MINNESOTA GIS/LIS CONSORTIUM
TWENTY-FIFTH ANNUAL CONFERENCE & WORKSHOPS

“Charting Our Future” 46° 46' 52.57” N
92° 05' 34.97” W

OCTOBER 7-9, 2015
DULUTH ENTERTAINMENT & CONVENTION CENTER
DULUTH, MINNESOTA

Preliminary Program
CONFERENCE HIGHLIGHTS

This program announces the 25th Annual Minnesota GIS/LIS Consortium Conference and Workshops “Charting our Future” October 7 to 9, 2015 in Duluth, Minnesota. The event will feature national and local keynote speakers, fifteen instructor-led workshops, technical sessions, panel discussions, technology demonstrations and project updates. All are geared toward students and professionals interested in learning more about geographic information systems and land information systems technology in Minnesota and beyond.

Highlights include:

• 17 instructor-led workshops that feature a variety of topics
• Esri Hands on Lab; The HOLL (Hands-On Learning Lab) is a training resource provided and developed by Esri Training Services. The lab is an excellent way to introduce ArcGIS® software users to a variety of Esri® solutions and training opportunities while learning to use Esri software.
• GIS instruction and workshops for K-12 teachers, followed by a Networking event that will bring GIS professionals and teachers together for a chance to become Geo-Mentors.
• A vendor reception featuring complimentary hor d’oeuvres, a cash bar and a variety of prizes
• Redesigned conference session and discussion groupings to reflect the geographic and land information systems industry including: technical, asset management, custom applications, web maps, data collection, data visualization, demographics, lightning presentations, parcels, process improvement, project management, python and much more
• The student assistantship program that allows students to attend the conference in exchange for their assistance throughout the conference
• The student scholarship competition for undergraduate and graduate student competitors
• Industry and regional-specific user groups, previously named Birds of a Feather meetings
• Networking opportunities; including entertainment events and the Thursday evening event
• The Geolounge will be available to sit back, relax, check e-mail and network with other attendees.

Please join us and spread the word about Charting Our Future because the 2015 Minnesota GIS/LIS Conference and Workshops will be packed with quality learning, networking and socializing experiences!

WHO SHOULD ATTEND?

The conference program is designed to address the needs of:

• Government officials who implement GIS/LIS for a variety of applications
• Surveyors, engineers and land management specialists who use GIS/LIS technology
• Professionals who want to utilize or publish GIS/LIS data over the web
• Business, real estate, banking and insurance specialists who need to understand and access GIS/LIS data
• Public and private utility professionals who use GIS/LIS technology for infrastructure management
• Consultants who provide GIS/LIS services, hardware or software
• Professionals in precision agriculture, healthcare or other fields beginning to use GIS/LIS in their careers
• K-12 students, undergraduate and graduate students interested in the application of GIS/LIS technology
• University faculty interested in new GIS/LIS technology and research applications
• Professionals or organizations concerned with homeland security and emergency preparedness
• Managers who supervise GIS/LIS technology or staff members
• GIS/LIS professionals in any discipline

EXHIBITORS TO DATE
(as of Aug 11, 2015)

• AE2S
• Ayres Associates
• CAD Technology Center
• ESRI
• Frontier Precision, Inc.
• HERE
• Houston Engineering, Inc.
• MN DNR
• Moore Engineering, Inc.
• North Point Geographic Solutions
• Panda Consulting
• Pictometry
• Pro-West & Associates, Inc.
• The Sidwell Company
• Surdex
ABOUT THE MN GIS/LIS CONSORTIUM

The Minnesota GIS/LIS Consortium is a forum for communicating information to and improving cooperation among those interested in Geographic Information Systems (GIS) and Land Information Systems (LIS) in the state of Minnesota. Members include GIS users in local, state and federal government agencies, educational institutions, business and industry where membership is FREE. The Consortium hosts a statewide conference each year and establishes committees that are responsible for specific GIS/LIS-related issues in Minnesota. Opportunities to participate in Consortium activities are available through volunteer work with committee, conferences and workshops.

For more information on current Consortium activities and volunteer opportunities, please visit our Web site, www.mngislis.org, or stop by our booth during the conference.

25TH MN GIS/LIS ANNUAL CONFERENCE AND WORKSHOPS

Register online at www.mngislis.org.

To register for the conference, please visit our conference site at www.mngislis.org/conference and click on the ‘Registration’ link. We accept payment by credit card (Visa and MasterCard), purchase order and check.

For Payment by Credit Card:
The registration process will allow you to enter credit card information directly into a secure system for payment. Both Visa and MasterCard are accepted.

For Payment by Purchase Order or Check:
Alternatively, you can include a purchase order number with the registration or pay by check separately. Upon completion of the registration process, an invoice will be prepared based on your registration selections. For purchase order registrations, please provide a copy of this invoice to your accounts payable department. Also include a copy of the registration invoice with your check or signed purchase order (made payable to MN GIS/LIS) and mail it to:

MN GIS/LIS Consortium
1000 Westgate Drive, Suite 252 • St. Paul, MN 55114

Please note: Registrations based on purchase orders are considered complete when the purchase order number is received.

REGISTRATION FEES WILL BE AS FOLLOWS:

**Half-day Workshops**
- Payment received by Sept. 25: $125
- Payment received after Sept. 25: $160
- Payment On-Site: $170

**Full-day Workshops**
- Payment received by Sept. 25: $210
- Payment received after Sept. 25: $240
- Payment On-Site: $250

**Conference**
- Payment received by Sept. 25: $265
- Payment received after Sept. 25: $300
- Payment On-Site: $320

**Presenter**
- Payment received by Sept. 25: $220
- Payment received after Sept. 25: $300
- Payment On-Site: $320

**Student**
- Payment received anytime: $45

KEY DATES:
- Online registration opens 8/12
- Early registration ends 9/25
- Hotel Conference rates end 9/6
- Online registration closes 10/2
- Pre-Conference Workshops: 10/7
- Conference days: 10/8 and 10/9

Refunds:
Full refunds (less $40 administrative charge) will be issued with a written cancellation notice received by Sept. 7. To send a cancellation notification via fax to the MN GIS/LIS Consortium, please use 651-290-2266. Notifications received after Sept. 7 will NOT receive a refund, nor will no-shows at the conference.

Problems with Registration:
If you encounter problems registering for this event via the website, please contact us at conference@mngislis.org or call 651-203-7242.

