National Geographic Explorer Corey Jaskolski Pushes the Limits of Digital Imaging

For the complete video with media resources, visit:
http://www.nationalgeographic.org/media/corey-jaskolski-creating-new-tools-for-exploration/

Program

This video was filmed on Thursday, June 14th at the 2012 National Geographic Explorers Symposium at National Geographic Society headquarters in Washington, D.C.

Introduction
National Geographic Fellow Corey Jaskolski is an engineer, specializing in creating technologies for some of the most challenging environments on Earth. He is currently developing new imaging solutions to help National Geographic explorers—and others—capture imagery that lets us all see the world in new ways.

Outline

- Introduction: seeing the world in a new light (start-01:03 min.)
• Why use technology in exploration? (01:04-04:04 min.)
• Recent projects: Color Night Vision and image fusion (04:05-05:53 min.)
• Color Night Vision prototype and first field deployment in the Serengeti (05:54-07:17 min.)
• Video: Color Night Vision demo (07:18-08:26 min.)
• Capturing the highest resolution image ever shot (08:27-10:29 min.)
• Underwater Spherical Imaging (10:30-11:35 min.)
• Video: Underwater Spherical Imaging demo (11:36-12:07 min.)
• Engaging the public and the iPad Viewer (12:08-13:14 min.)
• Video: King Tut's Tomb (13:15-13:49 min.)
• Analyzing physical objects with 3D scanning technology (13:50-14:53 min.)
• Creating 3D models of animals using camera traps (14:54-15:32 min.)
• Video: 3D scanning demo (15:33-16:24 min.)
• Next steps: continue developing new technologies (16:25-16:58 min.)

Strategies for Using Video in a Variety of Learning Environments

• Have students preview several of the videos and choose the one they find most inspiring. Have students describe in writing a conversation they might have with the speaker(s).
• Freeze the video on a relevant image. Have students observe details in the still image and jot down predictions of what the full video might address. Discuss students' ideas before and after watching the video.
• Pose an open-ended question before students watch the video, and have them discuss their ideas before and after in small groups.
• Have students determine what they think the key message of this video is. Was the speaker effective in getting his or her message across?
• Show a short clip to engage students during class, and then have students watch the full video at home and write a paragraph responding to the content or a question you give them.

• Have students note statements that represent facts or opinions, including where it’s difficult to tell the difference. What further research might help distinguish facts and opinions? How might the speaker’s viewpoint compare with others’ viewpoints about a topic?

Vocabulary

<table>
<thead>
<tr>
<th>Term</th>
<th>Part of Speech</th>
<th>Definition</th>
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<tbody>
<tr>
<td>3-D map</td>
<td>noun</td>
<td>representation of spatial information using dimensions of depth, length, and width.</td>
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<tr>
<td>digital imaging</td>
<td>noun</td>
<td>process of creating, processing, storing, and displaying images made from binary code.</td>
</tr>
<tr>
<td>engineering tool</td>
<td>noun</td>
<td>the art and science of building, maintaining, moving, and demolishing structures.</td>
</tr>
<tr>
<td>imaging tool</td>
<td>noun</td>
<td>device used to obtain, analyze, and study visual data.</td>
</tr>
<tr>
<td>infrared radiation</td>
<td>noun</td>
<td>part of the electromagnetic spectrum with wavelengths longer than visible light but shorter than microwaves.</td>
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Scan verb to transfer data, usually visual, on to a computer.

Synthesize verb to create or manufacture.

Articles & Profiles
• National Geographic Explorers: Corey Jaskolski—Engineer/Inventor

Websites
• National Geographic Events: National Geographic Live!