

2010 Intermountain GIS Conference Workshops

Monday, April 19 - Friday, April 23

Workshop Schedule

Monday Workshops, April 19

1.	Introduction to Geographic Information Science and Systems: What You Should Know Before Turning on the Computer	8:00 AM – 5:00 PM	\$ 140.00
2.	Python Programming	8:00 AM – 5:00 PM	\$ 140.00
3.	Grant Proposal Writing	8:00 AM – 5:00 PM	\$ 140.00
4.	Field Data Collection; ArcPad for Mobile GIS	1:00 PM – 5:00 PM	\$ 70.00

Tuesday Workshops, April 20

5.	Iron GIS Tech; Mobile GIS Solutions	8:00 AM – Noon	\$ 70.00
6.	Applying for GISP Certification	8:00 AM – Noon	\$ 70.00
7.	Using Open Source GIS for Building Web Mapping Solutions: Open Geostack	8:00 AM – Noon	\$ 70.00
8.	Project Management; The Role of the Project Manager	8:00 AM – Noon	\$ 70.00

Two Day Workshop, Monday and Tuesday, April 19-20

9.	Introduction to ArcGIS Server	8:00 AM – 5:00 PM	\$ 785.00
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Friday Workshops, April 23

10.	Introduction to the Open Source Map Window GIS Project	8:00 AM – Noon	\$ 70.00
11.	Creating WebGIS Mashups with ArcGIS Server	8:00 AM – 5:00 PM	\$ 140.00
12.	Intro to GIS using ArcGIS	8:00 AM – 5:00 PM	\$ 140.00
13.	Spatial Analysis	8:00 AM – 5:00 PM	\$ 140.00
14.	Data Modeling and Database Design	8:00 AM – 5:00 PM	\$ 140.00

To register for a workshop go to the conference registration page.

Workshop Abstracts

1. Introduction to Geographic Information Science and Systems: What You Should Know Before Turning on the Computer

Monday, 8:00 AM – 5:00 PM Cost \$140.00
Presenters; Team, TBA

This workshop is designed for managers or beginning GIS users who want an introduction to the basic concepts and fundamentals of GIS. The workshop provides an overview of fundamental GIS concepts including; GIS applications, spatial data principles and models, analysis concepts, GIS products and output, and project design and management. This workshop is a good introduction to topics and ideas that will be presented during the conference. This workshop provides a knowledge base that is important for all GIS professionals, regardless of the software environment they will be working in.

2. Python Programming

Monday, 8:00 AM – 5:00 PM Cost \$140.00
Presenter; Scott Story, State of Montana

The content of this workshop will vary from material appropriate for the Python geoprocessing novice to content more appropriate for someone with some Python programming experience. The first half of the workshop will target the user that has very little or no experience with the ArcGIS geoprocessing framework. More seasoned veterans of Python may still benefit from this portion of the workshop as we will cover some “best practices” along the way. The workshop will include a mix of lectures, demos, and hands-on exercises. Some programming experience would be helpful, but is not required to understand the content of this portion of the workshop. We will introduce the user to the geoprocessing (GP) object, and examine different ways that its functionality can be accessed: the command line, ArcToolbox, Modelbuilder, and finally Python scripting. We will introduce participants to the basics of the Python language, tell them how to get and install the correct version of the PythonWin IDE, explain how to use the IDE, and explain how to instantiate the GP object in Python. Participants will be exposed to the GP Model Diagram, learn how to read it and use it in conjunction with the ArcGIS help syntax guides. Much of the workshop will be spent examining several of the key GP objects, including: the Describe Object, the Enumeration Objects, and the Cursor Objects. Methods of flow control in Python will be covered in this part of the workshop. The overall focus of the first half of the workshop will be to learn how to accomplishing basic geoprocessing tasks using Python Scripts.

The second half of the workshop will delve into more advanced geoprocessing through Python scripts. This portion of the workshop will also include a mix of lectures, demos, and some hands-on experience. Some experience with Python is highly recommended. Those participants that attend the first part of the workshop may benefit from this second portion by being exposed to the myriad possibilities exposed through Python scripting but

are not expected to be able to walk out of the workshop with the knowledge to perform all of the scripting techniques demonstrated. Some of the topics that will be covered in this part of the workshop include: more extensive exploration of elements of the GP object (e.g., environment parameters), debugging techniques, making scripts dynamic, running scripts from Arctoolbox, documentation of tools, more advanced Python data types, some helpful Python modules, and interacting with other programs such as the R statistical computing language. We will also briefly discuss our experiences porting scripts and tools to the ArcGIS Server environment as published services. We will end with some informed speculation about what the future holds for Python in ArcGIS.

