

Program

AgroEnviron 2016

**10th International Symposium
on Agriculture and the Environment**

**Purdue University
West Lafayette, Indiana, USA
May 23-27, 2016**



AgroEnviron 2016

Organizing Committee

Dennis Flanagan, chair
Chi-hua Huang
Bernie Engel
Darrell Norton

Purdue Conferences

Ethan Kingery

Scientific Committee

P.C. Abhilash – India
Thomas Cochrane – New Zealand
Frederic Darboux - France
Alfredo De Campos – Brazil
Gunay Erpul - Turkey
Donald Gabriels - Belgium
Jose Gomez – Spain
Andreas Klik – Austria
Deyanira Lobo - Venezuela
Carlos Mello – Brazil
Julio Alegre Orihuela – Peru
Hasan Ozturk – Turkey
John Quinton - UK
Eusebio Ventura – Mexico
Saskia Visser - Netherlands
Bofu Yu – Australia
John Zhang – USA
Fenli Zheng – China



AgroEnviron 2016 and the 7th International Symposium on Gully Erosion are being co-hosted by Purdue University and the USDA-ARS National Soil Erosion Research Laboratory. The symposia are being held concurrently with full cross-over registration privileges.

AgroEnviron 2016

May 23-27, 2016

Purdue University, West Lafayette, Indiana, USA

Monday, May 23, 2016

Monday, May 23, 2016

Registration

7:30 am – 9:30 am

STEW 2nd Floor

Monday, May 23, 2016

8:30 am – 5:30 pm

STEW Rooms 202-218

Pre-conference training workshops

1. WEPP: Water Erosion Prediction Project model **STEW Room 202**
2. WEPS: Wind Erosion Prediction System model **STEW Room 206**
3. AnnAGNPS: Annualized AGricultural Non-Point Source **STEW Room 214D**
4. RUSLE2: Revised Universal Soil Loss Equation 2 (a.m. only) **STEW Room 218AB**
5. Soil Erosion Process Research Technology Showcase – afternoon only at NSERL

Monday, May 23, 2016

Registration

5:30 pm – 7:00 pm

PMU Ballroom

Monday, May 23, 2016

6:30 pm – 8:30 pm

PMU Ballroom

Welcome reception – Purdue Memorial Union Ballroom (*with cash bar*)

Tuesday, May 24, 2016

Tuesday, May 24, 2016

Registration

7:30 am – 9:30 am

STEW 2nd Floor

Tuesday, May 24, 2016

8:30 am – 9:30 am

STEW Room 202

Opening ceremony

Welcome to AgroEnviron 2016 by Chair Dennis Flanagan

Welcome to Purdue University by Dean of Agriculture Jay Akridge

Remarks by Jane Hardisty, Indiana NRCS State Conservationist

Remarks by Fenli Zheng, World Association of Soil and Water Conservation

Tuesday, May 24, 2016

9:30 am – 10:30 am

STEW Room 202

Plenary Session 1: Challenges in Land Management

Speaker: **Dr. Donald Gabriels, Ghent University, Ghent, Belgium**

Presentation: **“Management of Drylands: Lessons Learned”**

Coffee Break

10:30 am – 10:45 am

Tuesday, May 24, 2016

10:45 am – 12:30 pm

STEW Rooms 202 & 206 (oral)

STEW Room 214 AB (posters)

Concurrent Technical Presentation Sessions

(Short oral presentations followed by poster viewing and discussion.)

