



ILLINOIS GIS NOTES

THE NEWSLETTER OF THE ILLINOIS GIS ASSOCIATION

Fall 2015

ILGISA PRESIDENT'S REPORT



2015 has been a profound year for ILGISA, filled with many accomplishments and initiatives to build upon for 2016 and beyond.

Our Regional Meetings have been an unqualified success, with over 230 of our members attending at least one Meeting. Many of you attended multiple meetings, traveling great distances to connect with and support your peers. I had the pleasure of meeting many of you at events throughout the year, and I look forward to seeing you at our Annual Conference in Springfield as well. In the years to come, I believe these Regional Meetings will give us additional opportunities to interact and learn together outside of the Annual Conference. These opportunities play a vital role in our continuing education.

The ILGISA Committees have been working on many other initiatives and programs. As always, the Program Committee is hard at work planning the Annual Conference. The Education Committee has been organizing all Conference workshops, the Outreach

Committee is readying the final details of a new Professional Network to be hosted on our Web Site, the Membership Committee is preparing a new membership type for organizations, and the list goes on. I invite you to read about these and more items in the Committee Updates section of this issue. We will be doing these Committee updates more regularly in future issues to keep you better informed of Board Committee activities.

All of this is made possible by the hard work of our member volunteers. I am now so consistently amazed by the commitment, energy and skills of our members, it is somewhat routine. I encourage you to consider participating on a Committee and letting your voice be heard within your Association. ILGISA succeeds and thrives based on the input and involvement of our members.

I hope to see all of you in Springfield in September.

Respectfully,
Andrew Vitale
ILGISA President

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2015 ILGISA ANNUAL CONFERENCE

"GIS... ON THE MOVE!"

SPRINGFIELD, IL
SEPTEMBER 14-16, 2015



SEE YOU THERE!

EDITOR'S NOTE

To the ILGISA Community,



First, I would like to thank everyone who contributed articles for the Illinois GIS Notes fall edition. I would also like to express that this newsletter would not have been published in a timely manner without the great help of Ms. Leanne Brehob-Riley, Mr. Jeff Palmer and Ms. Megan Gold. It is our goal to share several articles in addition to recent

news from the ILGISA president and committee chairs prior to the annual conference in Springfield. I would strongly encourage members to read this newsletter and bring ideas or concerns to the annual conference or regional meeting.

It is always my pleasure to compile a variety of GIS information and share them with fellow ILGISA members. I am also happy to announce that GIS Notes will be full text searchable with EBSCO databases, which means the articles would be easier for researchers to find regardless of what discov-

ery service their library uses. It is still my intention to gather useful articles for students as well as members and organize archived newsletters onto the ILGISA website.

Once again, I would like to thank you for your support. I always appreciate and welcome your suggestions and comments regarding the Illinois GIS Notes.

Sincerely,
Keisuke Nozaki,
GIS Notes Editor



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**Interested in submitting
an article for the Spring
GIS Notes?**

**Submit your article to
GISnotes@ilgisa.org
by February 1st, 2016!**

NEW OPTIONS FOR CONFIGURABLE MAP APPLICATIONS



Configurable Map Viewer vs Web App Builder for ArcGIS

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Introduction

When Esri phased out their support on Flex and Silverlight APIs, we wondered if Esri would start developing JavaScript API based configurable applications similar to ArcGIS Viewer for Flex or Silverlight. Esri officially announced Web AppBuilder for ArcGIS (WAB) at the 2014 Esri International User Conference and released it in the end of the year.

The author has joined the ArcGIS Beta Community and provided positive and negative feedback to Esri before the final release of WAB. For those who would like to learn how to build web applications using WAB, there is a great article in the ArcUser Summer 2015 edition, p54-58.ⁱ However, the author argues WAB is somewhat different from ArcGIS Viewer for Flex or Silverlight.

Limitations of WAB

First, WAB is not free like ArcGIS Viewer for Flex or Silverlight. It requires an ArcGIS organizational account which begins at \$2,500 per year.ⁱⁱ Esri later announced customers with current ArcGIS for Desktop licenses are entitled to be part of ArcGIS organizational account. Please note that only 100 service credits are provided per ArcGIS for Desktop license.ⁱⁱⁱ

Second, WAB only allows developers to load layers from a web map on ArcGIS Online. There is no official method to load layers directly from ArcGIS for Server. This issue has been discussed on GeoNet for a long time.^{iv} Even though a developer found a workaround to load dynamic or tiled map services without ArcGIS Online, Esri disabled the option and announced this workaround is not supported. This decision made many developers disappointed and caused them to switch to other configurable applications or JavaScript API coding.

Configurable Map Viewer (CMV)

At the 2014 ILGISA annual conference, the author learned there is open source software called CMV. CMV is similar to a compiled version of ArcGIS Viewer for Flex or Silverlight. It is not a GUI based program, but what a developer needs is only a text editor. Advanced text editors such as NotePad++ would be recommended to view and edit JavaScript syntax.

Initially, the viewer may be downloaded from the CMV website.^v Unzip the compressed file and copy the viewer folder to the web server (a default location for IIS is C:\inetpub). Please

ask your network administrator for further information. There are five configurable files under js\config\. Let's open viewer.js with a text editor. A key is choosing operational layers then defining basemap and extent. The URL for operational layers may be found at ArcGIS REST Services Directory.^{vi} Please note that secured services may not be visible without entering a password. Even though Esri basemap is the default, it is possible to use one's own basemap by configuring basemaps.js.

Viewer.js also controls which widgets to display on the map application. Please set include: false to disable the widget. Identify.js determines which layer and field to show when clicking the feature. Find.js allows us to define which layers may be searchable. Layer ID and field name may be found at ArcGIS REST Services Directory. Bookmarks.js stores coordinates of the predefined bookmarks.

There are custom widgets available on the website.^{vii} Each widget contains documentation with examples. Some configuration may be relatively difficult, but the community offers an active discussion forum for any questions and enhancements.^{viii}

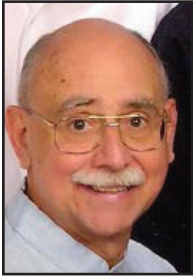
Conclusions

CMV is definitely powerful open source software. Because it has been developed by a handful of volunteers, the software may not get updated as frequent as WAB. However, developers in the discussion forum would be very helpful. Even with WAB, advanced widgets have been built by volunteers and not supported by Esri. Even though CMV is not as popular as WAB, the author believes this open source software would provide more flexibility to developers with a number of decent widgets and recommend it to the ILGISA community, especially those who do not or choose not to have an ArcGIS organizational account.

Endnotes

- i <http://www.Esri.com/~media/Files/Pdfs/news/arcuser/0615/summer-2015.pdf>
- ii <http://www.Esri.com/software/arcgis/arcgisonline/purchase>
- iii <http://www.Esri.com/software/maintenance/benefits/agol-entitlements>
- iv <https://geonet.Esri.com/thread/106522>
- v <https://github.com/cmvm/cmvm-app>
- vi <http://<host>/<site>/rest/services/<folder>/<serviceName>/<serviceType>>
- vii <https://github.com/cmvm/cmvm-contrib-widgets>
- viii <https://gitter.im/cmvm/cmvm-app>

FYI: BUDGETING FOR TRAINING & DEVELOPMENT



Developing people is a vital but sometimes not urgent responsibility. This article will help supervisors start or refresh their commitment to the budgeting process with two definitions and five suggestions.

Jeff Palmer

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Technical Training Consultant (45 years of experience)

Learning & Technical Strategies, Inc. (27 years of service)

Typically budgeting takes place once or twice a year and, unless you use zero based budgeting, the process only matches resources to work using the last accounting period as a guide. Simple but at times very frustrating and emotional; it can seem like you are budgeting to do everything with nothing.