On-site registration will be available at the conference.
## WEDNESDAY, OCTOBER 7

**7:30 a.m.**  
Conference registration and materials pickup; refreshments in lobby

**9:00 a.m. – 4:30 p.m.**  
Full-Day Workshops

**WK0019**  
LiDAR Terrain Analysis Techniques *(Horizon Rm 202)*

**9:00 – 10:30 a.m.**  
Half-Day Morning Workshops

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<tr>
<td>Getting started with ArcGIS Pro <em>(Ballroom M-N)</em></td>
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<td>Leveraging ArcGIS Online for Your Organization <em>(French River Rm 2)</em></td>
<td>Introduction to Collector for ArcGIS <em>(Split Rock Rm 1)</em></td>
<td>Intro ESRI Javascript API <em>(Split Rock Rm 2)</em></td>
<td>Enterprise SDE - The Whole Nine Yards! <em>(Horizon Rm 203)</em></td>
<td>Intermediate Python <em>(Horizon Rm 204)</em></td>
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**10:30 a.m.**  
Refreshment break, lobby

**10:45 a.m. – 12:15 p.m.**  
Full Day and Half-Day Morning Workshops Continued

**12:15 p.m.**  
Lunch

**1:15 – 2:45 p.m.**  
Half-Day Afternoon Workshops

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<td>Data Driven Pages <em>(Ballroom M-N)</em></td>
<td>Understanding Geodatabases <em>(Ballroom O)</em></td>
<td>Introduction to Python Using the ArcGIS Field Calculator <em>(French River Rm 1)</em></td>
<td>Web GIS Security <em>(French River Rm 2)</em></td>
<td>Intermediate Collector for ArcGIS <em>(Split Rock Rm 1)</em></td>
<td>ArcGIS Server 10.1 &amp; Beyond <em>(Split Rock Rm 2)</em></td>
<td>Integrating Sensors with ArcGIS Platform <em>(Horizon Rm 203)</em></td>
<td>Using Geoprocessing Services with JavaScript API <em>(Horizon Rm 204)</em></td>
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**2:45 p.m.**  
Refreshment break, lobby

**3:00 – 4:30 p.m.**  
Full Day and Half-Day Afternoon Workshops Continued

**4:30 – 6:00 p.m.**  
Wednesday Welcome Reception, Geolounge

**6:00 – 9:30 p.m.**  
Wednesday Welcome Reception Continued, Grandma’s Sports Garden

## THURSDAY, OCTOBER 8

**7:30 a.m.**  
Conference registration and materials pickup; refreshments in lobby

**8:00 a.m.**  
Conference Welcome — Gerry Sjerven Conference Chair

**8:15 a.m.**  
State of the State — Dan Ross, Minnesota GIO

**8:30 a.m.**  
Opening Keynote Session: Esri — TBD

**10:00 a.m.**  
Morning Break (Lobby), Exhibit Hall Open, Geolounge Open and Web Map & Poster Gallery Open

**10:30 a.m. – Noon**  
Concurrent sessions:

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<tr>
<td>Wetlands <em>(Ballroom L)</em></td>
<td>Forest Management <em>(Ballroom MN)</em></td>
<td>Emergency Management &amp; 911 Dispatch <em>(Ballroom O)</em></td>
<td>Field Data Collection <em>(Split Rock Rm 1)</em></td>
<td>Lightning Round I-Mapping <em>(Split Rock Rm 2)</em></td>
<td>Web Map Design <em>(French River Rm 1)</em></td>
<td>Students &amp; Young Professional <em>(French River Rm 2)</em></td>
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**Noon**  
Awards Luncheon

## WEDNESDAY, OCT-A-GLANCE

### ESRI Hands On-Lab *(Board Room)*

**Noon**  
Awards Luncheon
## 2015 GIS/LIS Conference At-A-Glance

### Thursday, October 8

#### 1:30 – 3:00 p.m.

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#### 3:00 p.m.

Afternoon break; refreshments in lobby

#### 3:30 – 5:00 p.m.

**SESSION 16** | Wildlife Health Management (Ballroom L) |
**SESSION 17** | Parcel Fabric (Ballroom MN) |
**SESSION 18** | Emergency Management-Planning & Aftermath (Ballroom O) |
**SESSION 19** | Field Data Collection & Asset Manage (Split Rock Rm 1) |
**SESSION 20** | Lightning Round II- Miscellaneous (Split Rock Rm 2) |
**SESSION 21** | Students-Graduate Competition (French River Rm 1) |
**SESSION 22** | Students-Undergraduate Competition (French River Rm 2) |

#### 5:00 – 7:00 p.m.

Exhibitor Reception, Exhibition Hall

#### 6:45 – 7:00 p.m.

Exhibitor and GIS/LIS Raffle (must be present to win), Exhibition Hall

#### 7:15 p.m.

Thursday Night Social Event, Holiday Inn

### Friday, October 9

#### 6:30 a.m.

5k Fun Run/Walk

#### 7:30 a.m.

Conference registration and materials pickup; refreshments in lobby

#### 8:00 a.m.

Exhibit Hall, Geolounge* Open and Refreshments in Lobby

#### 8:30 – 10:00 a.m.

**SESSION 24** | Data Aggregation-Address Points (Ballroom L) |
**SESSION 25** | LiDAR & Hydrology (Ballroom MN) |
**SESSION 26** | Utilities (Ballroom O) |
**SESSION 27** | A Little Bit of This, A Little Bit of That (Split Rock Rm 1) |
**SESSION 28** | Lightning Round III- Environment (Split Rock Rm 2) |
**SESSION 29** | Web Maps (French River Rm 1) |
**SESSION 30** | Education (French River Rm 2) |

#### 10:00 a.m.

Morning Break; exhibit hall closes at 10:30 a.m.

#### 10:30 a.m. – Noon

**SESSION 31** | Hydrology (Ballroom L) |
**SESSION 32** | Metadata (Ballroom MN) |
**SESSION 33** | Emergency Management-Planning & During the Emergency (Ballroom O) |
**SESSION 34** | Asset Management (Split Rock Rm 1) |
**SESSION 35** | Parcel Database Initiative (Split Rock Rm 2) |
**SESSION 36** | Government GIS (French River Rm 1) |
**SESSION 37** | Imagery/Remote Sensing (French River Rm 2) |

#### Noon

Boom Bust Boom Bust Boom: Duluth’s Development, 1856-1920 – Tony Dierckins

#### 2:00 p.m.

MN GIS/LIS Annual Business Meeting – Heather Albrecht, Board Chair
KEYNOTE SPEAKERS

ESRI
8:30 AM, Thursday, Oct. 8, 2015

The Thursday morning keynote with feature a renowned Esri representative who with help us celebrate our first 25 years, and describe where they see the next 25 years in GIS and in Minnesota.

The MN GIS/LIS Consortium will notify the membership the exact details as soon as they are available.

Tony Dierckins
Noon, Friday, Oct. 9, 2015
Boom Bust Boom Bust Boom: Duluth’s Development, 1856-1920

This presentation explores the development of Duluth, from its 1856 birth upon a “pile of rocks” at the head of the Great Lakes to its zenith as a manufacturing center and the world’s largest inland sea port, surviving a series of financial panics between immigration and construction booms. Learn how eleven townships formed, came together, split apart, joined again, and expanded into a city three miles wide and 27 miles long.

Duluth author Tony Dierckins has written or co-written over two dozen books, from the ridiculous Duct Tape books and calendars to regional histories such as Lost Duluth and Crossing the Canal, a history of Duluth’s Aerial Bridge. He has been twice nominated for the Minnesota Book Award and is the 2012 recipient of the Duluth Depot Foundation’s “Historic Preservation and Interpretation Award.” His most recent book is Historic Glensheen 1905-1930. Dierckins is also the publisher of Zenith City Online, an internet publication celebrating historic Duluth, western Lake Superior, and Minnesota’s Arrowhead.