Technical Session 1a - STEW Room 202 - Session Moderator: Dr. Hasan Ozturk

1108	Geochemistry of soil solution and canal waters in Plinthosols under irrigation by flooding	Alfredo De-Campos
1052	Rebuilding soil health with forest industry residuals	Xiaojun Zhao
1021	Initial selection of forest species for the rehabilitation of soils disturbed by petroleum extractions in the Ecuadorian Amazon	Jaime Villacis
1122	Effect of cover crops and nitrogen application timing on nutrient loading through subsurface drainage	Shalamar Armstrong
1066	Characterization of cover crops for use in olive groves and vineyards in certified systems under Mediterranean conditions	Jose Gomez
1116	Cover crops, soil health, and resiliency	Eileen Kladviko
1128	Producing more rice with less greenhouse gas emissions from paddy fields	Weijian Zhang
1078	Effects of land use change on soil erosion in small watershed of Loess Hilly Region, China	Yafeng Wang
1103	Scaling of livestock heat stress with global mean surface temperature change	Jonathan Buzan
1040	Reducing energy costs for the pasteurization of corn and wheat straw bales for producing mushrooms in Mexico with a solar oven made with recycled materials	Israel Ruiz-Gonzalez
1042	Indirect methods of estimating Leaf Area Index (LAI) in broadcast-seeded paddy rice fields	Nebiye Musaoglu
1132	Regional soil erosion assessment based on field survey and geostatistics	Shuiqing Yin
1004	Droughts in southern Minas Gerais, southeastern Brazil: Understanding the last 100 years	Darrell Norton

Technical Session 1b - STEW Room 206 - Session Moderator: Dr. John Zhang

1055	Agronomic and environmental effects of reducing P fertilization for four-year rice-wheat rotation field experiment in the Taihu Lake region of southern China	Shenqiang Wang
1076	Regeneration of valuable materials from poultry farm wastes	Atila Caglar
1077	The ecological awareness imparted by civil foundation for sustainable environment	Bahattin Aydinli
1089	The attitudes on sustainable solid waste recycling for environmental education policy	Sefa Pekol
1125	The investigation of various aspects of sustainable environmental behavior	Kadir Karatekin
1085	Variability of sediment-fixed nutrient export from a micro-watershed in northern Ethiopia	Gebreyohannes Girmay Woldetensai
1043	Dynamics of aggregate stability under drying and wetting cycles for yellow soil in China	Bin Wang
1048	Trends and variability of daily temperature extremes during 1960–2012 in the Yangtze River Basin, China	Fenli Zheng
1063	Impacts of stone bunds on soil loss and surface runoff: A case study from Gumara Maksegnit watershed, northern Ethiopia	Andreas Klik
1093	Effects of potential land use changes on runoff and soil loss under subtropical conditions	Jamil Anache
1137	Mitigating the transfer of sediment and pollutants from soils to water	John Quinton
1028	Effect of vegetated buffer strips on flow hydraulics and sediment deposition and delivery	Sina Akram
1096	Development of a landscape unit delineation framework to assess water transfers across landscape units using SWAT	Hendrik Rathjens

Lunch on your own 12:30 pm – 1:30 pm

Tuesday, May 24, 2016 1:30 pm – 2:30 pm

STEW Room 202

Plenary Session 2: Agriculture and the Environment

Speaker: **Dr. Tom Cochrane, University of Canterbury, Christchurch, New Zealand**

Presentation: **“Programs to Resolve Agricultural and Water Quality Issues - the Kiwi Perspective”**

Coffee Break 2:30 pm – 2:45 pm

Tuesday, May 24, 2016 2:45 pm – 4:30 pm

**STEW Rooms 202 & 206 (orals)
STEW Room 214AB (posters)**

Concurrent Technical Presentation Sessions

(Short oral presentations followed by poster viewing and discussion.)