Catchall

The term “training” tends to be a catchall for events like the following:

- Educational classes
- Travel
- Conferences
- Seminars
- Special thank you vacations
- Orientations
- Information sessions
- Team-building outings
- Motivational meals
- Reward ceremonies

Unfortunately none of these have any measurable outcomes, “feel-goods” --- yes, but nothing measurable.

How can you possibly budget for all of these events? Be honest, you can't. Using last year's numbers is just a way to fill the “training” line. Think about this single budget line, what is the basis for the projections and how can you possibly defend it? Hence, it becomes a line that is easy to ignore, reduce or eliminate.

Since we all have the responsibility to develop our people, let's re-engineer this process until it reflects our “commitment.”

Your Priorities

Let's review the priorities of a supervisor:

1. Today's Work
2. Today's Paperwork
3. Tomorrow's Work

And way down the list is:

9. Develop My People

With daily priorities like these the supervisor needs to prepare a sound training budget, but with all of these events and

pressing priorities, how do we keep from diluting our goal of measurable outcomes?

So we need a new approach, right?

Five Easy Suggestions

The **first** step and this is just a strong-suggestion --- separate project related training from organizational performance training.

Every project should have its own training cost line driven by the final users of the project's deliverables. And if you find this difficult to do since you have never done a project like this and you have no idea of how complicated the deliverables are and how friendly the users are, do what I do, say “3% of the total project cost must be for training.” With this approach you'll get immediate feedback and collaboration in coming up with the training line item; at least this gives you a target for the project. And you are not the only one with skin in the game.

The **second** step is to put the educational classes under the organization's tuition reimbursement policy.

The **third** step is to put all those other catchall items under an employee enrichment line.

The **fourth** step is to create a training budget line.

The **fifth** step is to create a development line.

And the hardest step is to force the organization to post costs to the correct line, but you already knew this.

Let me digress a little: sometimes I find that a change in the accounting system is easy to say and impossible to do; so if that is also your experience just keep a spread sheet of these budget line items and YTD expenses. (Let it be the first document that you use in your monthly planning session and use this document in your annual review too.)

Training & Development

Table One summarizes the focus and the differences between training and development. Take a moment to read over the rubric. Here is my promise to you, if you stay true to these definitions of training and development, you'll be able to defend all of your expenditures.

Let's boil Table One down into two areas and budget for each separately.

The basis for setting a **training** budget comes from its definition: training is a tactic, job specific and not person specific. So pretending that you have eleven major systems and you want a primary and a secondary person able to work with each system, fluently. Your training budget will have eleven lines of projected expenditures, one for each system.

And each line would include travel costs if any and the cost of not getting work done while in training.

Unfortunately, the scope of this article prevents us from calculating the actual costs, but we can cover that later.

Development on the other hand is a strategic issue and defined around a person's future role and not a current job. So pretending that you have 9 people reporting directly to you, you'll have no more than 10 lines of development expenditures. (Nine people plus you = 10.) But wait; since your vision of the future is very limited you'll probably have just a few lines and not one for each person. Be selective not all people are ready for development so be very specific and start with your own developmental needs as an example of your leadership. An example might help, supervisors get involved in negotiating with outside users and vendors, so it might be beneficial to select one or two of your people and invest in negotiating skills at a major university like the University of Michigan or the School of Law at Harvard (each of these programs are comprehensive and include case studies and role-playing). When they return home, turn over all negotiating to them. You can thank me later.

As before, include travel if any and the cost of not getting work done while they are away. When you are in your own development event, appoint a proxy to be supervisor and DON'T call-in.

We can calculate the actual costs later.

Integrated Definitions

1. Training is job specific and not person centric. It is an organizational tactic and is measured and leads to better system performance.
2. Development is about a person's role in the future. It is an organizational strategy and typically is not measured but results in high levels of self-efficacy.

Actions You Will Take to ...

1. Separate out all project training from organizational training.
2. Put educational classes under the organization's tuition reimbursement policy.
3. Put all of those catchall items under employee enrichment.
4. Budget for training based on the systems under your direct control.
5. Develop select people based on future organizational needs

In Closing

Start a habit of defining training as job specific and development as person specific. This habit will form your budget-basis and help you defend the expenditures your department requires.

Your career can only be enhanced when you are seen as a person who acts to develop people with real world criteria referenced training and development.

There is a risk, you might be promoted, but you'll just have to live with that.

Since you have gotten this far, take a test by answering the following question:

"Where does learning take place?"

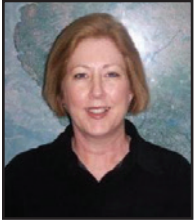
Before September 10th, email your answer to me and for every correct answer I'll donate \$1 to the ILGISA scholarship fund.

As before, I am very proud to know you and always remember: "That I have made mistakes so you don't have to."

Table One: Training Versus Development

	Training	Development
Employee Focus	Training gives the employee specific-tools applicable to current-job-requirements.	The employee is developed for the future organizational content and context. This transfer enables the employee to advance and successfully comply with future-business-requirements.
Organizational Focus	Training is more about organizational tactics. Specific job related actions can be measured. The curriculum is fixed around the job not the person.	Development is more about the organizational strategies; it is about the person's role in the future. The curriculum is fixed around the person not the job.
Management	Management of the training process can be summed up with one question, "Who needs what, by when and why?"	Management of the development process is generally supervisor-to-employee.
Models, methods, practices and resources	Typically closed-ended	Typically open-ended

USGS CORNER



Lidar Acquisition

Shelley Silch

National Map Liaison for Illinois and Missouri

Chief, DIGITS Section, Illinois Water Science Center

US Geological Survey

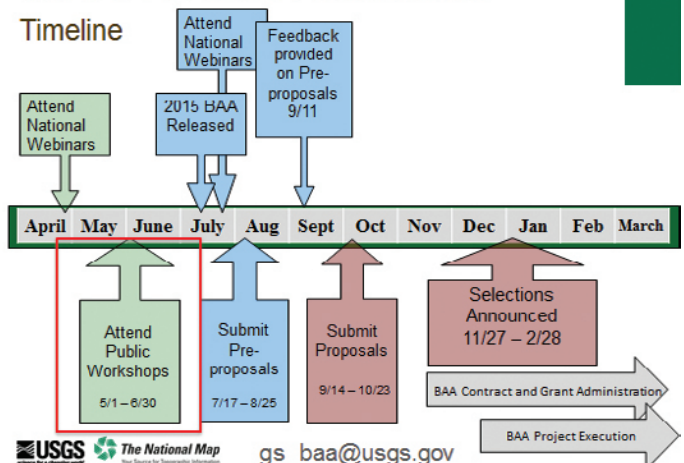
The Broad Agency Announcement (BAA) is the competitive solicitation mechanism that the USGS National Geospatial Program (NGP) is using to select and partially fund lidar acquisition projects in support of the 3D Elevation Program (3DEP). The USGS has advertised a BAA in FedBizOpps (Search for Reference Number: G15PS00558) and Grants.gov (Funding Opportunity Number: G15AS00123) describing lidar data acquisition areas of interest and soliciting partnership proposals. BAA submissions may propose to contribute funds for acquisition through the USGS Geospatial Products and Services Contract (GPSC), or proposals may request funding to support lidar acquisition through partner contracts. Federal agencies, state and local governments, tribes, academic institutions, and the private sector are eligible to submit proposals.

