency/conservation plan
		- Measurable impact
	+ OSU water program
		- Funding, measurable impact
	+ Partnership with industry
		- Fertilizer signs in Calloway’s Nursery
		- 18 locations in Dallas metroplex
		- Sell about 20k bags/year
	+ Social Media
		- Extension
		- Conversation
		- Radio shows?
	+ Visibility
		- Extension factsheet🡪youtube
			* Multi-state Factsheets
				+ Utilize expertise of different specialist
				+ Administrative support?
	+ Low-input lawn management
	+ Role in master gardener program
		- Value?

Turf Weed Control Update

*Matt Elmore*

* Herbicide resistance
	+ Reported at nearly 60% of golf courses
		- ALS and mitotic inhibitors
	+ Roundup, glyphosate, PSll inhibitors, Mitotic inhibitors, ALS inhibitors
* Texas
	+ Collected 25 populations from different courses with suspected resistance
* International Survey (HEAP)
	+ Multiple resistant populations
* Indaziflam
	+ Movement still an issues
	+ Fall recommended
* SureGuard
	+ Flumxazin
		- Ppo inhibitor
		- Movement an issue
		- Labeled in dormant form season turf
* Vary mode of action
	+ Code
		- HRAC
		- WSSA
* New herbicide drought
	+ Look at Ag strategies
		- Packaged products
			* ALS
			* HPPD
			* Chloroacetamide
		- MSMA replacements
			* Dallisgrass
				+ Topramezone effectiveness
			* Goosegrass
				+ Pylex
				+ Making triazines cool again?
				+ Will they label in Bermuda, paspalum and St. Augustine?
			* Sandbur
				+ Pre+Post combinations for control
* Methiozolin
	+ EUP program
	+ Materials submitted to EPA
	+ Mechanisim for selectivity
	+ Injury report
		- Rutgers
* Khakiweed
	+ TAMU TTU collaboration
	+ Problem in West Texas
* Off-types
	+ Flow cytometry
		- 52 samples are triplois hybrids
		- Mutations of dwarf burmuda grasses
* NCSU fate research
* Other issues
	+ Bermuda grass control in everything
	+ Annual bluegrass control
	+ Broadleaf signalgrass

Break

Distance Education

*Joey Young*

* University promotion?
	+ Comes in waves
	+ Florida
* Extension
* AgIdea
* Online classes
	+ Filmed lectures
	+ Switch view
	+ Chunk lectures
		- 5 minute videos
	+ 5-10 minute alarm
	+ Term glossary
* Interactivity
	+ Discussion board
	+ Real time discussion
	+ Blackboard
* Accessibility
	+ Captioning

Innovative Instruction Techniques

*Brandon Horvath*

* Students today
	+ Millennials
		- Lazy
		- Tech savvy
			* Just because they use technology doesn’t mean they can actually use it
* Enrollment
	+ Visibility problems
		- Posters from marketing program
		- Careers that never stop growing
		- Guerilla marketing
			* Sod the homecoming rock
	+ Goals
		- Increase enrollment
			* Was going down -18, now ~25
			* Goal about 35
		- Increase visibility
			* Athletic
			* Placement of ad materials on campus
			* Placements around town
				+ Banners
* Flipped classroom and game dynamics
	+ Put lecture in video, assign as homework. Homework comes into class.
	+ Background
		- Tired of students doing ‘grade calculus’
		- Wanted to find something that shifted responsibility back to students
		- “I love teaching, and not unlike Stephen Brookfield, Ive been there…”
	+ Flipping with FIZZ
		- Dr. Lodge McCammon
		- FIZZ Flipped Classroom
		- Blooms Taxonomy
* Implementation
	+ White board pieces
	+ YouTube videos
	+ Questions
* Game dynamics
	+ Level-up system
	+ Challenges, not homework
		- Graded on binary system
		- Optional
		- Glossary challenge
		- Twitter challenge
			* Post things from class
		- Missed questions challenge
	+ Snow day
		- 8 showed up, 4 did not
		- Worth 25 points
		- Immediate takeaways
			* Can be overwhelming
			* Lots of technology available
			* Doesn’t mean you have to use it
			* Onebutton studio
				+ Free app
				+ In app purchases

Lunch

State Reports (KY, LA, MS, NC, NM)