Technical Session 2a - STEW Room 202 - Session Moderator: Dr. Bofu Yu

1050	Conservation of aquaculture wastewater and nutrients through vegetable crop production	Teng Yang
1069	Utilization of water resources and sustainable crop production	Hasan Öztürk
1086	Pedotransfer functions for estimations of soil moisture retention and hydro-limits: The case of Abreha Atsbeha in northern Ethiopia	Gebreyohannes Girmay Woldetensai
1110	Grey water treatment with constructed wetlands for backyard crops irrigation	Marcela Duhne-Ramírez
1033	Relationships between tillage systems associated with previous crops and effects on corn productivity in 14 years of long-term experiments in northeastern Brazil.	Alceu Pedrotti
1036	Soil quality in riparian areas of the Cerrado Biome as affected by deforestation followed by citrus cultivation	Alfredo De-Campos
1095	Comparison of growth curves and seasonality parameters of main field crops in a high elevation mountain area based on TIMESAT program.	Xia Zhao
1010	Soil erosion under climate change – a high-resolution projection on catchment scale until 2100	Anne Routschek
1068	Use of conceptual water balance model to explore the impact of different soil management on water availability in olives and vineyards under different climate conditions	Jose Gomez
1104	Future heat stress projections and their effects on US livestock	Emma McCabe
1025	Resizing plots and terrace spacing in sugarcane areas	Max Well de Rabelo
1099	Velocity of simulated raindrops at wind tunnel measured by different technologies	Pedro Luiz Lima
1008	Determination of land productivity dynamic trend for land degradation in two adjacent micro catchments	Orhan Dengiz

Technical Session 2b - STEW Room 206 - Session Moderator: Dr. Eusebio Ventura

1070	Solubility and plant availability of nutrients as affected by FGD gypsum and glyphosate application under different Redox conditions	Darrell Norton
1024	Estimation of soil erosion using fallout radionuclide Cs-137 Technique	Akram Teshayev
1018	A new approach of using multiple composite fingerprints to apportion sediment sources	John Zhang
1067	Iron oxides as tools to assess water erosion processes	Jose Gomez

1100	Sediment fingerprinting in nested watersheds cropped to eucalyptus	Miguel Reichert
1092	Deposited sediment source fingerprinting in a tropical environment	Pedro Luiz Lima
1136	Towards quantitative real time tracing of soils and sediment: Using fluorescent soil particles and image analysis	John Quinton
1031	Application of different indicators for assessment of dynamic soil erosion rates within the Russian Plain during recent decades	Valentin Golosov
1064	Investigation of the impact of stone bunds on erosion and deposition processes combining conventional and tracer methodology in the Gumara Maksegnit Watershed, Northern Highlands of Ethiopia	Andreas Klik
1045	Research progress on conservation tillage project in Guangdong, China	Yinggang Ou
1114	Estimating phosphorus removal by steel slag in a flume injection experiment	Isis Chagas
1059	Using nutrient data and dye tracing to assess subsurface connectivity and contaminant transfer patterns in Grayson-Gunnar Cave, Monticello, KY.	Gilles Tagne
1098	Applying hyporheic exchange transient storage concept to quantify sediment transport processes on the landscape	Chi-hua Huang

Tuesday, May 24, 2016 4:30 pm – 5:30 pm

Breakout Group Discussion Session 1

Participants will participate in one of the four breakout sessions:

Challenges in land management	STEW Room 202
Agriculture and the environment	STEW Room 206
Coping with natural disasters	STEW Room 214C
Science and technology gaps	STEW Room 214D

Participants are encouraged to move between sessions during the one hour time.

Wednesday, May 25, 2016

Wednesday, May 25, 2016 7:30 am – 3:30 pm (Load buses @ 7:15 a.m. west side Stewart Center)

Conservation innovation tour: As farming practices change, new environmental issues emerge. In this tour, attendees will see how researchers and farmers tackle emerging water quality concerns with potential remediation practices and technologies. We have arranged through the Indiana State NRCS office a stop at a family farming operation near Indianapolis where a number of conservation practices have been implemented, and monitoring of the effects of these practices is conducted by the USGS and Indiana University – Purdue University - Indianapolis. Finally, a social interest stop at the Indianapolis Motor Speedway is also planned, before returning to Purdue University. The tour will involve some amount of walking along and through agricultural fields, so appropriate shoes or boots are needed. If rain is forecast, be sure to bring along a water repellent coat and/or an umbrella. A box lunch will be provided.

Wednesday, May 25, 2016 4:00 pm - 6:00 pm

National Soil Erosion Research Laboratory (NSERL) Open House. This USDA-ARS facility is the home of many significant research endeavors focused on the fundamental processes of soil erosion and rill and gully development and evolution. Conference participants will be given a tour of this internationally-recognized laboratory and a demonstration of recent and on-going research endeavors using specially-designed experimental facilities and equipment. Light refreshments will be served.