The BAA was put into place to increase visibility and accessibility of 3DEP partnership opportunities with the USGS. This requires a fair and competitive process. To ensure that no one has an unfair advantage over another, National Map Liaisons must recuse themselves from the formulation and direct coordination of BAA project proposals. National Map Liaisons can actively promote the goals, objectives and accomplishments of 3DEP, they can host and promote forums for coordination and encourage the use of the 3DEP Pre BAA - Public Areas of Interest Project Collector Tool to post areas of interest and the SeaSketch viewer (see below) as a means for the stakeholder community to discover potential partners, however they are not able to assist with direct project formulation or partnership coordination prior to project awards. Potential partners are encouraged to continue to engage with others with shared geographic areas of interest. Once projects are selected, National Map Liaisons can assist with the partnership agreements needed to support the acquisition process. Project coordination results in several benefits: Larger area acquisitions are more cost efficient; bringing more cooperators into a project lowers the cost of the data for each partner; and coordination eliminates data duplication and provides better value for the tax payer.

For those familiar with the Lidar acquisition process, you are aware that the entire project lifecycle, from formulation to product delivery is often 18 to 24 months, sometimes longer. The timeline shown on the next page focuses on the near term project formulation, project submission and the selection and notification of a BAA partnership award.

- The items in green reflect the USGS pre-BAA activities, the USGS national webinars, and the focus of the State gatherings (state and regional workshops).
- The items in blue are the Pre-proposal activities which include the release of the BAA, the 2nd set of USGS National Webinars which are designed to provide specific guidance on the BAA evaluation criteria and the application process, the 5½-week pre-proposal submission window and the September 11th date by which all submitters will receive feedback on their pre-proposal submissions. Note that submission of pre-proposals is highly encouraged, but not required. The purpose of requesting pre-proposals is to minimize the labor and cost associated with the production of a detailed proposal that has a minimal chance of being selected for funding.
- The items in rose reflect the proposal submission window which runs from September 14th to October 23rd, as well as, the notification period. Initial project selections will be made by the end of November; notifications will begin dependent on the availability of 3DEP funds. Those projects proposing spring 2016 flights will have first consideration. Awardees choosing to make use of the GPSC will work with a 3DEP and/or GPSC POC to complete the required acquisition documents; Awardees receiving cooperative agreements will work with a USGS grants specialist.

+ 3DEP FY15 BAA / FY16 Awards



11

Goals for the 3DEP program are:

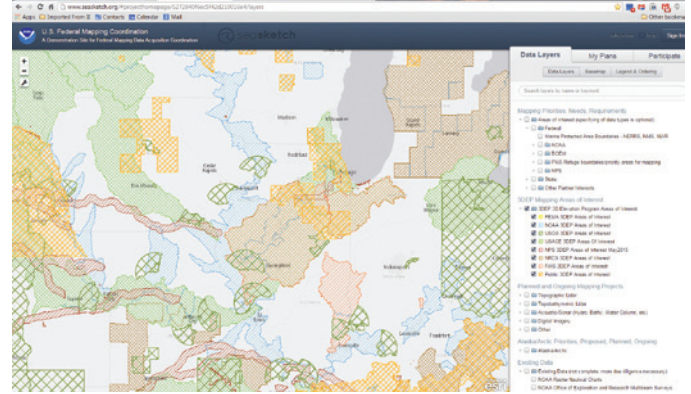
- QL 2* data across the conterminous US that is not more than 8 years old. QL5 data (ifsar) will be collected in Alaska
- Data must adhere to the latest USGS Lidar Base Specification <http://pubs.usgs.gov/tm/11b4/pdf/tm11-B4.pdf>
- Improved cost efficiency by increasing the size of project areas.

Any questions about the guidance or criteria should be directed to gs_baa@usgs.gov

Meetings to describe and provide additional details about the BAA process were held across the nation. A meeting was held in Illinois on May 18, 2015 in Champaign-Urbana for interested parties.

The SeaSketch viewer is a collaborative mapping site set up by NOAA that was originally used for their coastal community partners. In addition, it was used to facilitate coordination of data acquisition following Hurricane Sandy. NOAA has enabled SeaSketch to be used by the entire topographic and bathymetric 3DEP stakeholder community. You will note in the Proposed Mapping Projects that Federal Agencies have entered their areas of interest for lidar acquisition. You will also note under the layer listed as “Public 3DEP Areas of Interest” projects that have been entered using the 3DEP Pre BAA - Public Areas of Interest Project Collector Tool. This tool was made available to the public to encourage development and coordination of lidar acquisition projects.

<http://www.seasketch.org/#projecthomepage/5272840f6ec5f-42d210016e4/layers>



Quality Level	Horizontal Point Spacing (meters)	Vertical Accuracy (centimeters)	Description
1	0.35	9.25	High accuracy and resolution LiDAR
2	0.7	9.25	Medium-high accuracy and resolution LiDAR
3	1-2	<18.5	Medium accuracy and resolution LiDAR – similar to USGS specification version 13 and most data collected to date
4	5	46-139	Early or lower quality LiDAR and photogrammetric elevations produced from aerotriangulated NAIP imagery
5	5	93-185	Lower accuracy and resolution, primarily from IfSAR

Great resources for additional information include:
 The 3D Elevation Program Initiative – A Call for Action: <http://pubs.usgs.gov/circ/1399/>
 USGS NGP Lidar Base Specification V1.2: <http://pubs.usgs.gov/tm/11b4/pdf/tm11-B4.pdf>
 For Further Information Contact: 3D Elevation Program: gs_baa@usgs.gov

ILGISA CONFERENCE PREVIEW

HERE MAP CREATOR

Charles Rymer
 Geographic Analyst II
 HERE

With over 25 years of experience in location content HERE delivers the best, most reliable maps in the world. Our vision is to create maps for life, maps that are richer and more dynamic than ever and are built for how you live, who you are and what you care about, wherever you go.

In order to do this HERE created a tool and program called HERE Map Creator. This tool serves two purposes: it will easily allow for people to report a map problem and it will allow users to edit our map themselves. It will also alert us to

areas that need more attention. Our presentation covers the how to on signing up and how to make edits within the HERE Map Creator tool. We will also discuss our new Community Program. If you cannot wait for the presentation to find out more about our programs please go to www.here.com to check us out.

*HERE Map Creator
 Tuesday, September 15th at 9am in Plaza E*

ARTIFACT DISTRIBUTION ANALYSIS AT NA VCELACH POHANSKO, CZECH REPUBLIC

James McGinty

Recent University of Illinois at Chicago Graduate
Archaeology and GIS Focus

Pohansko, Czech Republic is a Great Moravian (early Slavic) walled enclosure site that is located near the confluence of two major rivers; the Morava, and Dyje. It was primarily occupied in the 9th century and likely played a significant role politically and economically in the region during the height of its occupation. (Machaček et al. 2007: 131-135) Na Vcelach is a recently discovered site located in the northern hinterlands of the enclosure. It appears that the site was contemporary with Pohansko, however the primary function of Na Vcelach is yet unknown.

Excavations began in the summer of 2012, and the artifact provenience was periodically recorded as classified point information using a Leica Total Station. These data were then brought into ArcGIS to be analyzed, with a primary goal of identifying any potential trends in the artifact distribution. The firststep in this was to identify if the artifacts were in a single strata, or multiple. The easiest way of identifying this, was through using the histogram function of trend analysis, in the geostatistical analyst tool kit. The histogram identified there was a slight skew in the artifact distribution, however this was not a significant enough skew to identify a separate strata.

Following the conclusion that there was in fact a single artifact strata, a series of descriptive statistic analyses were conducted on the artifact data. Including density distribution analyses, and Nearest Neighbor Hierarchical (NNH) clustering analyses. Both of these analyses were conducted at several scales, considering both the specific artifact types, and all of the artifacts together. As the goal was to identify not only if there were artifact clusters, but if specific artifact clusters were related to each other. This was accomplished by the overlaying of the two different data sets and intuitively correlating the results. While this exploratory analysis produced interesting results, and has been a somewhat standard artifact distribution analysis technique since the 1970's (Hodder 1976: 1-4). It is recognized that these descriptive statistic methods operate in a two dimensional universe, and therefore the results can only be of limited value, and very potentially could suggest a higher degree of clustering than is present in reality (Clark 1972:15).