ENTERTAINMENT

Tuesday, October 6th
Once you’ve arrived in town, join your colleagues for networking and great food at Canal Park Brewery, conveniently located within walking distance of the DECC and the Canal Park hotels. Canal Park brewery features a unique brew pub menu, along with craft beers brewed on site.

Wednesday, October 7th
After a long day of workshops, stop by the Geo-Lounge where we will be hosting a “dessert first” networking event. This event will be open to all, with a special welcome to our educator attendees. After the Geo-Lounge, feel free to wander over to Grandma’s Sports Garden for a welcome reception and entertainment!

Thursday, October 8th
Once the sessions are over, be sure to stop by the vendor reception in the DECC exhibit hall. Afterward, join us for the conference social at the Holiday Inn, located in downtown Duluth. The festivities include a craft beer tasting event, featuring craft brews from across the Northland region! We will also have wine and sodas available. Proceeds from the event will benefit the MN GIS/LIS scholarship fund.

Friday, October 9th
The conference may be over, but the weekend is just beginning in Duluth! Feel free to explore and visit one of the many scenic sites, enjoy the craft brews, restaurants and entertainment in Canal Park or downtown. Don’t forget your MN GIS/LIS Conference discount card!
The Mn GIS/LIS Consortium Conference Mentor Program is in its 5th year! Each year, we match willing GIS professionals with students or early professionals who wish to connect with someone personally at the conference for conference navigation, career advice, resume review and professional stories. This program has been a huge success, growing to 15 mentor/mentee pairs in 2014. Students’ early introductions to local organizations and employers go a long way to making sure our MN graduates are successful and that many are the future GIS professionals of Minnesota.

From a mentor: “I always learn something new from the mentees, and it is a rewarding experience.”

From a student: “This was my first MN GIS/LIS conference and having a mentor willing to introduce you to his/her colleagues is a tremendous asset while networking.”

The mentor program involves a small commitment of time on Thursday of the conference. You will meet your mentee in the Geolounge at 7:30am on Thursday for ½ hour. Then we ask that you please invite your mentee to sit with you and your colleagues at the welcome/plenary and again at the Thursday lunch. We provide some optional conversation starters to aid in discussion. What you do beyond this initial networking is up to you both to decide!

For more information or to sign up, please contact Stacey Stark: slstark@d.umn.edu
POSTER GALLERY

• **Ian McHarg in Minnesota** — Geoff Maas, Metropolitan Council; Ryan Mattke, Borchert Map Library, University of Minnesota

• **Watershed Health Assessment Framework - A GIS driven project to facilitate management for watershed health and collaboration around clean water work.** — Ben Gosack, MN DNR; Beth Knudsen, MN DNR

• **Il était une fois: Mapping Balzac’s Paris** — Jennifer Reinke, UMN Borchert Map Library

• **Inver Grove Heights Community Solar Gardens: Site Potential GIS-based Assessment** — Andra Bontrager, City of Inver Grove Heights; Scott O’Donnell, City of Inver Grove Heights

• **Seasonal Ponds Mapping Methods, Issues, and Future Mapping Efforts on the Chippewa National Forest** — James (Matt) Frazer

• **Validation of a Forest Canopy Disturbance Map: A Case Study** — James Garner, US Forest Service; Mark Nelson, US Forest Service

• **Standardized Maps Using the U.S. National Grid** — Randy Knippel, Dakota County

• **Upper Cannon River Watershed BMP Targeting and Watershed Database Development** — Michelle Trager, Rice County; Jennifer Mocol-Johnson, Rice County

• **Mining the Past via GIS to Protect the Future** — Julie Oreskovich, Natural Resources Research Institute

• **Minnesotans for the American Community Survey: MACS** — Jeff Matson, University of Minnesota

• **Land Asset Management: DNR’S Strategic Plan For The Conservation Agenda** — Sherry Watson, MNIT @ Minnesota Department of Natural Resources; Katherine Rossman, MNIT @ Minnesota Department of Natural Resources

WEB MAP GALLERY

• **Watershed Health Assessment Framework - A GIS driven project to facilitate management for watershed health and collaboration around clean water work.** — Ben Gosack, MN DNR

• **USNG Emergency Location Markers: Assisting Emergency Response along Recreational Trails in Cook County, MN** — Kyle Oberg, Cook County

• **Minnesota GIS/LIS Conference Attendees** — Kitty Hurley, MN.IT Services

K-12 TEACHERS EVENTS

At the GIS/LIS conference this fall the GIS/LIS Board, Conference committee and Minnesota Department of Education are sponsoring a full day of GIS instruction and workshops for K-12 teachers. This will happen the same day as the conference workshops on Wednesday, October 7. Not only will teachers get a great day of instruction but they will be able to get free lunch, 6 credits of CEUs as well as interaction with YOU! Yes, if you are interested in K-12 geo-mentoring, there will be an opportunity for you to sign up, or if you are there on Wednesday, speak to teachers about GIS. If you know of teachers that may be interested in attending please forward the registration link below.

www.mngislis.org/?page=2015_conf_k12_form
PRE-CONFERENCE WORKSHOPS

Workshop check-in begins at 7:30 am Wednesday morning in the lobby of the DECC where refreshments will be provided. Workshop registration includes lunch and will be provided at the DECC at 12:15 pm. All data and materials for the workshops will be provided by the instructors.

All hands-on workshops will be Bring Your Own Laptop and some hands-on workshops are Bring Your Own Mobile Device, if you would like to attend one of these workshops you will need to have a laptop that you can bring to the workshop. We will be working closely with the instructors of the hands-on workshops to ensure materials for those workshops are available before October 1st for installation on attendee’s laptops.

Green workshops are Hands-on, Blue workshops are Lecture style.

ESRI HOLL
Format: Hands-On

The HOLL (Hands-On Learning Lab) is a training resource provided and developed by Esri Training Services. The lab is an excellent way to introduce ArcGIS® software users to a variety of Esri® solutions and training opportunities while learning to use Esri software.

See the listing of course at the end of this document, Page 16.

FULL-DAY WORKSHOP

WK0019 – LiDAR Terrain Analysis Techniques (Horizon Rm 202)
Presenter: Joel Nelson, University of Minnesota
Audience: Intermediate
Format: Hands-On and Lecture
Software Required: ArcGIS, Spatial Analyst

Terrain Analysis techniques for soil & water conservation, hydrologic planning, and water quality concerns will be addressed. A number of terrain attributes will be calculated from LiDAR data, with an emphasis placed on interpreting these data for natural, agricultural, or otherwise non-urban landscapes.

AM WORKSHOPS

WK0002 – Getting started with ArcGIS Pro (Ballroom M-N)
Audience: Intermediate
Format: Lecture
Software Required: Participants will need to have ArcGIS Pro installed on their computers.

