



Personal Mastery

CRA Stream Academy

2017 UDFCD Annual Seminar



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What is the Stream Academy.



Continuing Education Curriculum

- **Watershed System**
- **Stream System**
- **Regulations**
- **Watershed Approach**

Why the Stream Academy exist.



To establish **ambassadors that will evolve land management and stream practices.**

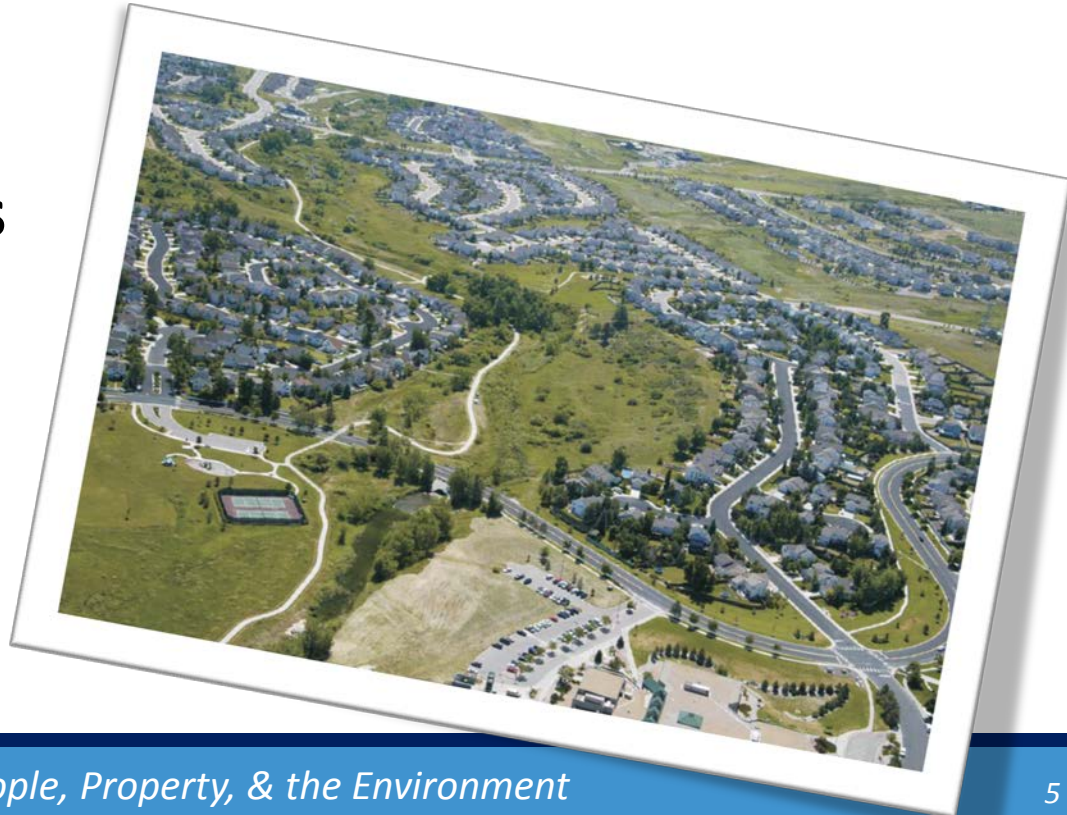
How does the Stream Academy work?