In an effort to overcome the shortcoming of the descriptive statistics, an Inverse Distance Weighting (IDW) Kriging, and

Spline of the artifact distribution based off of the elevation of the artifacts. These interpolations were cross compared with the Trend Analysis function in the geostatistical analyst tool kit in an effort to ensure that the data that was produced was not significantly skewed from the original data set. The interpolations were then overlaid with the artifacts and the results from the descriptive statistics. This approach helps to identify if the previously identified clusters show any relation to the elevation of the artifacts. Finally, the Spline was converted into a TIN. This was done in order to make better use of the 3D rendering capability of the software and better represent the variation in elevation the interpolations were displaying.

While the addition of spatial interpolators can help to identify real trends in the artifact distribution, the method must be used with some caution. The trend analysis and interpolations tend to exaggerate the range of data and can therefore misrepresent the diversity of the data set if not carefully considered. However, the exaggeration is as much an advantage as it is a limitation if used properly. It can help to identify if artifacts found in soil features are at different elevations than the rest of the artifacts in the unit. This method can also be used to help plan where to open new excavation units, if digging is going to continue on an adjacent unit. In all, this project was able to show that it is feasible to use microtopographic mapping and interpolation methods to analyze artifact distributions and identify potential trends in the artifact strata, thus helping in the interpretation and planning of the archaeological excavation.

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WHAT YOU NEED TO KNOW ABOUT UAS AND REMOTE SENSING



Mike Tully, GISP
President & CEO of Aerial Services, Inc.

Small UAVs (sUAS, aka “drones”) are an entirely new platform for remote sensing and mapping. The unmanned aircraft systems and software differ substantially from manned systems that have been in use for decades. Now that FAA Exemptions for commercial use are being granted, their importance for commercial activities are growing rapidly.

We have boldly entered a new age of Remote Sensing. Drones are the most important remote sensing technology to come along since ... probably EVER!

For the first time in history, anyone can fly in the national airspace for a few bucks and without need for a pilot’s license. Because of miniaturization and advances in remote sensing, communication, and positioning technologies remote sensing from within our national airspace is easier than ever before.

The techniques and business models used to produce mapping solutions from remotely sensed data are changing too. However, the mapping and photogrammetric principles underlying these activities remain unchanged. Drone practitioners new to remote sensing and mapping need to learn and heed these principles or trouble will ensue.

That said, however, I’m reminded of an old saying: **The ark was built by amateurs, but professionals built the Titanic.** This new unmanned market is characterized by innovators (amateurs). It is experiencing rapid growth and innovation from every quarter.

For the remote sensing professional like me that has been using manned systems for decades, I must learn about new business models that this technology will spawn, and understand why my current business may not work going forward. To those new to remote sensing, they must quickly come up to speed on photogrammetry, accuracy, and the particulars of capturing good data on a platform flying in

an inherently unstable environment! Software is amazing. Software is great. But bad data still bites. Pretty pictures (easily obtained using drones) do not always make accurate or meaningful information.

sUAS are great enablers of remote sensing. Precisely because they are such great enablers, there are many folks hoping to operate these craft and perform remote sensing that know little about this skill and these principles. There are “icebergs” out there and you will surely hit them if you don’t heed the fundamentals of remote sensing and photogrammetry.

Acquisition

Resolving Power



Trimble UX5
400’ AGL

Biography: Mike Tully is the President & CEO of Aerial Services, Inc. located in the heartland of Iowa. He is a certified photogrammetrist, GIS-P, techno-geek, and the head of “Getting Things Done Well” at Aerial Services. Mike is an innovator and thinker. He sees the potential of Unmanned Aerial Systems (UAS) as amazing, revolutionary and disruptive.

*What You Need to Know About UAS and Remote Sensing
Tuesday, September 15th at 10:30am in Plaza G*

LOCAL GOVERNMENT APPS AT THE TOWN OF NORMAL, IL

Cassidy Killian, GISP
GIS Coordinator
Town of Normal, IL

Since the mid 1990's the Town of Normal has been making significant investments in GIS. Up to this point the results of this investment have mostly been datasets, layers, and aerial photography. With limited staff and tightened budgets it seemed impossible to expand the use of GIS in our organization and truly realize the benefits that staff was expecting.

Luckily for us, through the use of ArcGIS Online and the Local Government Solution we are able to rapidly deploy focused applications throughout our organization and get the data in the hands of people that need it and use it the most. Within days of deploying our first applications we were able to streamline workflows both in the office and in the field. Collector for ArcGIS has enabled us to deploy mobile applications that allow staff to collect new data, update existing data, and it has also eliminated the use of paper forms in the field.

Because the Local Government maps and apps are focused on a specific function of government, you can pick your application, download, configure, and deploy in a matter of hours. The benefit of not having to customize allows GIS staff to focus on what they do best.....GIS.

Over the last year we have made giant strides in gaining return on our GIS investments. Through the use web GIS and the solutions offered in the Local Government platform, we are able to take all of that data we have invested in for years and get it in the hands of the people that need it the most. The list of applications we have deployed is growing rapidly and our goal is to deploy at least one application per month. Currently, most of the applications we have deployed focus on our infrastructure and right of way assets. Our web map gallery consists of a Sanitary Sewer Network map, Zoning and Land Use Case map, Concrete Street Conditions, and a Pavement Editor. Our current mobile applications include Fire Hydrant Inspections, Sign Inventory, Tree Inventory, and a Park Facilities Inspection application is in the works. Our future projects lists grows by the day. We are currently working on a series of Story Maps for Community Events and Parks Facilities. Our future application deployments will include Road Closures, Capital Project Planning, Special Event Planning, and a Facilities Management application.

*Local Government GIS at the Town of Normal
Tuesday, September 15th at 9am in Plaza E*

THE EVASIVE HOLY GRAIL OF GIS DATA

Mark Dupree, GISP
Manager of GIS Services
Trotter and Associates, Inc.

We have all heard the adage "you get what you pay for". We all smile and remember all the things that were too good to be true. Free GIS data is sometimes like that. I am always on the lookout for quality data, such as workflows and datasets that have stood the test of time and do my best to integrate that data into my GIS projects.

I usually begin my search with high optimism and a song in my heart. Then reality hits me as I begin seeing the dreaded "This Page Does Not Exist" or "This Page Is Under Construction" message, but I power on as I truly believe that if I keep looking, one of the links will work.

That is when I usually hit the next obstacle. The link works but the data is in a format that I can't convert, only in pdf form, or worse, in a shape file but has a critical piece missing. It's like getting up early to go to work, excited to get caught up and stopping at the only coffee shop in town only to find it closed. You can see and smell the coffee but you can't access it. But being a "half full" kinda guy, I power on.

That is when I find a link that works and the data is in a format that I can easily incorporate into my project. My spirit is high as I realize I have found one of the magical myths of the GIS world. Free quality GIS data that is up to date, in a format that I can use and even metadata. But my excitement fades as I read further down the page and realize that the data has a price tag that I can't afford. Not one to easily give up, I keep on looking for that Holy Grail of GIS data (free quality GIS data).

I am here to say that the data is out there. It does take some searching but it is worth it. Making the most of "Free GIS Data" is a workshop that chronicles my search for usable free GIS data. I highlight some to the Federal, State, County and Commercial sites that have quality, updated GIS data that is easily assessable and has metadata. I will also be reviewing some of the pitfalls and dangers of "free data" along with some of the workarounds that is sometimes needed to incorporate the data into your project. Finally, I will be discussing some of the ways we can help each other make the most of our time and better serve our constituents and the people that we work with every day.