Participants of this workshop will take away different amounts of new knowledge depending on prior experience. We will tailor the workshop content to address the level of understanding of the majority of participants to the extent possible. We expect that novices of Python programming will leave session with enough understanding to start writing simple Python scripts and to understand where to go to learn more. Those participants that arrive with some Python experience are expected to leave the session with some tips and tricks that will help to streamline their geoprocessing endeavors, make their scripts more flexible, and open their eyes to the myriad possibilities (and time savings) of geoprocessing with Python scripts.

3. Grant Proposal Writing

Monday, 8:00 AM – 5:00 PM Cost \$140.00
Presenter; Janet Cornish, Community Development Services of Montana

The ability to write winning grant proposals is becoming increasingly important to GIS professionals. At the same time, competition for funding has become more brisk while the types of projects that are funded, cycles of giving and fund raising strategies are constantly changing. This full day seminar will provide participants with key strategies to help them put their best foot forward while "demystifying" the grants process. The seminar will offer a step by step approach to preparing successful proposals including:

- Developing capacity
- Assessing Need and Setting Priorities
- Identifying Projects
- Identifying Grant Sources and Associated Requirements
- Preparing Strong Proposals
- Preparing Budgets
- Managing Successful Programs

Janet Cornish is a community development consultant, working in the areas of land use planning, housing, downtown redevelopment, municipal finance and organizational development. She presents seminars in grant proposal writing throughout the state and region, and is on the adjunct faculty of Montana Tech where she teaches courses for the Professional and Technical Communications and Liberal Studies Departments.

4. Field Data Collection; ArcPad for Mobile GIS

Monday, 1:00 – 5:00 PM Cost \$70.00
Presenter; Jackson Beighle, Electronic Data Solutions

This half-day workshop will focus on taking GIS from the office to the field using new technologies from Trimble and ESRI. The workshop will focus on ArcPad software and using the ArcPad Data Manager Extension to manage the flow of GIS data to and from the field. We will incorporate Trimble GPScorrect and GPS Analyst software for those who intend to post process the data from ArcPad. Participants will learn about personal geodatabase domains and how they benefit the ArcPad field user. The workshop will feature new technologies from leading manufacturers such as Laser Technologies, Juniper Systems and Ricoh. Participants will gain valuable hands on experience during a two-hour field session.

5. Iron GIS Tech; Mobile GIS Solutions

Tuesday, 8:00 AM – noon Cost \$70.00
Presenters; Jackson Beighle, Electronic Data Solutions
Glenn Vlass, CartoPac Field Solutions

This half-day workshop from Electronic Data Solutions and CartoPac Field Solutions focuses on office to field technology to easily configure and deploy a user-friendly mobile GIS without any programming. The content is applicable to anyone involved in collecting, managing, or maintaining data from the field. Participants learn about integrating a CartoPac solution with ESRI ArcMap, ArcSDE and ArcGIS Server and building a standalone web-based solution. The workshop offers a unique opportunity to see a GPS-enabled solution that will ultimately save your projects time and money.

Who Should Attend? Anyone involved with collecting, managing, or maintaining data collected in the field. Everyone from upper management to field technicians.

6. Applying for GISP Certification

Tuesday, 8:00 AM – noon Cost; FREE
Presenters: Kris Larson, GISP, CDM
Sheila Wilson, Ph.D., GISP,
Executive Director, GIS Certification Institute

A GISP is a certified Geographic Information Systems Professional who has met the minimum standards for ethical conduct and professional practice as established by the GIS Certification Institute (GISCI). GISCI certification requires achievement in three areas: educational achievement, professional experience, and contributions to the profession. MAGIP endorsed the GISP certification in April 2009 as well as the GISCI organization which offers a positive method of developing value for professionals and employers in the GIS profession. In December 2009, the Montana Land Information Act Council (MLIAC) also endorsed this professional process.

This workshop will cover the process of applying for GIS Professional Certification, and help applicants get started on the process of applying for their GISP. MAGIP and GISCI are sponsoring this workshop for FREE. If you have registered for the conference and would like to add this workshop simply send an email to magip.mt@gmail.com to get registered for the GISP workshop.