- 8 classes held once a month
- October 2017 – May 2018
- \$600 Tuition

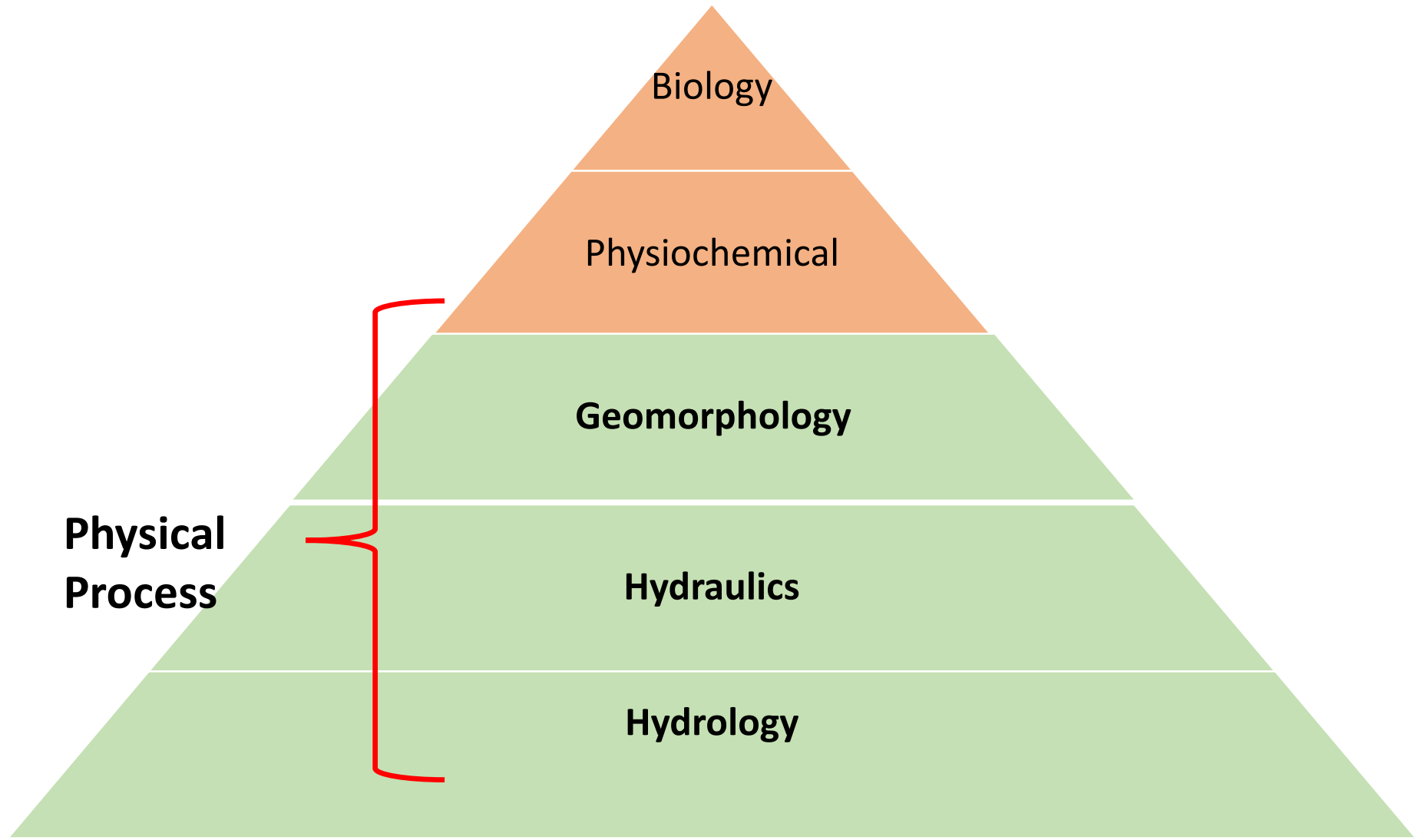


Who needs to attend?

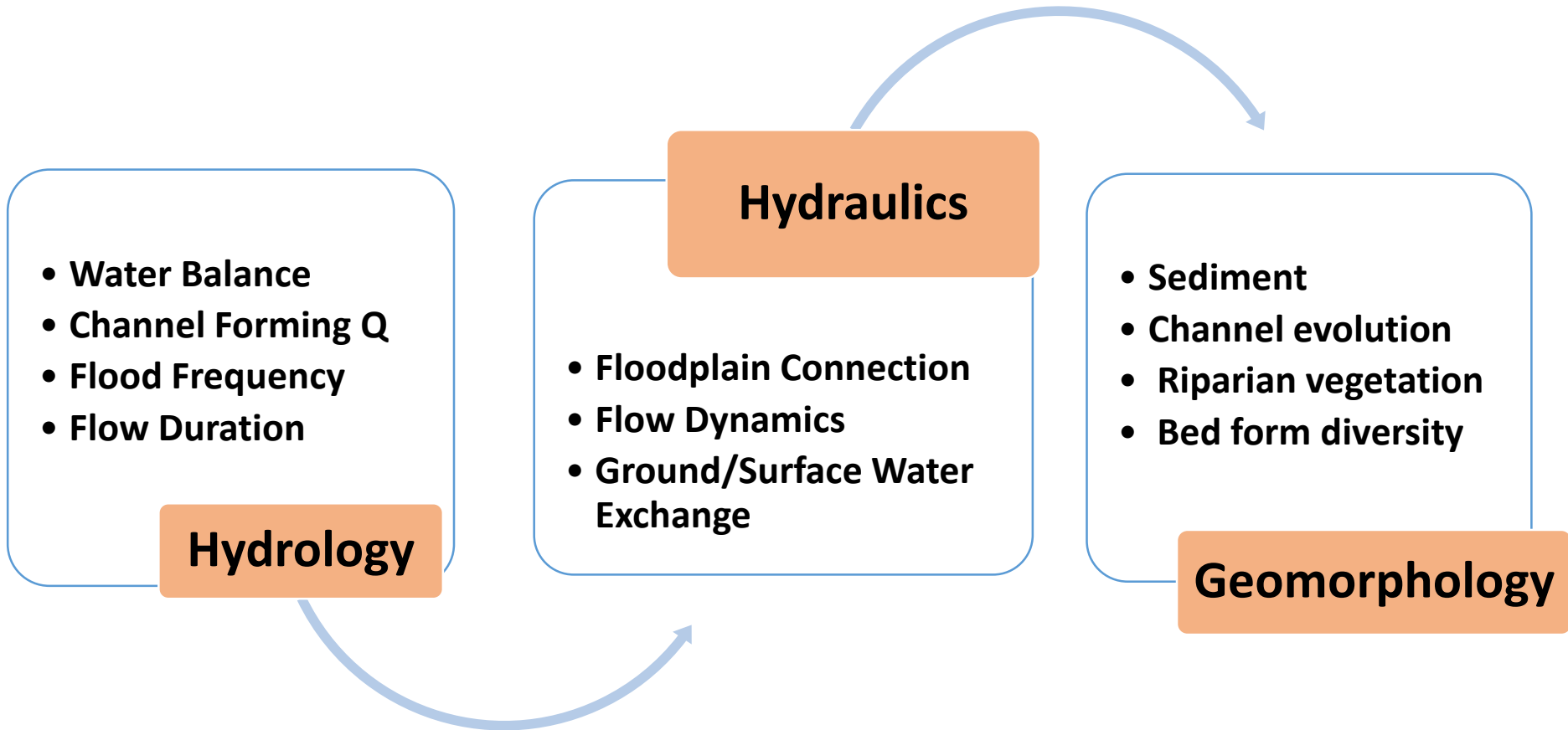
- **Public Works**
- **Water Resources Engineers**
- **Land Development Engineers**
- **Landscape Architects**
- **Environmental Scientists**



