

Canopy in the Clouds: Integrating Science and Media

Gregory R. Goldsmith^{1,2}, Andrew D. Fulton^{3,2*}, & Colin D. Witherill^{4,2}

(1) Integrative Biology, UC Berkeley, 2) Monteverde Institute, 3) Drew Fulton Photography (*drew@drewfulton.com), 4) Broadreach Images

THE IDEA

Canopy in the Clouds is designed to partner emerging professionals in science, photography, and cinematography to create a new generation of environmental outreach materials. The project seeks to:

1. Promote conservation through educational media delivered in an innovative and engaging manner.
2. Inspire young scientists by sharing our passion and excitement for carrying out science.
3. Engage people in the beauty, biodiversity, and importance of tropical montane cloud forests from the perspective of the forest canopy.



Cloud catching. We invite students to join in the adventure of science from the perspective of the scientist. Here, we establish meteorological equipment in the canopy.

THE SETTING

The tropical montane cloud forests of Monteverde, Costa Rica.

We chose Monteverde due to:

1. A long history of scientific research in the biological and geophysical sciences.
2. A sound infrastructure with the capacity to support project needs, including the possibility of local collaboration.
3. A stunning, beautiful and well-protected forest at our fingertips.



Sunrise over the Cordillera de Tilaran in Monteverde. High dynamic range images such as this one and scenic time lapses create a context of place and time for students.

WHY DO OUTREACH

We believe that scientists must commit to sharing their enthusiasm and their excitement for the natural world in order to further conservation and inspire a new generation of scientists. We have found it beneficial to:

1. Teach and learn from each other as practitioners of science, photography, and cinematography.
2. Gain access to places and resources that would not be available if we were working alone.
3. Direct collaboration with the media helps insure clarity, accuracy, and the creation of an appealing product.

THE METHODS WE EMPLOY

1. Put science and media together in the forest, day in and day out.
2. Climb trees! They give us a new, exciting perspective on the natural world and biodiversity. Science is more than a high school classroom Petri dish.
3. Use innovative forms of media to engage our audience.
4. Collaborate with local scientists and members of the media to strengthen our project, while expanding their capacity.
5. Use sound planning, risk assessment and best available practices to always remain safe while we are in the field.

OUR SUPPORT

The authors gratefully acknowledge support from the National Geographic Society, the National Science Foundation Graduate Research Fellowship Program, the Lewis and Clark Exploration Fund of the American Philosophical Society, and the Berkeley Chapter of Sigma Xi. Logistic support is provided by the Monteverde Institute and we especially thank J. Wilkins and M. Solis. We thank E. Fitz, M. Trainor, and E. Cruz for assistance in the field.

THE PRODUCTS

We seek to generate bilingual, web-based outreach materials with targeted distribution to high schools in the United States and Costa Rica. This means:

1. In lieu of bringing our audience into the forest canopy, we bring the forest canopy to our audience. We use immersive media.
2. Try to amaze our students with forest stories and accurately portray the process of science.
3. Provide teachers with sound science to generate critical thinking about forest ecosystem functioning in the context of global climate change.



Elfin Forest Mercator. A projection of a navigable 360° panoramic video file that forms the basis for our project. Imbedded files can be accessed with explanatory video, pictures and text.

THE CHALLENGES

1. Conducting large-scale media and science in a foreign country requires careful planning. The volume and expense of the equipment cannot be underestimated.
2. Financial support is difficult to obtain and often requires significant grant writing.
3. Scientists must carefully balance their time in order to meet both research and outreach objectives. Scientists are often not rewarded for outreach. Likewise, media must balance their time to meet the demands associated with freelance careers.
4. The target audience is already inundated with media. There is a premium on being able to arrive, engage, and measure the effectiveness of the product.