Thursday, May 26, 2016

Thursday, May 26, 2016

8:30 am – 9:30 am

STEW Room 202

Plenary Session 3: Coping with Natural Disasters

Speaker: **Dr. Kazutoshi Osawa, Utsunomiya University, Tochigi, Japan**

Presentation: **“Sediment and Radiocesium Runoff after Fukushima Accident”**

Coffee Break

9:30 am – 9:45 am

Thursday, May 26, 2016

9:45 am – 11:30 am

Concurrent Technical Presentation Sessions

STEW Rooms 202 & 206 (orals)

STEW Room 214AB (posters)

(Short oral presentations followed by poster viewing and discussion.)

Technical Session 3a - STEW Room 202 - Session Moderator: Dr. Jose Gomez

1060	Evaluation of a combined reservoir tillage system for soil and water conservation in rainfed farming land	Leandro Velazquez-Luna
1074	Long-term watershed monitoring - do's and don'ts	Stanley Livingston
1071	Blind inlets as conservation practices to improve water quality	Javier Gonzalez
1091	Removal of boron from well waters for irrigation of agricultural lands	Eusebio Ventura
1130	Improving sorghum productivity in waterlogged Vertisols in North Gondar, Ethiopia	Andreas Klik
1034	Impacts of agricultural use on organic matter of Histosols in the Cerrado in the north of Minas Gerais State, Brazil	Alceu Pedrotti
1054	Short-term effects of biochar addition on nitrification, ammonia oxidizer and nitrous oxide emissions in two acid red soils	Xu Zhao
1014	Potential release of macronutrients and C sequestration of different land use systems in the Peruvian Amazon	Julio Alegre
1081	Climate-smart soil fertility improvement techniques increase grain yield in the Ethiopian highlands	Gebreyohannes Girmay Woldetensai
1079	The influence of land use projection uncertainty on flow and sediment estimations: A case study from the Mekong Basin	Thomas Cochrane
1030	Impact of sampling approach and hydraulic topsoil properties on soil erosion estimates by the fallout radionuclide ⁷ Be	Nick Ryken
1049	A laboratory study on rill network development and morphological characteristics	Fenli Zheng
1061	Relational analysis of aggregate size distributions and soil organic carbons of the eroded sediments	Gunay Erpul

Technical Session 3b - STEW Room 206 - Session Moderator: Dr. Alfredo De-Campos

1117	USDA-NRCS WEPP implementation project	Dennis Flanagan
1101	Automated testing of WEPP web services	Jim Frankenberger
1119	CLIGEN database update and its effects on soil erosion estimations using the WEPP Model	Josept Revuelta-Acosta
1106	Rapid response tools and datasets for hydrological modeling	Mary Miller

1120	The Daily Erosion Project: An overview and summary	Brian Gelder
1015	Effect of EU's Common Agricultural Policies on erosion and soil organic carbon balance, Italy.	Pasquale Borrelli
1121	2016 WEPS release update	Larry Wagner
1111	The Soil Conditioning Index model service	Jack Carlson
1016	Payment for watershed services: It's possible, but for which conservation policy on fresh water and ecosystem services?	Alexandre Adrade Silva
1090	Effects of droughts on two Indiana river basins' water quality and quantity	Nina Omani
1112	Climate change and bioenergy crop production impacts on watershed sustainability	Cibin Raj
1127	Predicting future changes of rainfall erosivity and hillslope erosion across south-east Australia	Xihua Yang
1017	Acceleration of wind erosion on the Tibetan Plateau due to future climate change	Benli Liu

Thursday, May 26, 2016

11:30 am – 12:30 pm

STEW Room 202

Special Presentation: "Soil Health Management Systems"

Speakers: Shannon Zezula and Tony Bailey, USDA-NRCS, Indianapolis, Indiana, USA

Abstract: Effectively implementing Soil Health Management Systems including No-till, Cover Crops, Nutrient Management, Integrated Pest & Weed Management, Precision Farming and Conservation Buffers has positive impacts on reducing erosion, and improving water quality and quantity, and soil health. This presentation will demonstrate how Soil Health Management Systems are being promoted to Indiana farmers through NRCS and partner programs.

