# GRTS workshop: August 22-23rd, Portland, OR

***Instructor: Don Stevens***

*Red Lion Hotel-Portland Convention Center*

*1021 NE Grande Ave.*

*Portland, OR 97232*

# DAY 1: Introduction to GRTS and Study Design Development (8:30 am-5pm)

## Section 1. Overview of GRTS (8:30-10am)

*History and origin of GRTS and overview*

Stratified and variable probability sampling

Inclusion probabilities

Site evaluation

Weight adjustments

## Section 2. Designing a GRTS sample for stream/river networks (10-12am)

*Introduction to stream network sampling as continuous, discrete or area based samples and the implications of how a response design is set up in these various scenarios*

Limitations to application of GRTS along linear networks

Specifying objectives: What do you want to estimate? How does design tie to objectives?

Function of the response design and relationship to spatial/temporal design

Spatial design: target population, frames, stratification

Temporal patterns—panel designs

Sampling details: legacy incorporation, densifying the master sample, power analyses

Extract sample from a master sample

Generating initial weights, probabilities and densities

Documenting the design and generating a design file: what should it contain?

Lunch (on your own, 12-1pm)

Section 3: Analysis (design based inferences) (1-5pm)

*Now that I’ve got my files together, site evaluations, and site metrics, how do I make inferences based on my design, and what do I get (theoretical meaning of results)?*

Distinguish design based inference from model based inference

Develop adjusted weights (how is this done, what is considered)

Categorical vs continuous estimates

Estimates and indicators: totals (e.g, how many fish do I have?), densities, frequency distributions

Sampling uncertainty and precision of estimates

Analyzing data using post-hoc stratification (how does this work?)

# DAY 2: GRTS functions in R (8:30am-12pm)

Section 5: Description and demonstration of functions available in spsurvey library or recent scripts developed by D. Stevens (e.g. CHaMP scripts) (8:30-12pm)

*GRTS function for linear resources:*

Adjwgt function

Cont.analysis function

Cat.analysis function

Don’s specific functions (non-spsurvey version of GRTS code)

Use of GRTS for temporal patterns

*Other:*

Generating a Master Sample (spsurvey)

Development of web based tool for extraction of samples from master samples: what will it contain and what is its status?

# LOCATION and ROOM RESERVATIONS:

**A block of rooms has been reserved at $113/night (govt rate, includes breakfast voucher and parking). Please reference the “GRTS Workshop” when making your reservation to receive this rate (rate available 8/21 and 8/22).**

*Red Lion Hotel-Portland Convention Center*

*1021 NE Grande Ave.*

*Portland, OR 97232*

*Ph: 503-235-2100*