*Making the Most of "Free" GIS Data
Wednesday, September 16th at 9am in Plaza A*

URBAN VEGETATION COVER ESTIMATION USING PIXEL UNMIXING TECHNIQUES BASED ON REGRESSION AND ARTIFICIAL NEURAL NETWORKS

Qing Wang

Department of Geography & Environmental Resources
Southern Illinois University Carbondale

Terrestrial carbon cycle is dominated by surface vegetation cover and, therefore, the estimation of vegetation extent within urban area is required for modern city planning and policy making. Gaining vegetation cover information from medium and coarser spatial resolution images, especially Landsat and MODIS, can make this process more cost-efficient. In this study, I focused on the City of Carbondale area and employed Landsat 5 TM imagery dated on June 16th, 2007 (Fig. 1a). Instead of field data collection, I generated ground truth data from an aerial photo that had a spatial resolution of 1m by 1m acquired on July 10th, 2007 (Fig. 1b).

By using unsupervised classification (k-mean), RGB aerial photo was categorized into 4 classes: shadow areas, grasslands, forests and built-up areas (including bare soil) (Fig. 1c). Due to the shadow issue (RGB aerial photo cannot distinguish water and shadows), water areas were clipped out from aerial photo (Fig. 1c). I generated a fishnet with grid size of 25 m by 25 m (consistent with Landsat) overlapping on aerial photo, from which pixels of each class within each grid was counted. Training samples were designed by randomly selecting one thousand squares from the fishnet, and another two hundred random squares were considered for model validation (Fig. 1d). A two-sample t-test has been used to compare the difference between fraction data with and without shadow (Tab. 1) because it is difficult to categorize shadows into the class from an RGB picture. The t-test results indicated there were no significant differences between these two data.

In this study, five model types were established, including linear regression with total 6 TM bands, linear regression after BIC, logistic regression based on most information band composite, polynomial regression after BIC, and feed forward artificial neural network with resilience backpropagation learning algorithm. The statistical information of first four traditional regression interpolation models were attached in Tab. 2. The vegetation cover predictions were shown by Fig. 3. A comparison of the model predictions was conducted by visual interpretation the predictions and statistical information displaying on Taylor diagram (Fig. 4). I found that the best prediction came from ANN model with 4, 8 and 6 neurons for each of the three hidden layers respectively. All five models underestimated the sample variance, but ANN, logistic regression and linear after BIC had the relatively closed variance. Although the root mean square of full linear regression greater than after BIC, after BIC described more variance from validation test. The polynomial regression gave the worst prediction, but it looks better than the logistic one.

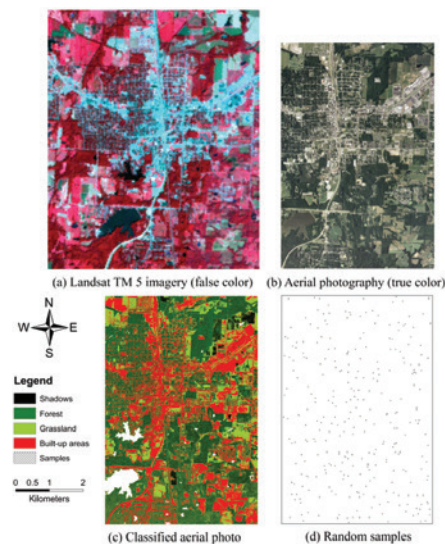
Table 1. Student t-test:
Two-Sample Assuming Unequal Variances

	<i>Forest fraction without shadows</i>	<i>Forest fraction with shadows</i>
Mean	0.517550413	0.6032
Variance	0.147156494	0.140738829
Observations	20	20
Hypothesized Mean Difference	0	
Degree of Freedom	38	
t Stat	-0.7138763	
P(T<=t) one-tail	0.239832869	
t Critical one-tail	1.68595446	
P(T<=t) two-tail	0.479665737	
t Critical two-tail	2.024394164	

Figure 1.

(a) Landsat 5 TM imagery of study area (Carbondale, Illinois) with pixel size of 25m by 25m, captured on June 16th, 2007.

(b) aerial photo of part of study area with pixel size of 1m by 1m, picked up on July 10th, 2007.



(c) aerial photo classified into four categories (dark green is forest, light green is grasslands, red is built-up areas, and the blanks are water areas had been cut out).

(d) 200 training samples (squares) randomly selected for the validations and comparison of models.

Table 2. Basic Statistical Information of Four Traditional Regression Models

	<i>Linear regression with all bands</i>	<i>Linear regression with BIC</i>	<i>Logistic regression with band 3,4 & 5</i>	<i>Polynomial regression with BIC</i>
Total F-statistic	136.3	110.3	\	48.61
Total F-statistic P value	< 2.2e-16	< 2.2e-16	\	<2.2e-16
R-squared	0.4516	0.3072	\	0.4715
Adjusted R-squared	0.4483	0.3044	\	0.4618
BIC	-2774.18	-2786.2	60.594	-2806.03
Goodness of Fit (X^2)	\	\	4.0447	\
Goodness of Fit (P value)	\	\	0.8531	\

Figure 2. Matrix of spectral space plot (each plot describing the spectral space of one band vs. another band), where band 1, 2 and 3 show highly co-linearity and so do band 5 and 7.

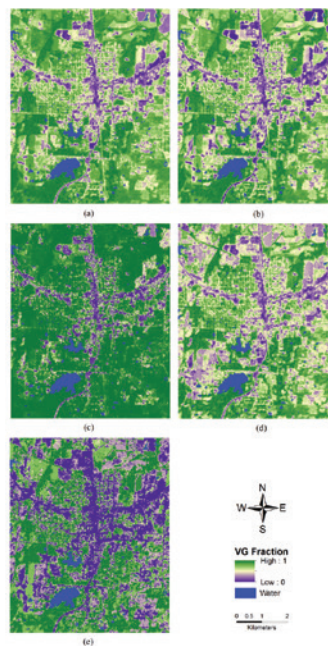
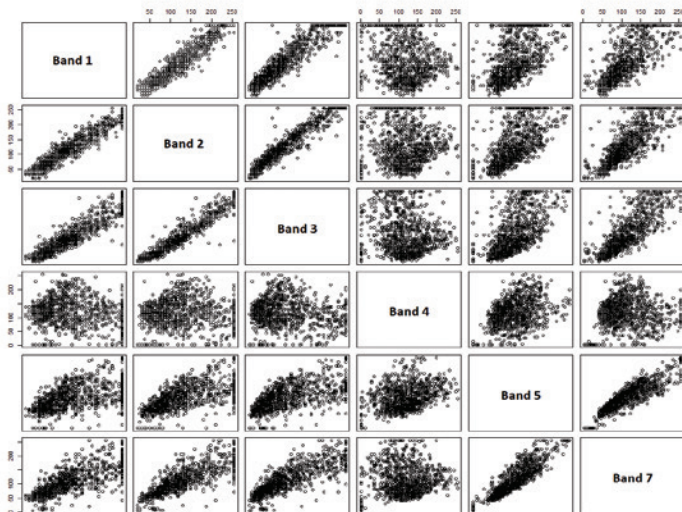


Figure 3.

Vegetation cover fraction predicted from:

- (a) linear regression using all TM bands.
- (b) linear regression model after BIC.
- (c) logistic model using TM band 3,4 and 5,
- (d) polynomial regression after BIC.
- (e) the best ANN model with 4, 8 and 6 neurons for each of the three hidden layers respectively.