Lunch on your own

12:30 pm – 1:30 pm

Thursday, May 26, 2016

1:30 pm – 2:30 pm

STEW Room 202

Plenary Session 4: Science and Technology Gaps

Speaker: Dr. Gunay Erpul, Ankara University, Diskapi, Ankara, Turkey

Presentation: "Wind and Water Erosion Processes and their Interactions"

Coffee Break

2:30 pm – 2:45 pm

Thursday, May 26, 2016

2:45 pm – 4:30 pm

**STEW Rooms 202 & 206 (orals)
STEW Room 214AB (posters)**

Concurrent Technical Presentation Sessions

Short oral presentations followed by poster viewing and discussion

Technical Session 4a - STEW Room 202 - Session Moderator: Dr. John Quinton

1062	Comparison of land suitability for three different irrigation methods determined through a parametric approach	Orhan Dengiz
1080	Quantifying water savings with windbreaks	Thomas Cochrane
1107	Application of the WEPP model to simulate the water balance of a forested watershed, interior US Pacific Northwest	Anurag Srivastava

1027	Duck powered organic rice and duck value chain development for sustainable food production, environmental protection and inclusive growth in the Philippines	Jose Apollo Pacamalan
1035	Aspects of agro-environmental sustainability in the perimeter irrigated Piauí in Lagarto (Sergipe State) northeastern Brazil	Alceu Pedrotti
1056	Effects of crop management system on arbuscular mycorrhizal fungi (AMF) diversity, and its influence on soybean tolerance to water stress	Liseth Zubieta
1044	Impact of tillage management on aeolian sediment transport: A multi-source regression analysis using effective plant cover (EPC) factor	Amin Nouri
1118	Cropping system, agroecological zone, and nitrogen use efficiency effect on greenhouse gas mitigation for biodiesel feedstock production	Ashley Hammac
1057	Climate change interactions with agriculture, forestry sequestration, and food security	Luis Pena-Levano
1097	Impact of climate change on WEPP runoff and soil loss predictions in Iowa	Nayereh Ghazanfarpour
1124	Assessment of climate change impacts on water quality loads in the Beasley Lake watershed, MS	Lindsey Yasarer
1105	Can the cohesive strength meter be used to estimate critical shear stress of an agricultural and prairie soil?	Edward Boswell

Technical Session 4b - STEW Room 206 - Session Moderator: Dr. Julio Alegre

1002	A risk-based vulnerability approach for rangeland management	Mark Nearing
1041	Effects of conservation practices on phosphorus loss reduction from an Indiana agricultural watershed	Qingyu Feng
1102	Quantifying the potential impacts of climate change on trends in extreme weather for Great Lakes agriculture	Natalie Chin
1037	Absorption of copper from Oxisols by <i>Brachiaria decumbens</i> roots	Alfredo De-Campos
1109	A mirrored telematics-SCADA System using global system for mobile communications and Short Message Service	Israel Ruiz-Gonzalez
1046	Effects of rainfall regime and its character indices on soil loss at loessial hillslope with ephemeral gully	Ximeng Xu
1047	Active stage gully morphological characteristics in the Loess hilly-gully region based on 3D laser scanning technique	Chao Qin
1113	Evaluation of electrical conductivity as a surrogate for solute concentration in tracer injection experiments	Isis Chagas
1084	Impact of vetch cover crop on runoff, soil loss, soil chemical properties and yield of chickpea in North Gondar, Ethiopia	Andreas Klik
1073	Hydrologic and biogeochemical controls on phosphorus export from western Lake Erie tributaries	Mark Williams
1072	Sand detachment with shallow asymmetric corona formation under well-developed lateral jets of wind-driven raindrop impacts	Donald Gabriels
1150	Comparison of detachment rates from purple and loess rills	Xiaoyan Chen

Thursday, May 26, 2016 4:30 pm – 5:30 pm

Breakout Group Discussion Session 2

Participants will participate in one of the four breakout sessions:

- Challenges in land management
- Agriculture and the environment
- Coping with natural disasters
- Science and technology gaps

- STEW Room 202
- STEW Room 206
- STEW Room 214C
- STEW Room 214D

Participants are encouraged to move between sessions during the one hour time.