7. **Using Open Source GIS for Building Web Mapping Solutions; Open Geostack**

Tuesday, 8:00 AM – noon Cost \$70.00
Presenter; Tim Schaub, OpenGeo.Org

The geospatial software domain abounds with open source options. Which ones work? How do open source components integrate with traditional proprietary GIS? How can you use open source software to publish your data on the web?

This workshop will give participants an overview of open source geospatial software and help you determine how you can meet your GIS needs by integrating freely available software into your stack. We'll look at taking geospatial data from the desktop to the web, focusing on a single geostack: a PostGIS enabled database, Quantum GIS on the desktop, GeoServer publishing to the web, and an OpenLayers based web client.

Participants will work through exercises demonstrating the use of each of the components in the open geostack. We will discuss how proprietary components can inter-operate with open components through open standards - letting you see how to integrate ArcSDE, ArcGIS Server, or ArcGIS Desktop with open source software.

Participants should have experience with GIS software and data. Some knowledge of web based technologies will be a benefit. Participants will use workshop machines with all the required software installed and will leave the workshop with a complete set of software ready to be installed on their own machines.

8. Project Management ; The Role of the Project Manager

Tuesday, 8:00 AM – noon Cost \$70.00
Presenter; Chuck Diaz, Montana Project Management Office

This Workshop is intended to be an introduction to the field of project management. The primary objective of this workshop is to acquaint attendees with a broad basic overview of project management, and the role of a project manager.

In this workshop the attendee will learn: Skills that will be acquired from this workshop:

- What “project management” means.
 - What the context of modern project management is.
 - What the five major project management process groups are and how to successfully manage your project through them.
 - What the triple constraint is and how it affects the project manager.
 - What a project plan is and how to effectively develop it.
 - How to gain commitment to the project plan.
 - How to efficiently execute the project plan.
 - How to define scope creep and to minimize or eliminate it.
 - How to develop realistic project schedules.
 - How to develop an effective project control system.
 - How to efficiently close out a project.
- Understanding of what project management is and is not.
 - Understanding of the project manager's functions in a matrix type organization.
 - Understanding of the five project management processes and the role of the project manager within these processes.
 - Understanding of the “triple constraint” concept and how it is applied.
 - Basic project plan development.
 - Understanding of the work breakdown structure and how it can organize and how it can define the total scope of a project.
 - The ability to:
 - Develop a basic project schedule.
 - Understand the importance of the project schedule’s critical path.
 - Organize project teams using organizational breakdown structures.
 - Know when and how to conduct efficient project status review meetings.
 - Apply basic project scope management techniques.
 - Apply basic project risk management techniques.
 - Ensure commitment to the project through the use of participative management.
 - Conduct a lessons learned review at the end of a project.

About the Presenter

Chuck Diaz MBA, MSMPM, CSM is a Master Project Manager with over 27 years of experience in the field of project / subcontracting management, engineering and IT. During this time he has managed projects and subcontracts ranging in value from \$2 million to \$400 million by successfully directing multifunctional, multicultural project teams. Mr. Diaz has had the opportunity to directly or sub contractually manage projects for major organizations and/or companies such as:

- Control Data Corporation
- System Development Corporation
- Memorex Corporation
- Department of the Navy
- Department of Defense
- Veterans Administration

- Diebold
- Video Lottery Consultants
- French Lottery - Française des Jeux
- Xerox
- Network Technology Systems
- General Electric
- A.G. Edwards
- MasterCard
- Sprint
- EMBARQ Communications

Mr. Diaz is presently the Manager of the I.T. Project Management Office for the State of Montana and continues to successfully consult for fortune 500 companies across the United States, Canada, and Mexico in delivering their projects to the end result with his personal style of combining project management philosophies to get to the delivery of the product.

Mr. Diaz is a Major Patent holder with such companies as:

- Control Data Corporation
- Memorex
- Sprint and
- EMBARQ

9. Introduction to ArcGIS Server

Monday & Tuesday, 8:00 AM – 5:00 PM Cost \$785.00

Presenter; Environmental Systems Research Inc. (ESRI) Staff

In this course, you will acquire the skills needed to share GIS content on the Web or across the enterprise. You will learn a workflow to publish maps, geoprocessing models, and geodata services and create out-of-the-box Web mapping applications using ArcGIS Server Manager. The course covers using GIS services in both Web mapping applications and ArcGIS Explorer. While administration is not the focus of this course, installation and some configuration techniques for ArcGIS Server are covered.

