

Welcome to Techniques in Data Management!!

GEOG/ECOL/ENR 5050

Fall 2016

Instructor: Dr. Shannon E. Albeke

Course Website Access

[http://ecoinfo.wygisc.org/Data Management](http://ecoinfo.wygisc.org/Data_Management)

- User/email = TDM
- Password = database

Grading Standards and Expectations:

- Data Management Assignments: 50%
- Class Participation: 15%
- Final Project: 35%
- Office Hours: Thursday 9-12, either AG 329 or AG 316, or by Appointment
 - The EcoInfo Working Group as a drop-in help center
 - Thursdays 10-12 AG316

Introductions

- Who are you?
- What is your project?
- Do you have your own data?

PLEASE EMAIL THIS INFO TO ME AS WELL!

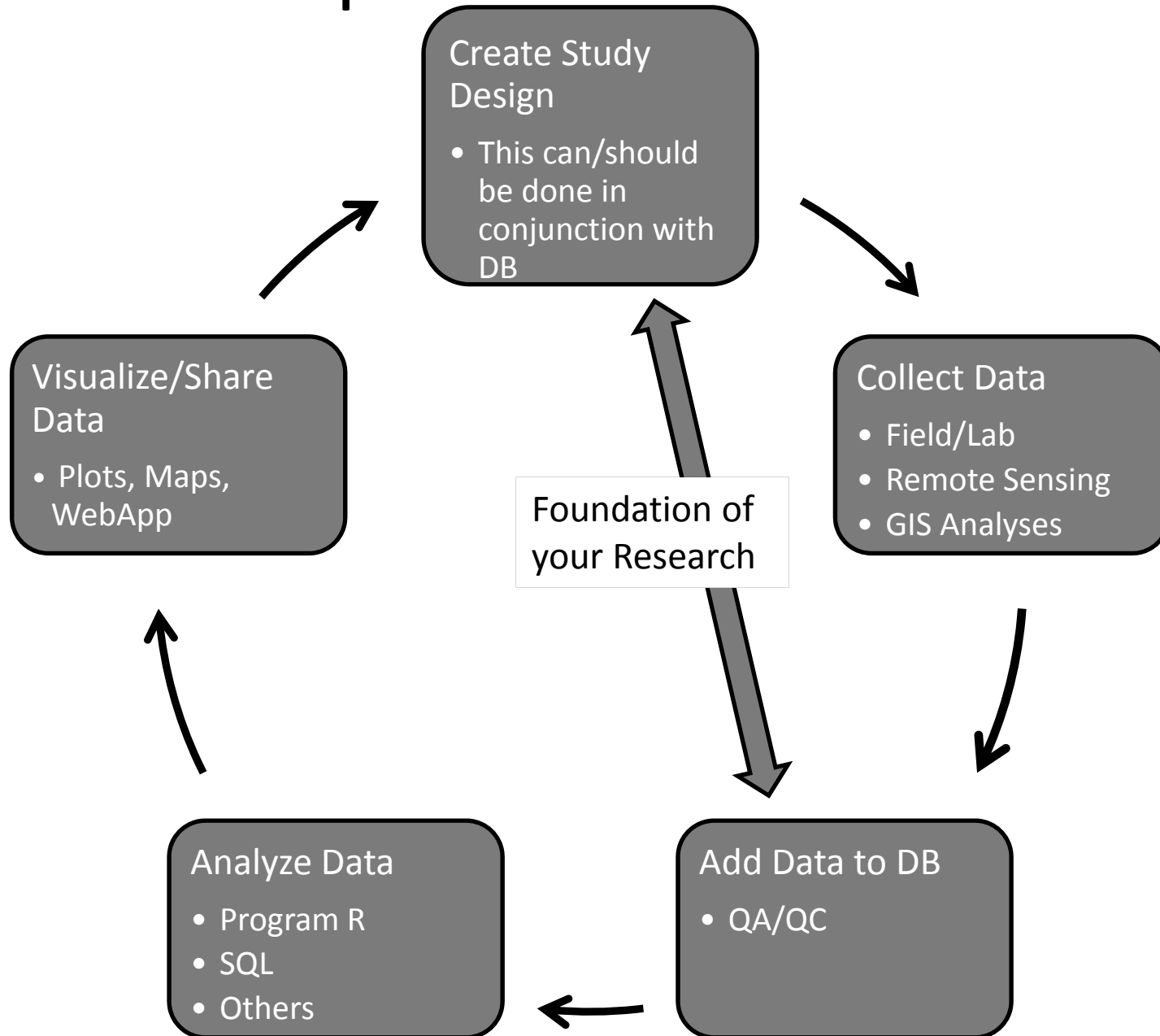
salbeke@uwyo.edu

(I will use this email as your primary contact – also include your UWYO user name so that I can provide you with necessary privileges for network resources)

Software

- Database software – I like using MS SQL Server for several reasons. However, in light of the open-source software movement, I am tinkering with PostgreSQL. Other options may be MS Access, MySQL.
 - Graph Database: Neo4j
- Program R/R Studio – My ‘go-to’ software for dinking with data, so we will use R a LOT! (2nd half of class)
- Maybe some ArcGIS, but not a lot since this is not a GIS course....although ALL DATA ARE SPATIAL (in some sense)

Conceptual Data Workflow



File Types and Extensions

Go here for webpage: http://ecoinfo.wygisc.org/datatype_review

- Excel and Files you can open with Excel
 - *.xlsx, xlsm (old *.xls)
 - Text files
 - *.txt, *.csv, *.tab, *.asc
 - dBase files (mainly attribute table from shapefile)
 - *.dbf
- Access
 - *.accdb >= Office 2007
 - *.mdb for old Office and Personal Geodatabase
- ArcGIS
 - *.mxd (a map file)
 - *.gdb (file geodatabase)
 - Raster: *.img, *.tif, *.asc, and others
 - Vector: *.shp, *.shx, *.prj, *.dbf and others
- Program R
 - *.RData, *.rda (these are the data file/data image)
 - *.r (a script containing R functions/commands)

Data Types

- Slight difference between Excel and Access
- Big difference between Access and SQL Server and R
- http://www.w3schools.com/sql/sql_datatypes.asp
- <https://cran.r-project.org/doc/manuals/R-intro.html#Objects>
- <http://www.statmethods.net/input/datatypes.html>
- Text/String/character (each letter/number/space is one character)
- Number
 - AutoNumber, Integer, **Long Integer** = no decimal
 - Double/Float = decimal
- Date/Time
- Memo and BLOB