Critical Zone Processes in an Alpine Environment: A First-Approximation of the Uncompahgre Watershed, San Juan Mountains, Colorado
Ground surface roughness and trail morphology

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Cobbles and gravel
Multiple lines*
Large particles mobilized
Entrenched

Loose Gravelly Silts and Clays
One dominant line*
Loose fine grains mobilized
Migrating with relief

Hardpack Silty Clay
Single line*
Few particles mobilized
Little relief

*Line – the actual path a trail user takes on the trail surface shown in blue, most commonly used by mountain bikers, generally the path of least resistance.
Bedrock linear regression equations for DCH, displaying coefficients of different reach average variables against percent bedrock: 

- Slope %: 
  \[ y = 0.1231x + 0.0727 \] 
  \[ R^2 = 0.40 \]

- Step Height (m): 
  \[ y \] 

- \( D_{90} \) (mm): 
  \[ y = 39.306x + 170.07 \] 
  \[ R^2 = 0.22 \]

- Avg Max Clast (mm): 
  \[ y \]
Effects of urbanization on three Texas rivers: A new assessment of channel stability for low gradient rivers.

Preliminary Results

<table>
<thead>
<tr>
<th></th>
<th>Trinity River Stability Score</th>
<th>Brazos River Stability Score</th>
<th>Colorado River Stability Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upstream Average</td>
<td>27.49</td>
<td>21.93</td>
<td>20.4</td>
</tr>
<tr>
<td>Downstream Average</td>
<td>31.51</td>
<td>25.16</td>
<td>26.44</td>
</tr>
</tbody>
</table>

Channel characteristics collected in field

Sediment collection

Sediment sieved in lab

Upstream of urbanization

Downstream of urbanization

Visual assessment of channel
Using Geospatial Technology to Investigate Glacial Fluctuations and Change of Ice Mass from 2000 to 2017: Southern Patagonia Icefield (SPI)

**Q1**

**Question 1:** How do the termini of glaciers fluctuate spatially and temporally over SPI?

**Question 2:** How does mass balance of glaciers change over time in this area?

**Question 3:** How are the spatial-heterogeneous responses of glacial activities influenced by topo-climate constrain?

**Solution of Q1:** To have a more accurate and cost-effective assessment of glacial terminus change in SPI.

**Solution of Q2:** To have a more accurate prediction of glacial mass change in SPI.

**Solution of Q3:** To explain the underlying reasons of above-mentioned glacial activities and changes.

**Q2**

**Q3**