Stream Function Hierarchy



Topics



Learning Outcomes

- **Understand** the watershed and stream **systems**.
- **Understand** the key hydrologic, hydraulic, geomorphic **principles**.
- **Influence** a multidiscipline team.

Schedule

10/2017	Watershed and Stream Systems
11/2017	Land Management
12/2017	Land Development
1/2018	Stream Classification
2/2018	River Styles
3/2018	Naturalized Stream Design Approaches
4/2018	Why is Stream Function Science Relevant
5/2018	Working the Concepts

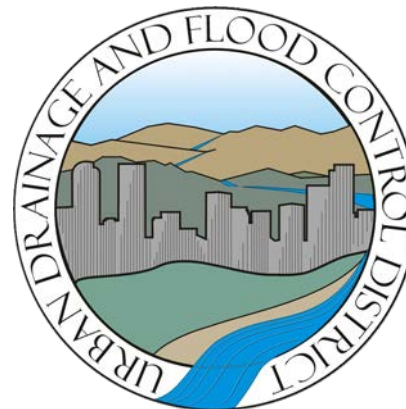
Class 2017



Sponsors



Colorado Riparian Association



Learning Objectives

Watershed and Stream System

Understand the watershed system.

Understand the stream system.

Learn the stream function framework.

Understand the role of the physical integrity of a stream.

Understand the value of a multi-discipline team.

Hydrology

Grasp the importance of understanding the hydrology relative to natural, pre-developed conditions.

Understand the mindset to explore opportunities to get closer to natural, pre-development hydrology.

Understand how to implement practices to reduce runoff volume and frequency.

Understand how to implement effective detention storage practices.

Understand why hydrology is the foundation for stream function.

The Anatomy of Streams

Understand the relationship between the watershed and stream.

Understand how a stream works in nature (what are the mechanics of a stable stream).

Understand the anatomy of a stream.

Understand the most commonly used parameters to describe and quantify streams.

Recognize the importance of Stream Classification.

Learning Objectives

January 2017	Stream Classification
	Understand the relationship between the watershed and stream.
	Understand how a stream works in nature (what are the mechanics of a stable stream)?
	Understand valley types and stream types.
	Recognize the importance of Stream Classification.
February 2017	Applied Geomorphology
	Understand the role and limitations of stream classification as a tool in the design process, including an overview of River Styles – a process-based framework for river restoration.
	Understand the theory behind dominant discharge, the different ways to calculate it, and when each method is appropriate.
	Learn how to understand and assess the sediment regime as a tool in the design process.
	Understand the linkages between a project site, reach characteristics, and watershed-scale variables.
March 2017	Applied Geomorphology
	Recognize the stream forms in the field.
	Recognize stream processes in the field.
	How to leverage stream forms and processes in design.



Learning Objectives

Why is Stream Function Relevant

Understand the history of urban stream mitigation practices.

Understand Colorado's perspective on stream function.

Understand the Nation's perspective on stream function.

Understand how stream functions role in securing a USACE 404 Permit.

Case Study

Understand our role as project regulators and managers.

Understand the importance of multi-discipline team.

Implementing a Watershed Approach.