This is an ESRI Instructor led workshop offered at a reduced rate.

[Click here for more information](#)

10. Introduction to the Open Source MapWindow GIS Project: and Using Visual Basic and the Free MapWindow GIS Libraries to Write and Distribute Custom GIS Apps

Friday, 8:00 AM – noon Cost \$70.00

Presenter; Dan Ames, Idaho State University

This workshop will introduce the Open Source MapWindow GIS project and software (www.MapWindow.org) including an overview of the project desktop application, plug-ins, and programming tools. MapWindow is a free Microsoft Windows based GIS toolkit that supports a large number of typical GIS functions. It includes capabilities to read and write shapefiles, work with attribute tables, read GPS locations, write Google Earth KML files, and much more. The software is sponsored by several federal and local government agencies and private companies and is used worldwide with over 270,000 downloads (6,000 per month) and a global developer team. The workshop will include both introductory information as well as programming tutorials intended to show you how to

build your own freely distributable GIS enabled applications that have no proprietary software dependencies.

This workshop will be appropriate for a range of attendees including those with a casual interest in open source GIS, individuals interested in using the freely distributable MapWindow GIS desktop application, and advanced GIS analysts and programmers who need to develop freely distributable GIS based software solutions.

11. Creating Web Mashup Applications with ArcGIS Server

Friday, 8:00 AM – 5:00 PM Cost \$140.00
Presenter; Scott Moore, Environmental Systems Research Inc. (ESRI)

Find out how to get started creating effective, fast, mashup-style web mapping applications. Learn how to build lightweight mapping applications with just a few lines of script and embed these programs into any Web site using ArcGIS Server and ArcGIS Online. See how to overlay your ArcGIS Server Services on top of ArcGIS Online, Bing Maps, and Google Maps base maps. Learn how to leverage the newest tools, layers, and the ArcGIS Server Resource Center to create mashup applications. In addition, learn how you can leverage services provided by other organizations such as the Montana Base Map Service Center and data feeds from organizations such as weather information from NOAA and stream gauges from the USGS. Topics covered include:

- Effective web mapping with Javascript, Adobe Flex, and Microsoft Silverlight technologies.
- In depth study of the ArcGIS Javascript API.
- Leverage the Flex Viewer for ArcGIS Server to create a rich internet web mapping application without programming.
- Using web maps for more than just placing dots on a map. Spatial analysis on the web.
- What's coming in ArcGIS 10. Web-based editing and time-aware web applications.

This will be a highly interactive session where discussion is encouraged.

12. Introduction to GIS using ArcGIS

Friday, 8:00 AM – 5:00 PM Cost \$140.00
Presenter; Van Shelhamer, GeoEssentials, Inc.

This hands on workshop will introduce participants to fundamental GIS concepts using the ArcGIS software. No previous experience with GIS software is necessary.

13. Spatial Analysis

Friday, 8:00 AM – 5:00 PM Cost \$140.00
Presenter; Keith Weber, GIS Center, Idaho State University

In this workshop students will learn about spatial analysis concepts and techniques from basic overlay operations to ArcGIS's GeoProcessing capabilities (e.g., clip, erase, and proximity), and Digital Terrain Modelling (DTM). Plenty of hands-on exercises using regional datasets and real-world examples are provided to apply and reinforce covered materials. Intended audience: GIS personnel who need to apply spatial analysis techniques and correctly address spatial problems.

Prerequisite: familiarity with the ArcGIS interface.

14. Data Modeling and Database Design

Friday, 8:00 AM – 5:00 PM Cost \$140.00
Presenter; Stuart Challender,
Department of Earth Sciences, Montana State University

This workshop will introduce data modeling concepts and database design process resulting in a logical database schema. Concepts are intended to build the knowledge base and skills necessary to develop spatial databases that adequately support the intended applications. This is important for people developing GIS applications as well as providing important background for people interested in participating in the Montana Land Information Advisory Council (MLIAC) grant initiatives or the Montana Spatial Data Infrastructure (MSDI) framework efforts. Participants will learn how to read and understand database schemas as well as design a database and create a schema. Specific topics include:

- Spatial data models
- Relational database theory
- Spatial relationship concepts
- Database design process
- Building a database schema
- How to read a database schema
- Examples of data models
- Data model implementation tips and tricks

This workshop does not require previous experience in database design. Knowledge of GIS data and applications will be helpful.