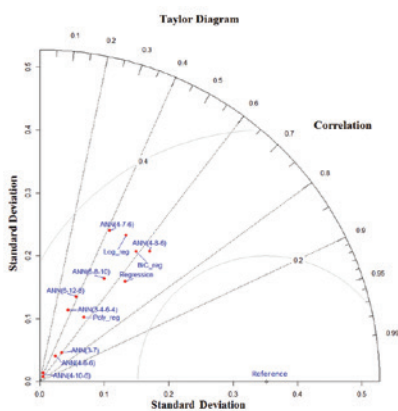


Figure 4.

Taylor diagram for displaying pattern statistics of 11 model predictions (plotted as red dots) vs. aerial photo (circle with tag "Reference"). The tag "Regression" represents linear regression model and "ANN(4-8-6)", for example, is the ANN model with 3 layers and 4,8 and 6 neurons for each hidden layer. In this diagram, the distance along radius represents data standard deviation (e.g. ANN(4-7-6) has the standard deviation of about 0.25), the sectors with different angle represent the correlation to the reference data (e.g. the correlation of ANN(6-12-6) vs. reference is 0.4) and the distance from red dot to reference dot is the root-mean square error (RMSE) of model prediction corresponding to reference data (RMSE("ANN 4-10-6") = 0.5344323, RMSE("ANN 4-6-6") = 0.5899917, RMSE("ANN 3-7") = 0.5928243, RMSE("ANN 6-8-10") = 0.3076981, RMSE("ANN 4-9-6") = 0.5537709, RMSE("ANN 4-7-6") = 0.4727219, RMSE("ANN 4-14-8") = 0.3027403, RMSE("ANN 6-12-6") = 0.5088864, RMSE("ANN 3-4-6-4") = 0.333094, RMSE("ANN 4-8-6") = 0.3006921, RMSE("BIC_reg") = 0.315632, RMSE("log_reg") = 0.34511, RMSE("poly_reg") = 0.3533624, RMSE("linear_reg") = 0.3001193).



MEET THE 2014-2015 ILGISA BOARD



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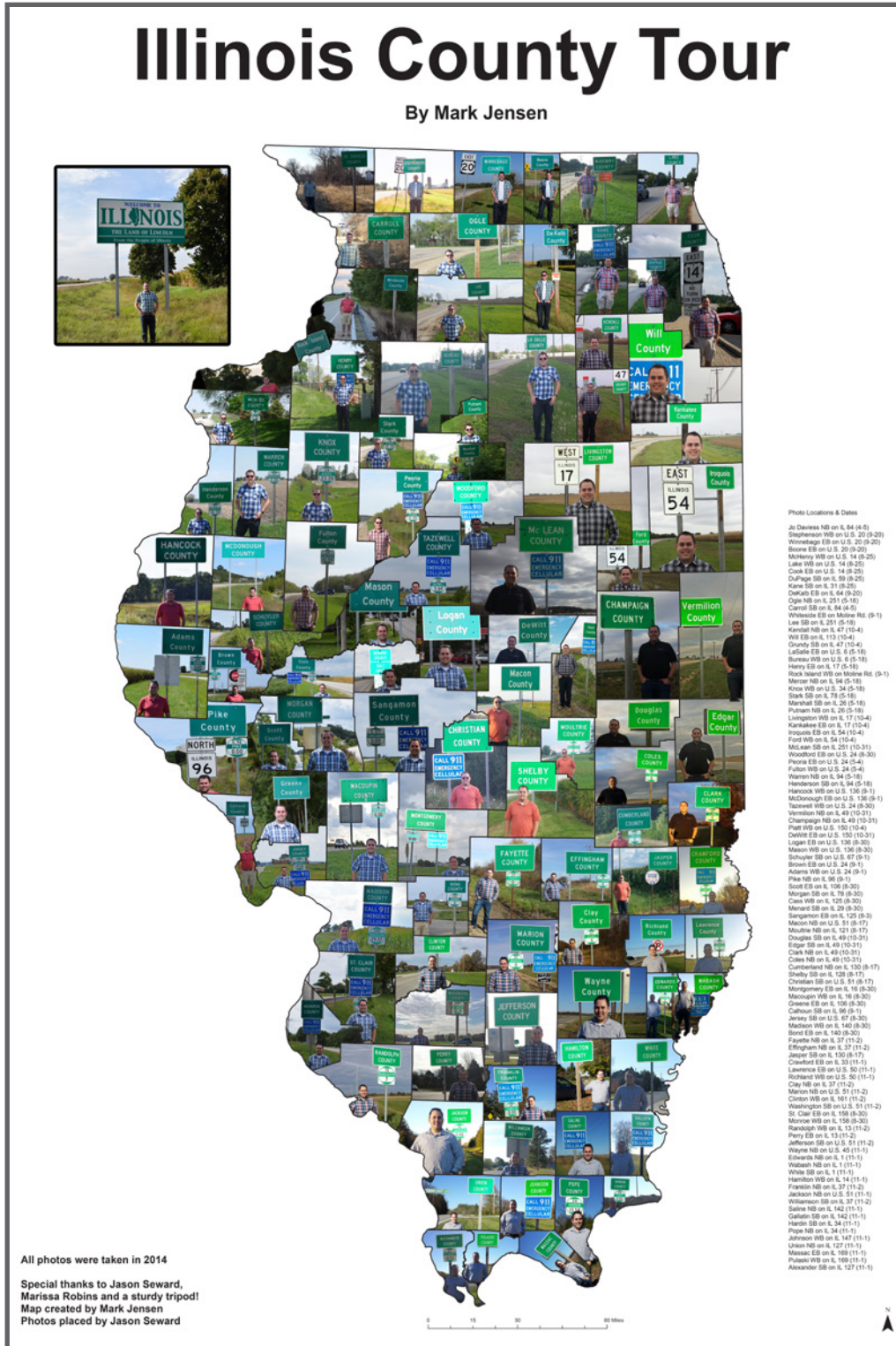
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Term Expires: 2015

2015 ILGISA MAP COMPETITION - PROFESSIONAL ENTRY WINNER!

Theme: Geospatial Hobby Exploration
 Winning Entry: Illinois County Tour
 By: Mark Jensen, Rockford Publishers



MEMBERSHIP COMMITTEE



Ryan Meekma
Membership Committee Chair

The Membership Committee had a successful year launching several new initiatives and continued to support requests from the Membership. As of August 18th there are 403 ILGISA members. This number will most likely climb as we approach our Annual Conference to be held in Springfield. Membership dues are used to support our day to day business, cover web-site expenses, and offer training opportunities. Thank you for your continued support.

We have introduced a new membership category called an Organizational Membership where:

“An Organizational Member shall be any organization (public, private, or not-for-profit) with an interest in Geographic Information Systems (GIS) or related technology. An Organizational Member will be comprised of named Active Members that are designated by the paying Organization. The Organization will retain ownership of each Active Membership and will have the right to replace or add named Active Members at any point in time with written notice to and approval from ILGISA. Named memberships are transferable to another employee as refunds are not available. Organizations will receive one invoice for all named Active Members.”

This has been incorporated into a new version of the By-Laws and has been introduced to the ILGISA Membership via the formal voting process as described in the Association’s By-Laws. This was requested by many members and their employers to make the invoicing process easier.

The Membership Committee would like to extend a special thank you to all those that took the time to participate in the 2015 Map Competition. The theme for this year’s Competition was “Geospatial Hobby Exploration” which had a total of 17 entries.

Congratulations to all of our winners! Mark Jensen, a GIS Technician for Rockford Map Publishers took first prize among the professional entries. He visited each of Illinois 102 counties and had his picture taken next to each county’s sign. Matt deemed this “Project 102” and created a great map displaying his results (figure 1).