This workshop is an introduction to one of the most exciting new tools in the geospatial community. This workshop will help you get started using ArcGIS Pro. We’ll start with an overview of the user interface followed by a demonstration of common tasks and tools. Some of those tasks include building projects, editing data, displaying data, and sharing maps. This course is recommended for users already using ArcGIS for Desktop or other desktop GIS products.

WK0003 – Parcel Fabric Migration is Done — Now What? (Ballroom O)
Audience: Intermediate
Format: Lecture
Software Required: N/A

This 1/2 day workshop will focus on what to do after a migration to the LGIM and Parcel Fabric. The lecture and demonstrations will focus on enhancing the geodatabase with some tuning tips, publishing work, utilizing extensions that most organizations don’t even realize they have, and looking to the future possibilities for workflow management. These topics will be focused around the business needs, data needs, and service needs of local government organizations.

WK0004 – Introduction to Python Using the ArcGIS Field Calculator (French River Rm 1)
Presenter: Terese Rowekamp, Rowekamp Associates, Inc.
Audience: Intermediate
Format: Hands-On
Software Required: ArcGIS 10.0 or later

Learn the basics of Python programming while also learning the power of ArcMap’s Field Calculator. This hands-on workshop will introduce a non-programmer to the Python scripting language. The workshop will start with an introduction to Python programming concepts using ArcMap’s Python window and will then move on to creating and executing Python code blocks in the Field Calculator. A working knowledge of ArcGIS and the Field Calculator is expected of attendees in this workshop. Prior programming experience is not required, but is helpful.

WK0005 – Leveraging ArcGIS Online for Your Organization (French River Rm 2)
Presenters: Jesse Adams and Sam Giebner, North Point Geographic Solutions
Audience: Intermediate
Format: Hands-On and Lecture
Software Required: Web browser

This workshop will cover many of the new and exciting features that ArcGIS Online has to offer while also helping attendees leverage these features for their organizations. Participants will learn how to set up open data sites which provide a resource for the general public to search, download, filter, and visualize an organization’s data through their web browser or mobile device. We will also cover how to setup Collector for ArcGIS, which allows for data to be collected and updated in the field on mobile devices, whether in a connected or disconnected environment. Participants will also learn how to utilize enterprise login.
Enterprise login provides flexibility to your organization by giving members the ability to sign in to ArcGIS Online using the same login credentials used to access an organization’s enterprise information systems, instead of using a separate ArcGIS account.

**WK0006 – Introduction to Collector for ArcGIS (BYOL, BYOM) (Split Rock Rm 1)**
Presenter: Jacqueline Kovarik and Chris Pouliot, MN DNR
Audience: Beginner
Format: Hands-On
Software Required: ArcMap and a web browser; see workshop description

Curious about how to configure a mobile Collector app? This course will walk you through the necessary steps, from beginning to end. In 4 hours, you’ll learn how to take a paper data entry form and turn it into a user friendly mobile data collection app using ArcGIS Online, a File Geodatabase, and a smartphone or tablet. We’ll spend time discussing, developing, and testing our end product: a Collector for ArcGIS application. Familiarity with geodatabase design and global positioning systems will be beneficial.

Please bring your own laptop with ArcGIS 10.2 or later installed. Additionally, please bring a mobile phone or tablet if possible (cellular connectivity is not required) that meets the following requirements: Android: Android 4.0 or later, Armv7 processor, OpenGL ES 2.0 support, Precise location (GPS & Network-based support). iOS: iOS 7 or later, iPhone, iPad, iPod touch. Note: Windows devices are not compatible with Collector for ArcGIS.

**WK0007 – Intro ESRI Javascript API (Split Rock Rm 2)**
Audience Level: Beginner
Format: Hands-On
Software Required: N/A

Basic hands-on training on getting started with ArcGIS JavaScript API. You will learn some basic HTML5 and CSS3 web pages designing techniques, mainly focusing on map layouts. From there, a step by step development process will be performed to design a complete web mapping application using ArcGIS JavaScript API. Users will learn how to incorporate basic tool such as searches and auto-completes, identify and query layers, printing and geoprocessing tasks in a web application. At the end users will learn basic development-cycle of web mapping application.

**WK0008 – Enterprise SDE - The Whole Nine Yards! (Horizon Rm 203)**
Presenter: Jessica Fendos, Ramsey County
Audience Level: Intermediate
Format: Lecture with Demos
Software Required: N/A

This workshop will prepare you to successfully deploy an enterprise geodatabase to serve multiple users and secure mission-critical geospatial datasets in your organization. You will learn about SDE’s role in an Enterprise ArcGIS Server system, its installation options, as well as how to manage a geodatabase by setting up user accounts and permissions, enabling versioned editing, and performing database maintenance tasks including the automation of data load, compression, rebuilding indexes and recalculating statistics. Instructor will conclude by providing tips and tricks on creating database views, SQL stored procedures and jobs, and locks handling based on real-life scenarios. Course concepts apply to ArcGIS V.10.X settings.

**WK0009 – Intermediate Python (Horizon Rm 204)**
Presenter: Zeb Thomas
Audience Level: Intermediate
Format: Lecture and Hands-On
Software Required:

Python programming knowledge is increasingly a vital skill for the GIS professional. As an open source language with broad adoption, python provides access to a wealth of libraries that make it uniquely positioned to bridge proprietary and open data formats. This workshop will introduce some of the more object-oriented approaches available in Esri’s arcpy module. This will include Cursors, FieldMapping, Describe, and creating python Toolbox Tools and customizing them using the ToolValidator Class. Along the way we will also cover some other useful (and free) python modules. Participants are expected to have some experience using the arcpy module.

**WK0011 – Data Driven Pages (Ballroom M-N)**
Presenter: John Wirries, KLI
Audience: Beginner
Format: Hands-On
Software Required:

We will start with the basics of creating data driven pages and work up to dynamic text, and other key features.

**WK0012 – Understanding Geodatabases (Ballroom O)**
Presenter: Rebecca Cooper, RoweKamp Associates, Inc.
Audience: Beginner
Format: Hands-On
Software Required: ArcGIS Desktop 10.0 or later (standard or advanced preferred but not required)

This ½ day workshop will introduce the different types of geodatabases and the advantages of using geodatabases over shapefiles. Learn how to create a file geodatabase, import shapefiles to a geodatabase, build attribute domains and subtypes and use a relationship class (ArcGIS for Desktop Standard or Advanced users will also create a relationship class). No prior knowledge of geodatabases required but one should be comfortable working with data in ArcMap and the Catalog window to complete the hands-on exercises.
WK0013 — Introduction to Python Using the ArcGIS Field Calculator (French River Rm 1)
Presenter: Terese Rowekamp, Rowekamp Associates, Inc.
Audience: Intermediate
Format: Hands-On
Software Required: ArcGIS 10.0 or later

Learn the basics of Python programming while also learning the power of ArcMap’s Field Calculator. This hands-on workshop will introduce a non-programmer to the Python scripting language. The workshop will start with an introduction to Python programming concepts using ArcMap’s Python window and will then move on to creating and executing Python code blocks in the Field Calculator. A working knowledge of ArcGIS and the Field Calculator is expected of attendees in this workshop. Prior programming experience is not required, but is helpful.