Thursday, May 26, 2016

6:30 pm – 9:00 pm

PMU Ballroom

Closing Ceremony and Conference Banquet – Purdue Memorial Union Ballroom

Speaker: **Dr. Otto C. Doering III, Professor, Agricultural Economics Department, Purdue University, West Lafayette, Indiana, USA**

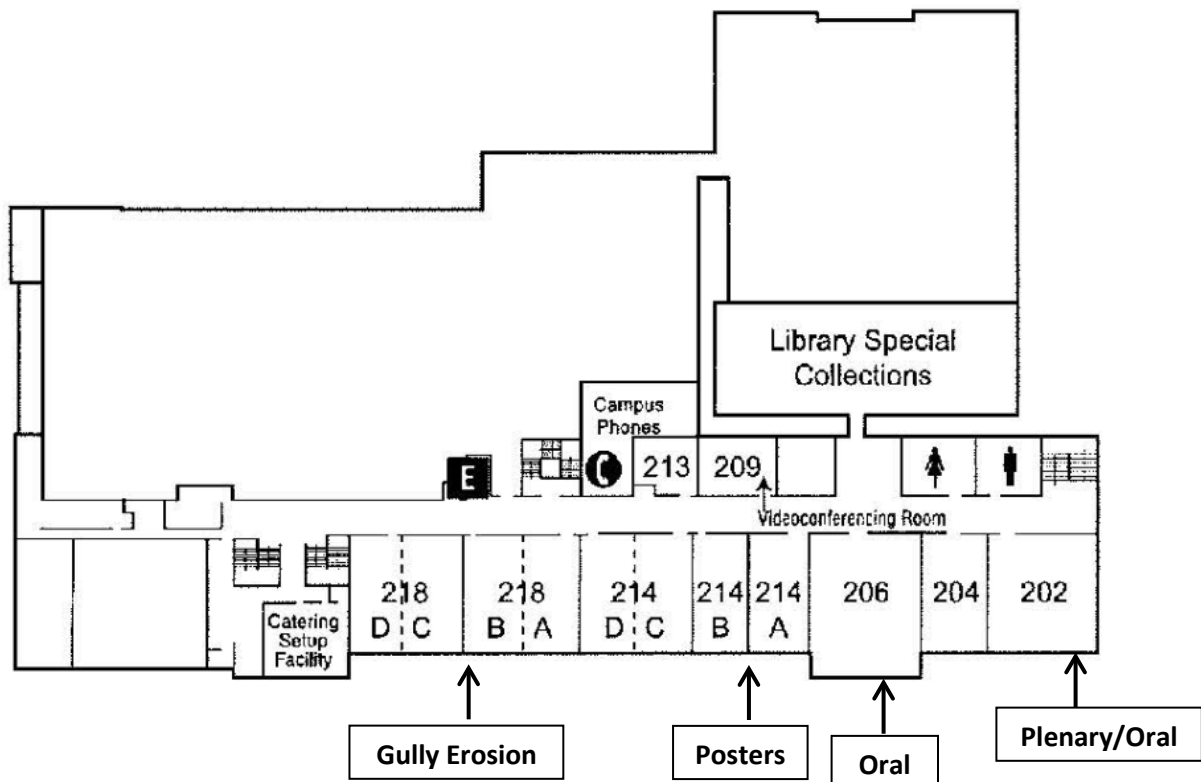
Topic: **"Is Conservation Economic & Does It Matter?"**

