Memorable Learning Experiences in Giant Screen Films
Who is the audience?

- Diverse Ages
- Wide Range of Prior Knowledge
- Interest in Learning
- Expectation of Good Storytelling
What constitutes learning?

- Content knowledge e.g. facts
- Enriched understanding, context
- Ability to visualize
- New attitudes, perspectives and approaches
The Human Body

De-familiarizing the familiar
Prior to watching the film, we asked viewers how they felt about their bodies ....

- “healthy”
- “fit”
- “overweight”
- “good”
- “tired”
- “out of shape”
The Human Body

New landscapes
After viewing the film responses about how they felt about their bodies were very different….

- “amazing”
- “marvelous”
- “miraculous”
- “awesome”
- “fascinating”
- “incredible”
- “It’s an amazing machine”
- “Awesome! Only God could make it”

- “extraordinary”
- “intricately made”
- “cool”
- “complicated”
- “complex”
- “fantastic”
- “I could still use a tattoo, but it’s amazing,”
Wired to Win: Surviving the Tour de France

Integrating Science and Story
Which of the following is true about how we experience pain?

a. ___ Pain is eased at the site of the injury where adrenaline is released.
b. ___ Pain is eased in the brain when endorphins are released.
c. ___ Pain is eased when synapses in the brain expand to release hormones.
d. ___ Pain is eased when endorphins from the brain and pain signals from the injury meet in the spinal column.
### Perception of learning (rating scales)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Rating</th>
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<tbody>
<tr>
<td>How the brain responds to pain</td>
<td>2.4</td>
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<tr>
<td>The names of the parts of the brain</td>
<td>2.3</td>
</tr>
<tr>
<td>How our brain responds to danger</td>
<td>2.3</td>
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<tr>
<td>The role of the brain in motivation</td>
<td>2.1</td>
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<tr>
<td>The role of the brain in focusing attention</td>
<td>2.1</td>
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<tr>
<td>What happens in the brain when we learn</td>
<td>2.1</td>
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<tr>
<td>How scientists make images of the brain</td>
<td>2.0</td>
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*Means on scale of 1 (didn't learn anything) to 3 (learned a lot)*
Interesting facts learned (open-ended questions)...

- How brain works or communicates: 23.1%
- Neural network/brain connections: 13.7%
- Pain, endorphins, pain management: 13.0%
- Power of brain, will, motivation, endurance: 12.6%
- Parts of brain, brain areas: 12.6%
- Learning, lifelong learning: 11.6%
- Length of race or race as grueling or difficult: 11.6%
- Brain (other): 11.2%
Dinosaurs Alive

Visualizing Scientific Processes
Dinosaurs Alive

Visualizing Scientific Processes
Visualizing scientific processes

- “I will remember the flood water rushing through – you don’t get that from the exhibit descriptions.”
- “I liked the flash flood recreation. That showed the imagination paleontologist uses to recreate the events – it was memorable.”
- “[what was] extremely effective was the way the film and education can meet – when they showed the real life fossil and dissolved to animated bird.”
- “when the fossil on the cliffs became an animated bird – that was so effective.”
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- Storytelling matters; human characters and motivation make the science engaging
- Use visuals to scaffold imagination
An invitation to discuss...

Please come talk to me during the conference about your thoughts on any and all of this.