SOLD OUT WK0014 — Web GIS Security (French River Rm 2)
Presenter: Lucas Scharenbroich, Pro-West & Associates, Inc.
Audience: Advanced
Format: Lecture
Software Required: N/A

Portal for ArcGIS is now included with Server as of 10.3, and many organizations are looking closely at the benefits of an on-premise or hybrid web GIS deployment over a pure cloud-based environment that only utilizes ArcGIS Online. This workshop will cover some common deployment scenarios and focus on the security set-up and implications of each. The interaction among the various software components will be discussed in detail, including the roles of Active Directory, the Web Adapter, Federated Servers, SAML and OAuth. Participants are expected to have experience deploying and configuring ArcGIS Server and should have a basic understanding of general IT and networking concepts.

WK0015 — Intermediate Collector for ArcGIS (BYOL, BYOM) (Split Rock Rm 1)
Presenter: Jacquelin Kovarik, MN DNR and Chris Pouliot, MN DNR
Audience: Intermediate
Format: Hands-On
Software Required: ArcMap and a web browser; see workshop description

Building on foundational Collector for ArcGIS concepts, this course will teach students custom configuration techniques such as Collector database best practices, ArcGIS Online tips and tricks, and service, app, and custom basemap optimization techniques. Familiarity with subjects covered in Introduction to Collector for ArcGIS course or equivalent knowledge is suggested.

Please bring your own laptop with ArcGIS 10.2 or later installed. Additionally, please bring a mobile phone or tablet if possible (cellular connectivity is not required) that meets the following requirements:
- Android: Android 4.0 or later, Armv7 processor, OpenGL ES 2.0 support, Precise location (GPS & Network-based support). iOS: iOS 7 or later, iPhone, iPad, iPod touch. Note: Windows devices are not compatible with Collector for ArcGIS.

WK0016 — ArcGIS Server 10.1 & Beyond (Split Rock Rm 2)
Presenter: Justin Hansen, WSB & Associates, Inc.
Audience: Advanced
Format: Lecture
Software Required: N/A

This workshop will serve as an advanced look into ArcGIS Server 10.3 from both the IT and GIS management perspective. Existing users of ArcGIS Server will find the most benefit from this workshop as topics will range from installation recommendations, system architecture guidelines, security best practices, load testing and more. In addition, we will discuss the advantages and disadvantages of running ArcGIS Server in Amazon’s Cloud. Also, we’ll look at where Esri’s is going with the ArcGIS Platform and how ArcGIS Server fits within Esri’s ever changing ecosystem including ArcGIS Online. This workshop will benefit both IT professionals and GIS Managers seeking to understand how to best manage their ArcGIS Server 10.3 deployment or existing infrastructure. While this workshop is targeted at advanced users with ArcGIS Server experience, it will provide a solid introduction to core ArcGIS Server concepts.

WK0017 — Integrating Sensors with ArcGIS Platform (Horizon Rm 203)
Presenter: Chad Nunemacher, Houston Engineering
Audience: Intermediate
Format: Lecture
Software Required: N/A

During this workshop we will explain how we captured data with a sensor and then transmitted that data into a GIS environment for analysis. We will share what type of sensor was used and why, all the needed components at the monitoring site (not just the sensor), how the sensor data was collected and transferred to the GIS environment, how the sensor data was used in GIS, and more. The use of sensors for data collection is becoming increasing popular. Mix this in with ability to visualize sensor data via GIS and you have a powerful combination. Come join us and open you mind to the possibilities.

Houston Engineering would like to thank Roman Marjamaa (Marjamaa Engineering, Inc) for his work in configuring the ultrasonic sensor system. He was responsible for converting analog and digital signals to digital data and then transporting that data to a GIS accessible repository.

WK0018 — Using Geoprocessing Services with the JavaScript API (Horizon Rm 204)
Presenter: Caleb Mackey, Bolton & Menk, Inc.
Audience: Intermediate
Format: Lecture
Software Required: N/A

This workshop will demonstrate how to consume and publish Geoprocessing services written in Python to perform analysis/tasks in an HTML5/JavaScript application. It will cover beginner to advanced level Python scripts to build the GP Services. The workshop will also be focused on creating simple drop downs and forms to gather user input to pass the parameters into a Geoprocessing Service within a JavaScript based application (beginner level JavaScript and HTML5).
THURSDAY SESSIONS

Green sessions are Individual Presentations (including 12-minute Lightning Presentations).
Blue sessions are Panel Discussions (including User and Regional groups).

THURSDAY, 10:30 a.m. – 12:00 p.m.

**Session 1: Wetlands (Ballroom L)**
- An Improved National Wetland Inventory for Southern Minnesota — Steve Kloiber, MN DNR
- Identifying and Quantifying Attributes of Drained Wetlands in the Red River Basin Using LiDAR — Henry Van Offelen, MN DNR; Grit May, International Water Institute

**Session 2: Forestry Management (Ballroom MN)**
- Streamlining the Red Lake Reservation Forest Inventory Process — Jesse Adams, North Point Geographic Solutions; Scott Abel, Red Lake DNR
- Forestry’s Stand Exam Project — How to Make Everyone Happy? — Kari Geurts, MN DNR
- Disease Tree Inspections with Mobile GIS Tools — Tami Maddio and Gregg Hove and Sara Pluta, City of Eagan

**Session 3: Emergency Management & 911 Dispatch (Ballroom O)**
- Next Generation 9-1-1 for GIS Professionals — Adam Iten, State of MN
- GIS for 911 Dispatch FAQ — Victor Barnett, Ramsey County
- GIS/GPS Technologies in Wildfire Suppression Management — Red Lake Reservation — Scott Abel, Red Lake DNR

**Session 4: Field Data Collection (Split Rock Room 1)**
- High Accuracy GNSS with Smart Phones and Tablets — Jake Wittenberg, Frontier Precision, Inc.
- Data Dictionary Creation Using GPS Pathfinder Office & TerraSync — Hillary Bjorstrom, STAR Energy Services

**Session 5: Lightning Round 1 — Mapping (Split Rock Room 2)**
- Mapping Places and County Subdivisions from 1790 to Present: The 1 Year Update — Jason Borah, Minnesota Population Center
- Mapping Joy & Pain: Connecting Space, Place, and Emotion — Maureen McFarlane, University of Minnesota
- Managing ArcGIS Services and AGOL with Python — Matt McGuire, Metropolitan Council
- Introducing Web Mapping to Writing Studies and Journalism Classes at the University of Minnesota Duluth — Micaella Penning, University of Minnesota Duluth
- Mapping Minnesota’s Infrastructure — Len Kne, University of Minnesota
- Pink Turns to Blue: Tools for Making Colorblind-Friendly Maps — Brad Neuhauser, MN Secretary of State

**Session 6: Web Map Design (French River Room 1)**
- Building (and Maintaining) Flexible, Focused GIS Web App — John Nerge, City of Brooklyn Park
- Web AppBuilder Customizations: A Success Story — Nate Rose, Stearns County
- Designing Web Mapping Applications that Appeal to the Non-Technical User — Kris Johnson, Point Geographic

**Session 7: Students & Young Professionals (French River Room 2)**
- Finding, Applying for and Interviewing for Jobs in GIS — Stacy Stark, University of MN, Duluth and Others to Be Determined

THURSDAY, 1:30 p.m. – 3:00 p.m.