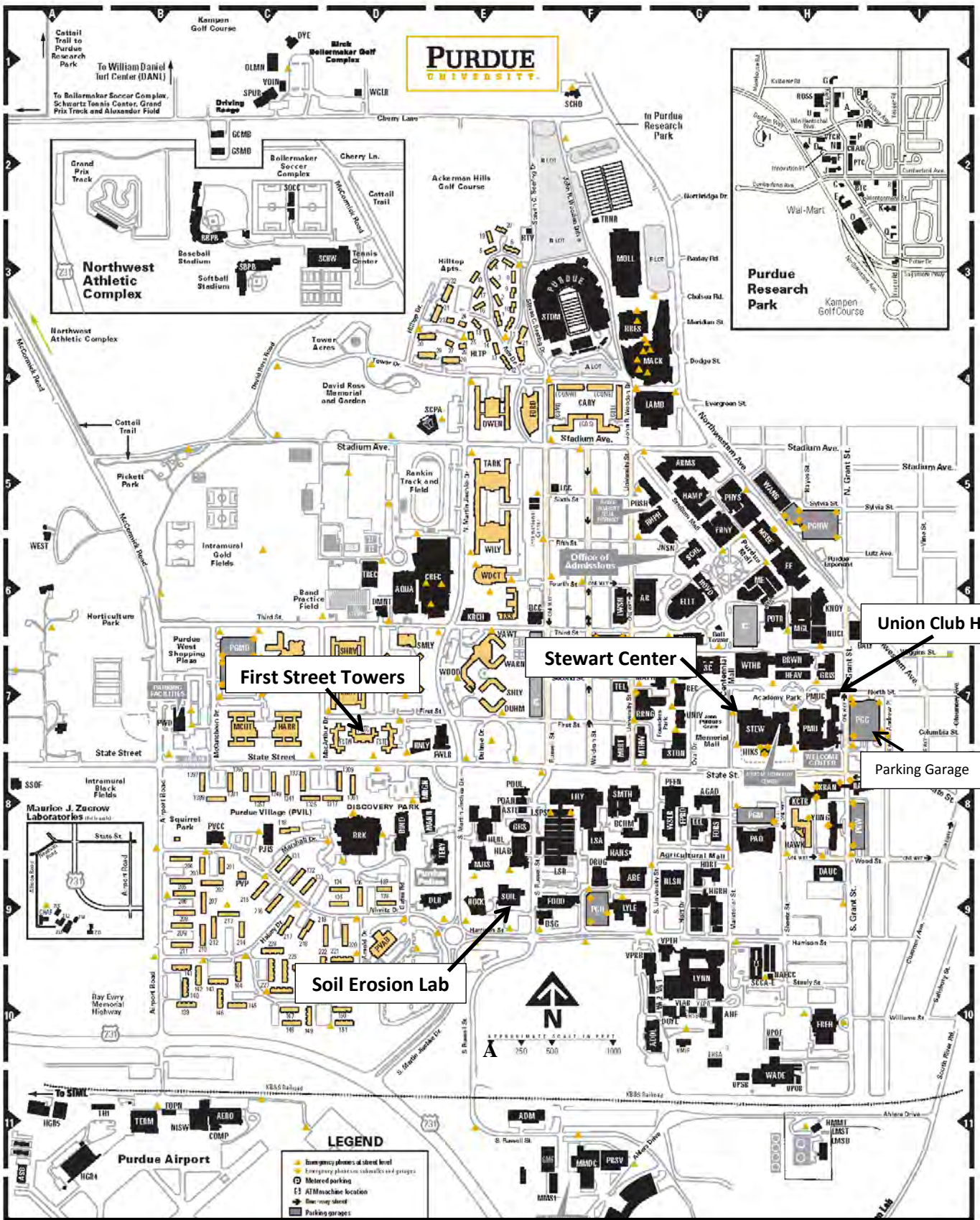
Friday, May 27, 2016

Friday, May 27, 2016

No activities planned – travel day for participants to return home. Participants remaining in the Indiana area may wish to visit some other local cultural or historical sites. For more information on nearby sites to visit, contact the symposium organizers.

Map of Stewart Center – 2nd Floor where most symposium sessions will occur.





PMU – Purdue Memorial Union; STEW – Stewart Center; FST – First Street Towers; SOIL – National Soil Erosion Lab