Winners from the student entries, all from DePaul University, include: Shizhi Huang (James) “Land-use Design and Public Health: An Analysis of Relationships between Green Spaces with Obesity, Diabetes and Related Health Problems in Chicagoland”, Michael Bussey “Photogrammetric 3D Point Cloud Generation”, and Maggie Baker “Most Suitable Locations for New Affordable Housing in Chicago”. All maps can be found on the ILGISA web-site.

Please take a minute to email contact@ilgisa.org or contact the Membership Committee with ideas for the 2016 Map Competition. Prizes are available and the winning entries will be on display at the Annual ILGISA Conference and on the ILGISA Web-Site. This is a great opportunity to use your cartography skills and show off your work.

If you are interested in volunteering on the Membership Committee or have any questions please contact rmeekma@ilgisa.org

FIGURE 1

Illinois County Tour

By Mark Jensen



The Membership Committee actively recruits those who foster the mission and vision of ILGISA. The Committee focuses on increasing membership involvement, membership numbers, and student outreach.

THE 2014-2015 OUTREACH COMMITTEE



Leanne Brehob-Riley
lbrehob-riley@ilgisa.org
ILGISA Board Director, Outreach Committee Chair

The 2014-2015 Outreach Committee accomplished a number of items this past year. These accomplishments can be broadly grouped into the following four categories ILGISA Website, GIS Notes, the ILGISA Professional Network (IPN), and Social Media.

ILGISA Website

One of the first items the Outreach Committee tackled was to review and launch the new ILGISA website. The website is built upon configurable association management software that simplifies the editing and creation of web content. In addition, an integrated back-end database reduces the administrative time needed for event registrations and membership renewals. The functionality and resources provided on the website will continue to develop and evolve with input from the ILGISA membership and the continued efforts of the Outreach Committee.

GIS Notes

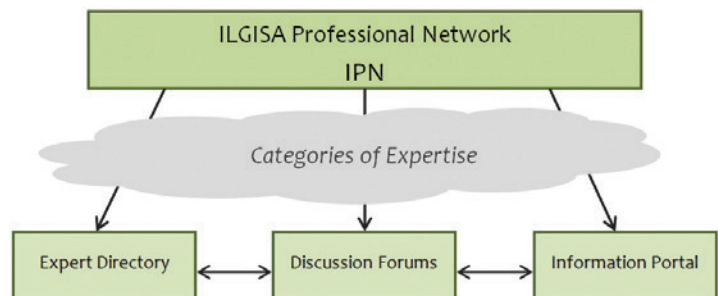
The ILGISA Board of Directors asked the Outreach Committee evaluate the future of GIS Notes. Due to the difficulty in soliciting articles and an increase in the ILGISA social media presence, there were concerns the twice a year periodical was no longer relevant. The Committee determined that while social media plays an important role in keeping members engaged and informed of upcoming events, the role of GIS Notes is to provide a more substantive outlet for ILGISA. GIS Notes needs to reclaim itself as the “voice of ILGISA” publishing articles about current geospatial trends, promoting member projects, federal initiatives and grant opportunities. In addition, GIS Notes should be the conduit from which the ILGISA Board provides current and potential members progress reports towards the established goals and new initiatives of ILGISA; the device the Board uses to communicate decisions, discussions, and progress to its membership.

What actions have been taken to resuscitate GIS Notes?

- GIS Notes is now publically distributed throughout the geospatial community. Increasing its audience provides a wide-variety of benefits to ILGISA and its membership including higher quality articles, increased exposure to develop a more diversified membership, etc.
- Each ILGISA committee chair is now required to provide an article that communicates committee decisions, rationale, and progress toward the over-arching goals and objectives of ILGISA.
- The article submission process has been streamlined with development of a GIS Notes template and an exclusive GIS Notes email address (GISNotes@ilgisa.org). The template is available for download on the ILGISA GIS Notes webpage (<http://www.ilgisa.org/gis-notes.html>).

IPN

Over the last several years ILGISA has worked to develop a program to connect the ILGISA members. The program needed to provide a platform that encourages member communication between and among the varied geospatial disciplines with minimal administrative oversight. The IPN (ILGISA Professional Network) is result of these efforts. The IPN provides information outlets from which members can obtain and/or disseminate support for various areas of expertise. The information outlets include an expert directory, discussion forums and, an information portal. These outlets may be used independently or in combination with one another. The IPN program is designed to be self-sustained through member participation.



IPN diagram

For more information on the IPN see the ILGISA website (www.ilgisa.org).

Social Media

ILGISA has had a social media presence for a number of years. The Outreach Committee has worked to expand and formalize this presence. An ILGISA Facebook account was added to its existing Twitter and LinkedIn accounts. Hootsuite, a social media tool, is now used to assist with the management of these accounts. Hootsuite allows posts to be scheduled in advance of an event. In addition, the Committee is developing a social media plan. The plan will provide direction to streamline content that consistently promotes ILGISA events, member accomplishments, and other information pertinent to geospatial technology professionals and users.

Acknowledgements

These accomplishments were made possible through the work of the CM Services staff and Outreach Committee members.

2014-2015 Outreach Committee Members

Greg Newton	Gewalt Hamilton Associates
Keisuke Nozaki	Western Illinois University, Former ILGISA Board Member
Jeff Palmer	Learning & Technical Strategies, Inc
Dave Peters	Winnebago County
Eric Venden	Village of Gurnee, ILGISA Board Member
Liz White	Elmhurst Park District
Micah Williamson	Cloud Point Geographics

It was a pleasure working with each and every one of the committee members. I greatly appreciate their insight, enthusiasm, and dedication.

NOTE: This committee is the combination of what once was the Publications and Website Committee.

The Outreach Committee communicates the mission and vision of ILGISA to non-members, as well as facilitates all communication between all Board activities and membership. The committee utilizes our website, publications (including GIS Notes), and other means to promote our organization.

PROGRAM COMMITTEE



Lucy Stanfield
lstanfield@ilgisa.org
ILGISA Program Committee Chair



ILGISA Annual Conference
September 14 - 16, 2015
Springfield, Illinois

Join your friends and colleagues at the main GIS training event of the year!

Featuring...

Our Keynote Speaker, Christian Carlson from Esri
Our Plenary Speaker, James K. Joseph from the Illinois Emergency Management Agency

Come to Springfield for:

- 60 educational presentations on LiDAR, Python, UAVs, Precision Ag, Damage Assessment apps and more
- Workshops on Surveying, Python, GitHub, & Javascript
- Esri's Hands On Learning Lab featuring their latest apps and software
- Dynamic exhibits from Seiler, AOS GIS, Latitude Geographics, Spatial Connections, Williams Aerial & Mapping, and 12 other vendors

Stay for our networking events:

Monday Night Social at



Tuesday Night Networking Reception
with door prizes!



#ILGISA2015

Tweet your conference experience and win a prize!

ILGISA will award a daily prize to the attendee with the most #ILGISA2015 tweets on Tuesday and Wednesday of the conference. If you're not on Twitter now, take this opportunity to get connected, follow @ILGISA, and share your thoughts & pics from the conference this year.

REGIONAL MEETING RECAP

The ILGISA Regional meetings were a resounding success this year! ILGISA members and prospective members gathered to share their latest projects and network with other GIS professionals around the state. Stay tuned for a presentation archive this fall on ilgisa.org.

Our 5th regional meeting will be held on November 10th at the I-Hotel in Champaign.

SIU's Department of Geography hosted 45 people at our 1st regional meeting of 2015 on February 19th.



DePaul University's Department of Geography hosted almost 100 people at the Chicago Regional Meeting on April 20th.



The WIU GIS Center hosted 45 people at the Macomb Regional Meeting on May 14th showcasing their Topography Sand Table!