**Session 8: Centerline Collaboration (Ballroom L)**
- The Metro Regional Centerlines Collaborative — Geoff Maas, MetroGIS/Metropolitan Council; Ann Houghton, Hennepin County; Matt Koukol, Ramsey County

**Session 9: Imagery (Ballroom MN)**
- What’s New in Aerial Imagery: New Data Acquisitions, New Accuracy Standards and New Public Sector Contracting Opportunities — Chris Cialek, MNGeo; Craig Molander, Survedx Corporation; Peter Jenkins, MNDOT; Steve Kloiber, MN IT Services @ DNR; Jeff Bloomquist, USDA

**Session 10: Surveying (Ballroom O)**
- The Land Surveyor and the Parcel Fabric — Frank Conkling, Panda Consulting
- Now Available Online! St. Louis County Survey Records — Preston Dowell, St. Louis County Survey Division
- Survey Coordination Using Arc GIS Online and Collector — Dave Kirkpatrick, Houston Engineering, Inc.

**Session 11: Transportation (Split Rock Room 1)**
- Backcasting Implications of Travel Demand Modeling — Mohammad Molla, Upper Great Plains Transportation Institute
- How MnDOT Is Utilizing Workflow Manager and Data Reviewer to Improve Our Business — Jesse Pearson and Amelia Rockwood, MNDOT
- Generation of Daily Activity-Travel Patterns: An Application of GIS — Mohammad Molla, Upper Great Plains Transportation Institute

**Session 12: Open Source (Split Rock Room 2)**
- Automatic Vehicle Location (AVL) - We Know What You Did Last Summer — Bob Basques, City of St Paul
- Giving Away the Code Without Giving Away the Farm: A Business Model for Open Source Entrepreneurs — Blaine Hackett, Flat Rock Geographics

**Session 13: ArcGIS Online (French River Room 1)**
- Leveraging ArcGIS Online in Your Organization — Jesse Adams, North Point Geographic Solutions
- Making the Most of ArcGIS Online for Your Organization — A Look at a Regional Example — Stephanie Gibeau, North Point Geographic Solutions
- ArcGIS Online in Action — John Nerge, City of Brooklyn Park

**Session 14: Students — Undergraduate Competition (French River Room 2)**
- UG Student Comp

**Session 15: Product Demonstrations (St. Louis River Room)**
- Pictometry Product Demo — Brandon Tourtelotte, Pictometry International
THURSDAY, 3:30 p.m. – 5:00 p.m.

Session 16: Wildlife Health Management (Ballroom L)
• Thirteen Years of GIS Lessons Learned; Responding to Disease Outbreaks in Wildlife – Steve Benson, MN DNR
• Using GIS to support Avian Influenza Response – Alison Slats and Karl Hillsrom, MN Department of Agriculture

Session 17: Parcel Fabric (Ballroom MN)
• Expanding the Local Government Information Model and the Parcel Fabric – Brad Anderson, City of Moorhead; Jeff Storlie, St Louis County; Ryan Stover, St Louis County; Lucas Scharenbroich, Pro-West & Associates, Inc.

Session 18: Emergency Management- Planning & Aftermath (Ballroom O)
• GIS Unplugged: No Time for Fancy in an Emergency – Randy Knippel, Dakota County
• 10 Years After: New Orleans and Hurricane Katrina – Geoff Maas, MetroGIS/Metropolitan Council
• U.S. National Grid: What Are You Waiting For? – Randy Knippel, Dakota County

Session 19: Field Data Collection & Asset Management (Split Rock Room 1)
• Adapting to the New State Mandated MS4 Permit and Completing an Annual Pond and Storm Utility Infrastructure Inventory Using GIS and ArcCollector in the Field – Leah Sperduto and Aaron Menza, City of Eagan
• From the Field through the Firewall: An Approach to Streamlining Utility GIS Data Access in the Field, Office, and Web – Kim Sundeen, City of Duluth Engineering
• Trial, Error and the Future of Data Collection: Increasing the Speed of Field to Database Update – Michael Thorstad, City of Duluth Engineering; Chauncey Bangs, City of Duluth

Session 20: Lightning Round II — Miscellaneous (Split Rock Room 2)
• Ramsey Enterprise 10.3.1 The Voyage to “The Best of Both Worlds” – Jessica Fendos and Matt Koukol, Ramsey County
• A GIS-Driven Spatial Decision Support System to Select K-12 Schools for Student Teaching Experiences – Aaron Kingsbury, Mayville State University
• March of the Ticks – Nancy Read, Metro Mosquito Control
• Teaching Mobile GIS to Boy Scouts – John Wировки-Kadrmas, Lee & Jackson, Inc.
• Don’t Divorce Your Career: Tips for Rekindling a Passion for GIS – Cinde Morris, AE2S
• Telling the American Community Survey Story: Opportunities and Threats – Jeff Matson, University of Minnesota and Joan Naymark, Minnesotans for the ACS

Session 21: Students — Graduate Competition (French River Room 1)
• Grad Student Comp

Session 22: Students — Undergraduate Competition (French River Room 2)
• UG Student Comp

Session 23: Product Demonstrations (St. Louis River Room)
• Map 3D Tools for the Civil Workflows: Taking CAD to GIS – Scott Mizsak, CAD Technology Center
• The Agricultural Conservation Planning Framework (ACPF) and Its Application in the Le Sueur River Watershed in Southern Minnesota — Jessica Nelson, Water Resource Center, MSU - Mankato; Sara Porter, National Laboratory for Agriculture and the Environment

FRIDAY, 8:30 a.m. – 10:00 a.m.