*Various State Rep’s*

* Louisiana
	+ Moving forward despite budget challenges
	+ Research
		- Two grad students last year
		- 3 will finish this year
* Projects
* Funding
* Teaching
	+ - 8-10 students
		- 2 different concentrations
			* Turf landscape
			* Horticulture
			* Extension
			* Personnel
			* Publication being updated
			* Conference continues
* Mississippi
	+ Personnel
		- New hires
	+ Grad students
		- 3
	+ Awards
	+ Conferences
		- Deep south turf expo
			* Biloxi, Nov 12
		- Field day
			* Aug 25th
	+ NTEP
		- Tall fescue
		- Bermudagrass
	+ Teaching program
		- Changes
			* Intro to turf class
				+ 70-80 students
				+ Golf management students
* North Carolina
	+ Teaching
		- Aging faculty
		- Staff
			* 16
		- 14 grad students
		- 33 4 year students
		- 32 two year students
	+ Decline
		- University policies
	+ Honors and awards
	+ Turf files
		- Updates
	+ Conferences
		- 8
		- Sod producers meeting
	+ Short-course
		- 5 day instruction
		- Extension and industry people
		- Cert program
	+ Field days
		- Raleigh, 12th August
			* Lawn care industry
			* 750-850
		- Sandhills
			* 100
	+ NTEP trials
	+ Publications
		- 30 refereed articles
		- 32 extension popular press publications
* Oklahoma
	+ Hort department
		- 6 grad students
		- 10 undergraduates
	+ OSU-OKC
		- 2 year program
		- 9 students
	+ Field day
	+ Turf conference
* Tennessee
	+ 7 faculty
		- Research and extension specialists
		- Grad students
			* 9
	+ Honors and awards
	+ Field day, Sept 12
	+ Conferences
	+ Funding issues
		- Charged for plot space
	+ Publications
* Texas
	+ Faculty
		- Dallas Center
	+ Texas Tech
	+ Carleton State
		- Course changes
	+ Grad Student
		- A&M
			* 8
	+ Student
		- 35
	+ Honors and awards
	+ Updates to Aggie Turf website
	+ TTUTurf social media
	+ State turfgrass conferences
	+ Field Day
		- Homeowner field day
			* 200 registrants
		- Texas Tech field day
			* July 15th
		- TAMU field day
			* October
	+ NTEP Trials
	+ Course
		- Sports field construction
	+ Turf-field laboratory
* South Carolina
	+ Faculty
		- 7 faculty
		- 5 actively teaching
	+ Athletics connection
	+ New president
		- September 2014
		- Ag guy
		- Provost
			* From West Virginia
	+ Agricultural and Environmental sciences department
		- 60 faculty
	+ New hires
		- New dean
		- New director of extension
		- Positions
			* Soil ecologist
			* Nutrient Manager
	+ Extension
		- Reestablishment
	+ Students
		- 20
		- Grad
			* 15
	+ Field day
		- Alternate schedule
		- Moved to April
		- Bluegrass control Field day
			* April
	+ Conference partnership
	+ Walker course
		- Rated 14th for collegiate golf courses
		- Offering tours
		- Renovation
	+ Industry
		- Round for research
		- 8th-21st
	+ Awards and Honors

Turfgrass Light Requirements Research

*Jason Kruse*

* Effect of shade intensity and duration on warm-season turfgrass growth and development
* Experiment 1
	+ Turfgrass cultivars
	+ Temperature
		- Three different temp regimens
			* Summer
				+ 35, 20 degrees C
			* Spring
				+ 30, 15 degrees C
			* Winter
				+ 25, 10 degrees C
		- DLI requirements by season
* Experiment 2
	+ Instruments
		- Spectrum technologies DLI 100 light meter
		- Measures and complies light intensity for entire day
	+ Determine viability
	+ Experiments set up in various places around putting greens
		- DLM vs QLS
		- Issues in southwest with too much light
* Experiment 3
	+ Mowing height
	+ Greenhouse study
		- Bermuda and paspalum
	+ Green vs fairway
		- Relationship between cut and light requirements
* Spreadsheet
	+ DLI curve available
* Shade structure
	+ Research at UofA
	+ Light meters underneath
	+ Over-seeded vs non-over-seeded
		- Various shade situations
	+ Athletic field setting, minimum DLI requirement
* Minimum light for bermudagrass
	+ Lawn or rough
		- 22.0 mol/m2/day
	+ Fairway or sports turf
		- 27.0 mol/m2/day
	+ Greens
		- 33.0 mol/m2/day
* Discussion
	+ Temperature gauges
	+ Light quality
	+ Humidity
	+ Research suggestions
	+ Collaboration

Turfgrass Water Use Research

*Mike Richardson*

* Current initiatives in drought research in the southwest
	+ SCRI warm season breeding project
	+ USGA/NTEO water use study
		- Funding
			* 100,000 PER YEAR FROM 5 YEARS
			* Additional funding through NTEP entry fees
			* Will seek additional finding from organizations
		- Current status
			* USGA wants water use data for species and cultivars
			* Developing alternative protocols for conducting studies
				+ Chronic drought stress

Water use of drought-tolerant turfgrass under chronic stress

Gallons of water used over duration of study

* + - * + Actual water use
				+ Acute drought stress
			* Early money can be used to build drought structures at university sites
		- Start date
			* Fall 2015 (ambitious)
		- Structures
			* Rainout used for turfgrass screening
			* Full-time maintenance
			* Expensive
			* Fixed roof rainout
				+ Costs less
				+ Light reduction

7%

* + - * + Moveable

Gutters and endcaps

4 mm plastic

* + - * + http://www.smallfarmtools.com/pages/pipe-skid-tunnels
	+ Turfgrass Water Conservation Alliance
		- Not just companies and private plant breeders
		- Water authorities
			* They set the rules
		- Benefits
			* Information
				+ Newsletter
		- Membership is free for university people
		- Founded by 4 seed companies, have since added.
			* Work together to establish guidelines and a standard for drought-tolerant labeling
		- Determine what grasses in trials qualify for drought-tolerant label
		- Issues
			* 70% drought tolerance in mixes
		- Discussion on opening approval to everyone

3:15 – TBD Optional SCRI Tour / Dinner in Stillwater