DuPage County GIS hosted 51 people at the Wheaton Regional Meeting on June 6th including a tour of the Emergency Operations Center and a Phantom drone demonstration.





= Map Nerds take over Chicago!

ILGISA co-hosted a booth at the Association of American Geographers meeting in Chicago with the Geographic Society of Chicago and the Illinois Geographical Society. Almost 9,000 geographers from around the world attended the meeting, and we had a blast taking pictures and encouraging selfies in our pop-up photobooth. Here are some of the geo-celebrities who stopped by the booth:

ILGISA @ILGISA · Apr 21
 GIS Bill Hodge from @GISCI_GISP stopped by the ILGISA booth...before the #AAG2015 exhibit hall opened! #MapNerd



ILGISA @ILGISA · Apr 22
 GIS Susan Holderread from the IL Geog Society took a #selfie, and so should you! Photo bombed by the Kent State squirrel!



Lucy @lucygeog · Apr 24
 Mike DeMers loves Chicago style pizza...how about you? @ILGISA @GeoSocietyChi #AAG2015



ILGISA @ILGISA · Apr 21
 GIS @rushgeo Johnathan Rush from the UIUC CyberGIS Center stopped by the @ILGISA booth! #AAG2015 #MapNerd #Selfie



Lucy @lucygeog · Apr 24
 Cindy Brewer stopped by the @ILGISA @GeoSocietyChi IGS booth this morning! #AAG2015



NOTE: This used to be called the Conference Committee. The Program Committee advocates, plans and promotes educational programs for the geospatial industry. The committee oversees the planning of the annual conference, regional workshops and other educational programming.

FINANCE COMMITTEE

Nicole Gattuso
 ngattuso@ilgisa.org
 ILGISA Finance Committee Chair

The ILGISA Finance Committee has recently reviewed and evaluated the phone conferencing plan, regional meeting expenditures, and membership renewals. ILGISA uses phone conferencing to undertake much of the business of the organization. After evaluating the current plan, the Finance Committee made a recommendation to the Board to change vendors and plan type. This should save the organization ap-

proximately \$2,000/year. This year, ILGISA began organizing regional meetings to best provide opportunities for its members to participate and to reach new members. As of July, these meetings have led to at least 18 new memberships. The Finance Committee will continue to evaluate the revenue and expenditures of these meetings. The Committee is currently planning the preparations for next year's budget.

EDUCATION COMMITTEE

Wendy Sheppard
 wsheppard@ilgisa.org
 ILGISA Education Committee Chair

In the last few months, the Education Committee has been busy working on coordinating training events. An ESRI Instructor-Led training event “Introduction to ArcGIS Pro for GIS Professionals” was conducted in conjunction with the Wheaton Regional Meeting back in early June.

The Education Committee has reached out to the GIS community to develop and conduct a Land Surveyor\GIS workshop series. The first work shop **Bridging the surveyed gap: How land surveying data works with GIS** will be presented at the Annual Conference Tuesday, September 15th. Kory Allred and Todd Horton are the instructors for this workshop.

- **Kory Allred**, P.L.S., E.I., M.S., is a licensed Professional Land Surveyor in Illinois and the primary Geomatics Instructor at Northern Illinois University.
- **Todd Horton**, P.E., P.L.S., is an associate professor at Parkland College in Champaign, Illinois.

The deadline for the ILGISA scholarship has come and gone. The Education Committee are in the process of reviewing the applications to award a \$1,000 scholarship to one recipient which will be announced at the Annual ILGISA Conference.

We have a few items that committee are currently working on.

- We are investigating what it is going to take for the workshops that are conducted at the Annual Conference to be accredited so that PDH/LU/CEU hours can be given to those who attend. We will keep you updated.
- We are still looking for people to conduct webinars that can be shared with ILGISA members free of charge.
- The Student\Educators subcommittee has been discussing new ways to engage students and educators with ILGISA.

Please contact me (WSheppard@ILGISA.org) if you are interested in joining the Education Committee or have any suggestions for the Education Committee.

The Education Committee develops and plans educational material available for all members, both student and professional. The Committee plans conference workshops, ESRI training classes, webinars and other specialized training classes. In addition, the Committee is charged with awarding the ILGISA student scholarship.

CALENDAR OF EVENTS

September 14 - 16, 2015

ILGISA Annual Conference
“GIS...on the move!”

Crowne Plaza Springfield
3000 South Dirksen Parkway
Springfield, Illinois 62703

Join fellow GIS professions from throughout the state of Illinois at this year’s Annual Conference! Multiple workshops, trainings, and session will take place throughout this 3-day conference in Illinois capital, Springfield. This year’s conference is incorporating social events and field trips for the first time.

November 10th, 2015

ILGISA Regional Meeting/University of Illinois GIS Day Event

iHotel and Conference Center
1900 S. 1st Street
Champaign, IL 61820

November 18th, 2015

GIS Day

Celebrate GIS Day and Discover the World Through GIS

GIS Day is an international forum for users of geographic information systems (GIS) technology to demonstrate real-world applications that are making a difference in our society.

GIS Day is One Fun Day to...

- Celebrate GIS with everyone
- Discover and explore the benefits of GIS
- Showcase the uses of GIS
- Build and Nurture you GIS community

BECOME A MEMBER OF ILGISA

Become an ILGISA member to network with colleagues and participate in educational opportunities designed to meet the needs of an organization's decision makers, geospatial users, and advanced geospatial practitioners

Apply online to become an [ILGISA Member](#)

OR

Apply by mail using the [ILGISA Membership Application](#) (also found on the right side of this page)

Who should join?

ILGISA membership is for anyone who uses, acquires, maintains, analyzes or distributes spatial "map" data, is interested in geospatial technologies, plays an active role in the Illinois geospatial community, or is pursuing a geospatial career.

ILGISA strives to offer a wide-variety of high-quality, low-cost programs that educate and inform our members. ILGISA programs include an annual conference, regional meetings, training events, and webinars that address the ever-evolving geospatial technologies, applications and standards.

Member Benefits

- Enjoy reduced rates for ILGISA conferences and workshops.
- Receive *GIS Notes*, a biannual newsletter showcasing activities of the Illinois GIS community.
- Access to the annual membership directory and other resources via the ILGISA Member Only forum.
- Receive the weekly newsletter that highlights upcoming GIS educational events within Illinois.
- Build your knowledge-base through GISP-certified professional development opportunities.
- Network with GIS professionals in and throughout Illinois and the Midwest.
- Interact with the Illinois GIS community through the ILGISA LinkedIn group and via Twitter.
- Serve on ILGISA committees with other GIS community leaders; promote GIS technologies within Illinois.

For more information go to www.ilgisa.org



Illinois GIS Association Membership

Please complete the form below and return to:

Illinois GIS Association

800 Roosevelt Road
Building C Suite 312
Glen Ellyn, IL 60137

Name: _____

Title: _____

Organization: _____

Address: _____

City, State, Zip: _____

Phone: _____ Fax: _____

E-mail: _____

Membership Categories

The membership year is a calendar year; membership expires on December 31. Dues statements will be sent to current members at least three months in advance. Active Members' renewal dues are to be paid prior to March 31 of that year or they will be considered lapsed.

Active Membership - \$50

Available to professionals who use GIS technologies. Special member rates are available for all conferences and workshops.

Lapsed Membership (renewal after March 31 of that year) - \$75

Lapsed members will have to pay the Lapsed Member rate of \$75 to re-instate the membership. Once a membership is re-instated, the member is eligible for all membership benefits.

Student Membership - \$10

Available to any full-time student enrolled in a post-secondary institution and interested in GIS. A letter on institution letterhead from a department chair verifying student status is required with the application.

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