Session 24: Data Aggregation- Address Points (Ballroom L)
• The MetroGIS Address Point Editor Tool and Data Aggregation Strategies – Tanya Mayer, Dakota County; Ann Houghton, Hennepin County; Todd Lusk, Dakota County; Jon Hoekenga, Metropolitan Council; Pete Herschel, Carver County and Hal Watson, MN DNR

Session 25: LiDAR & Hydrology (Ballroom MN)
• Watercourse Hydrography Development from LiDAR-derived Products Creating Next Generation Watercourse Hydrography (NXG-Hydro) for Minnesota’s Landscape — Sean Vaughn, Rick Moore, Steve Kloiber and Tyler Kaebisch, MN.IT Services@MN DNR

Session 26: Utilities (Ballroom O)
• Imagery-Based Asset Verification for Utilities – Brandon Tourtelotte, Pictometry International
• Using Esri Geoforms to Engage Current and Future Minnesota Power Customers – Brandon Keinath, Minnesota Power

Session 27: A Little Bit of This, A Little Bit of That (Split Rock Room 1)
• Python and the ArcGIS REST API – Caleb Mackey, Bolton & Menk, Inc.
• Space Geography – Rick Gelbmann
• Mapping Alternate Terrains: GeoHumanities and Cartographic Expression – Kevin Dyke and Ryan Mattke, John R. Borchert Map Library, University of Minnesota

Session 28: Lightning Round III — Environment (Split Rock Room 2)
• Ian McHarg in Minnesota – Will Craig, UoM CURA; Ryan Mattke, Borchert Map Library, University of Minnesota
• WaterSMART and Water Use Guide USGS Science Goals and Priorities – Christopher Sanocki, US Geological Survey
• Citizen Scientists Help Map Vernal Pools in Northern Minnesota – Jennifer Olker, Natural Resources Research Institute
• An Exploration of the Impact of Governor Dayton’s Proposed Shoreland Buffer Initiative on Agricultural Lands in Minnesota – David Kelley, Geography – University of St. Thomas
• Utility Pole Decay in Relation to Soil Types – Timothy Tabor, Minnesota Power
• The Advancement of Urban Stormwater Modeling Using GIS – Sean O’Brien, Houston Engineering Inc.

Session 29: Web Maps (French River Room 1)
• Cannon Valley Trail Web Mapping App – Leanne Knott, UofM CURA; Randy Mattke, Borchert Map Library, University of Minnesota
• Minnesota’s Network of Parks & Trails: Creating a Cohesive Geospatial System – Norm Anderson, MNGeo; Elissa Brown, University of Minnesota’s Center for Changing Landscapes
Session 30: Education (French River Room 2)
• Latest News from the Front of GIS Education — Laure Charleux, University of Minnesota Duluth
• Determining Suitable Locations for Wind Turbines on the Leach Lake Reservation — Doug Adams, Baltimore County, Maryland; John Seelye, Elijah Howard and Jaden Moore, Grand Rapids; Jacqueline Schneider, Leech Lake Reservation

FRIDAY, 10:30 a.m. – 12:00 p.m.
Session 31: Hydrology (Ballroom L)
• Statewide Riparian Buffer Inventory of Minnesota’s Rivers and Streams — John Sandberg and Andrew Peterson, MPCA
• Floodplain Models: A Streamlined Review through Data Mining and Visualization — Kyle Volk and Thomas Sayward, Moore Engineering Inc.

Session 32: Metadata (Ballroom MN)
• The Next Generation of Metadata in Minnesota: Curating Content for the Geospatial Commons — Mike Dolbow, MNGeo

Session 33: Emergency Management — Planning & During the Emergency (Ballroom O)
• Visualizing Fire Department Responses with CartoDB — Paul Wickman, Flat Rock Geographics
• GIS and Law Enforcement at Carver County — Chad Riley, Carver County

Session 34: Asset Management (Split Rock Room 1)
• Building an Asset Management System, One Project at a Time — Heather Albrecht, City of Maple Grove
• Tracking Sign Assets and Projecting Future Maintenance with Cityworks — Rebecca Foster, City of Edina

Session 35: Parcel Database Initiative (Split Rock Room 2)
• Statewide Parcel Data Layer: Current Status and Future Plans — Bart Richardson, MN.IT Services@MN DNR; Dan Ross, MnGeo
• Status of the Wisconsin Statewide Parcel Map Initiative — Howard Veregin, State Cartographer’s Office
• Incorporating Spatial Clustering into your Analysis: An Assessors Office Case Study — Daniel Fasteen, Dakota County

Session 36: Government GIS (French River Room 1)
• GIS in Corrections at Hennepin County — Andrew King-Scribbins, Hennepin County Department of Community Corrections
• USGS Geospatial Data Program Highlights — Ronald Wencl, US Geological Survey
• Forecasting the Next 30 Years of Metro Development — Todd Graham, Metropolitan

Session 37: Imagery/Remote Sensing (French River Room 2)
• An Overview of Great Lakes Remote Sensing Programs — Brain Huberty, U.S. Fish and Wildlife Service, Ecological Services; Brandon Krumwiede, The Baldwin Group at NOAA Office for Coastal Management
• Integrating Landsat Imagery with LiDAR and Object-based Image Analysis for Land Cover Classification of the Lake of the Woods/Rainy River Basin for the ~1990 and ~2010 Time Periods — Leif Olmanson and Marvin Bauer, University of Minnesota
• Using LiDAR Imagery to Identify Bluffs and Potential Erosion Sites on Lake Superior’s North Shore — George Host, Natural Resources Research Institute
GENERAL INFORMATION
Location:
Duluth Entertainment Convention Center
350 Harbor Drive
Duluth, MN 55802
(218) 722-5573

DIRECTIONS
FROM TWIN CITIES/SOUTHERN MN
• Follow I-35 North to Duluth
• Take Lake Avenue exit (#256B)
• At stoplights, turn right onto Harbor Drive

FROM THE IRON RANGE
• Follow Hwy 53 to Duluth
• Continue to go straight past the mall and through many stoplights until you can see the lake
• Turn right onto Mesaba Avenue
• Get into the left lane and turn left at first stoplight
• Immediately turn right onto Lake Avenue
• Follow Lake Avenue to the bottom of the hill and over I-35
• Turn right onto South Lake Avenue
• After first set of stoplights, turn left onto Harbor Drive

FROM WISCONSIN
• Follow Hwy 53/Hwy 2 to Superior, WI
• Continue on Hwy 53 North over the John A. Blatnik Bridge
• Merge onto I-35 North (exit to right after bridge)
• Take Lake Avenue exit (#256B)
• At stoplights, turn right onto Harbor Drive

FROM THE AIRPORT
• Follow road to stop sign
• Take right onto Haines Road
• At second set of stoplights (1.5miles), take left onto Hwy 53/194
• Go straight, through many stoplights until you see the lake
• Turn right onto Mesaba Avenue
• Get into the left lane and turn left at first stoplight
• Immediately turn right onto Lake Avenue
• Follow Lake Avenue to the bottom of the hill and over I-35
• Turn right onto South Lake Avenue
• After first set of stoplights, turn left onto Harbor Drive

LODGING ACCOMMODATIONS
For all hotels, please reference the Minnesota GIS/LIS Consortium Room Rate. For more information please contact Ashley Crunstedt at ashleyc@ewald.com

Conference Headquarters Hotel:
Holiday Inn & Suites: Duluth
Downtown
200 West First Street
Duluth, MN 55802
Reservations: 218-722-1202
Rates: $89 /night
Cut off date: Sept. 6, 2015.
Online Reservations
Group Code: MNG

Radisson: Duluth Harborview
505 W Superior Street
Duluth, MN 55802
Reservations: 218-727-8981
Rates: $99 /night
Cut off date: Sept. 6, 2015.
Online Reservations
Under “More Search Options”
(select “Promo Code” for Rate Type)
Code/ID: MNGISL

The Inn on Lake Superior
350 Canal Park Drive
Duluth, MN 55802
Reservations: 218-726-1111
Rates: $124 /night
Cut off date: Sept. 6, 2015.
Online Reservations
Group ID: 4619
Password: 37000033

Meals:
Conference registration includes lunch and refreshment breaks on Thursday and Friday and the vendor reception on Thursday evening. Pre-Conference Workshop registration, including half-day workshops, includes lunch and refreshment breaks on Wednesday. All conference and workshop attendees are invited to both the Wednesday evening and Thursday evening networking events.

Materials:
Conference attendees will receive a copy of the conference proceedings, which will include abstracts for all presentations. Workshop attendees will receive workshop materials for each workshop attended. The information contained in this program should be considered preliminary and as such, could be subject to change in the final proceedings.

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Conference attendees will receive a copy of the conference proceedings, which will include abstracts for all presentations. Workshop attendees will receive workshop materials for each workshop attended. The information contained in this program should be considered preliminary and as such, could be subject to change in the final proceedings.
Esri Hands-On Learning Lab
Fact Sheet

What is the Hands-On Learning Lab?
The HOLL (Hands-On Learning Lab) is a training resource provided and developed by Esri Training Services. The lab is an excellent way to introduce ArcGIS® software users to a variety of Esri® solutions and training opportunities while learning to use Esri software.

How does the HOLL work?
The HOLL consists of a group of laptops with headphones where students can work through lessons at their own pace. A lesson consists of a recorded presentation followed by a hands-on exercise. Each lesson typically takes from about 45 minutes to one hour to complete, and students can generally come and go as they please. Training Services instructors are on hand to answer questions and discuss Esri products, other training opportunities, and Esri Technical Certification.

How often is the HOLL updated?
The lesson topic choices are updated on a schedule matching the Esri software release schedule in order to provide new and up-to-date content when it becomes available.

Lessons offered at the HOLL (subject to change)
1. Getting Started with GIS 1: Understanding the ArcGIS Platform
2. Getting Started with GIS 2: Using ArcMAP™ to Explore GIS Data
3. Getting to Know ArcGIS® Pro
4. Advantages to Storing Your GIS Data in the Geodatabase
5. Creating Presentation Quality Maps in ArcMap
6. Editing GIS Data in ArcMap
7. Multi-user Editing Using Versioning
8. Editing and Maintaining Parcels Stored in a Parcel Fabric
9. Geocoding Street Addresses to Create Map Points
10. Importing and Preparing CAD Data for Use in ArcGIS
11. The Importance of Spatial Reference in Tactical Applications
13. Optimizing Transportation Routing Using ArcGIS® Network Analyst
14. Modeling Time and Distance Along Networks Using Linear Referencing
15. Working with Geometric Networks to Manage Utilities and Water Runoff
16. Interpolating Sample Points to Create Rasters Using Spatial Analyst Tools
17. Geoprocessing GIS Data Using Python
18. Sharing Maps and GIS Content Using ArcGIS® Online
19. Understanding Web Services Using ArcGIS® for Server
20. Generating Web Applications for the GIS Novice
21. Getting Started with the Community Maps Data Preparation Tools
22. Mapping Excel Data Using Esri® Maps for Office®

Interested in having the Hands-On Learning Lab at your next event?
Contact your Esri account manager for more information. To find the Esri office that serves you visit esri.com/offices.
October 7–9, 2015
25th MN GIS/LIS ANNUAL CONFERENCE REGISTRATION

Please fill out the registration form completely.

Name: ____________________________
Organization: ____________________
E-mail: __________________________
Address: __________________________
City: _____________________________ State: ___________ Zip: ___________
Special diet needs: ______________________________

Attendance Options

Evening Events
I will attend the Tuesday evening event: ☐ Yes ☐ No
I will attend the Wednesday evening event: ☐ Yes ☐ No
I will attend the Thursday evening event: ☐ Yes ☐ No

Fun Walk/Run
I plan to participate in the Fun Run on October 9 at 6:30 a.m.: ☐ Yes ☐ No
Fun Run T-Shirt Size: S M L XL XXL ☐ Mens ☐ Womens

Regional/User Group
I would like to host a Regional/ User Group: ☐ Yes ☐ No If yes, please list the Regional/ User Group Topic: __________________________

Esri Hands-On Learning Lab
I am interested in attending the Esri Hands-On Learning Lab (during sessions): ☐ Yes ☐ No

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<th>October 7, 2015</th>
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<tr>
<td>AM Workshops (choose one)</td>
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<td>($125/$160 after 9/25/15)</td>
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<tr>
<td>☐ WK0002 Getting started with ArcGIS Pro</td>
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<td>☐ WK0003 Parcel Fabric Migration is Done – Now What?</td>
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<tr>
<td>☐ WK0004 Introduction to Python Using the ArcGIS Field Calculator</td>
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<td>☐ WK0005 Leveraging ArcGIS Online for Your Organization</td>
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<td>☐ WK0006 Introduction to Collector for ArcGIS</td>
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<td>☐ WK0007 Intro ESRI Javascript API</td>
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<td>☐ WK0008 Enterprise SDE – The Whole Nine Yards!</td>
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<td>☐ WK0009 Intermediate Python</td>
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<th>Full Day Workshop ($210/$240 after 9/25/15)</th>
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<td>☐ WK0019 LiDAR Terrain Analysis Techniques</td>
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*If the session you’re interested in is SOLD OUT, we highly suggest that you register for an alternative workshop. Though it is unlikely that there will be any cancellations, you may request to be put on a wait list for a session that is SOLD OUT. Please send an e-mail to meghan@ewald.com along with the name of workshop that you are interested in to be included on the list.

Payments/Fees
☐ Annual Conference ($265 | $300 after 9/25/15 | $320 onsite) $ ___________
☐ Annual Conference - Student ($45) $ ___________
☐ Pre-conference Workshops only (Prices are above) $ ___________

Payment Info:
Payment: ☐ Check (payable to MN GIS/LIS) ☐ Visa ☐ Mastercard
Cardholder (please print) __________________________ Cardholder Phone: __________________________
Credit Card Number: ____________________________ Exp. Date: ___________ 3-Digit Sec. Code: ___________
Billing Address: ____________________________
Cardholder Signature: __________________________
Purchase order number: __________________________

Please remit with payment to: MN GIS/LIS, 1000 Westgate Drive, Suite 252, St. Paul, MN 55114 or fax to 651-290-2266

Refunds:
Full refunds (less $40 administrative charge) will be issued with a written cancellation notice received by Sept. 7. To send a cancellation notification via fax to the MN GIS/LIS Consortium, please use 651-290-2266. Notifications received after Sept. 7 will NOT receive a refund, nor will no-shows at the conference.

Due to PCI Compliance, MN GIS/LIS will only accept this form via fax or mail. Emails with this completed form attached will not be accepted.

Please note: Your completion of registration indicates your permission to be recorded.