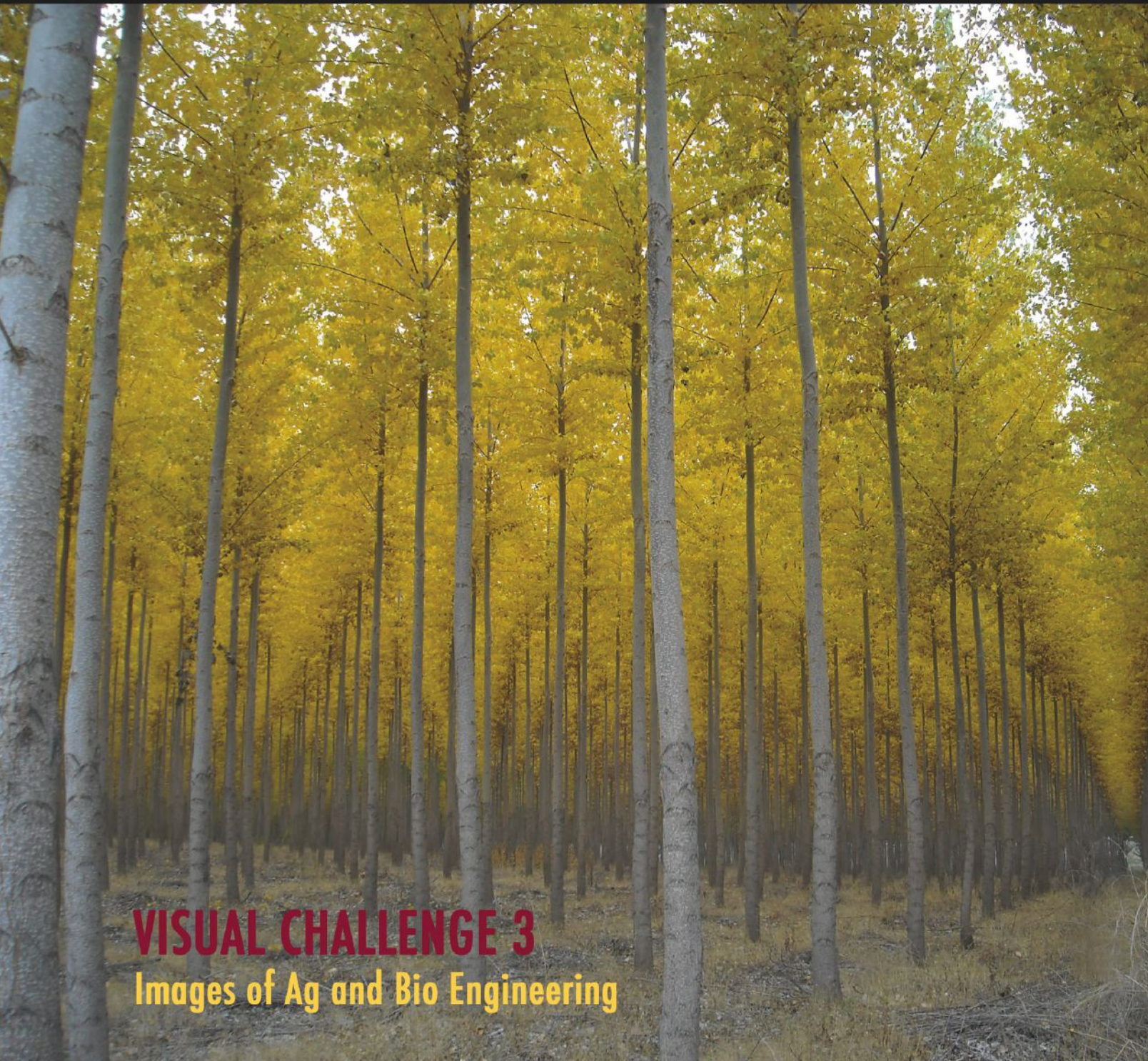


September/October 2013

# RESOURCE

engineering and technology for a sustainable world



**VISUAL CHALLENGE 3**  
Images of Ag and Bio Engineering

PUBLISHED BY ASABE – AMERICAN SOCIETY OF AGRICULTURAL AND BIOLOGICAL ENGINEERS



# IMAGES of AGRICULTURAL and BIOLOGICAL ENGINEERING

## VISUAL CHALLENGE 3

To celebrate the visual aspects of agricultural and biological engineering, *Resource* is pleased to present selected entries from the third annual ASABE Visual Challenge. Over 100 images were entered, illustrating the varied facets of the work engineers do and locations they work in around the world.

As in previous years, our call for “statements without words” proved once again that ag and bio engineers are often as proficient in photography and the graphic arts as they are in science and technology. The contributors’ entries show the dark beauty of the stormy sky to the desolateness of Nepal’s remote countryside—all with a sharp eye for color and composition. And some unexpected moments are captured, too. Several of this year’s entrants just happened to have a camera ready at the right time: as mist gathered over Honduran coffee trees and as a Beijing bee found her work site. For the first time, cartooning was introduced.

Most important, some of the beauty and meaning of the ABE profession and its many accomplishments come to life in these images, showing those outside the field: “This is what we do—on the job and off.” Of course, the selected entries are only a glimpse of the wide variety of activities—and occasional surprises—that can be found in agricultural and biological engineering.

Thank you for your entries, and for the work—*both meaningful and beautiful*—that you do.



**IRRIGATION with PIPE (inset)**

**Benjamin Covington**, Graduate Research Assistant, Iowa State University Agricultural and Biosystems Engineering Department, Ames, USA

*"I have hundreds of ag and bio engineering pictures, but here are just a few favorites ..."*



## TROUBLE SHOOTING RAMPANT ROBOT

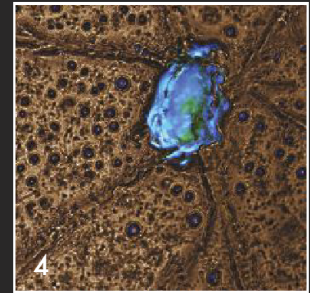
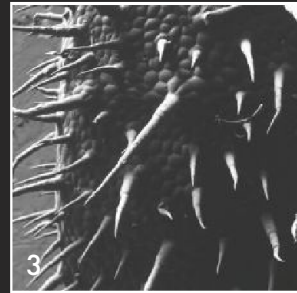
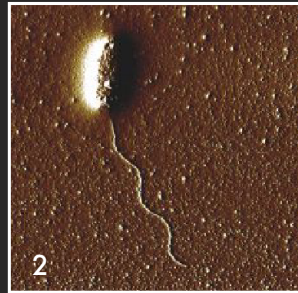
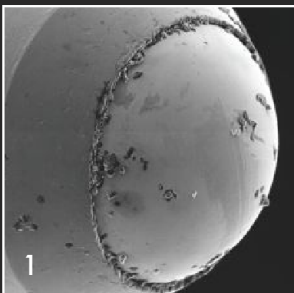
**Graeme Quick**, author, technical writer, engineering consultant, farmer and fruit tree grower, Peachester, Queensland, Australia

*"I do my cartooning for serious fun and to accompany the odd document where relevant if related to agricultural robotics."*

## HAITI HOOP HOUSE

**Brian Boman**, Professor of Agricultural and Biological Engineering, University of Florida, Indian River Research and Education Center, Fort Pierce, USA

*"One of my favorite photos shows one of the hoop houses that I introduced to Haiti, located in a remote area northeast of the town of Furcy at an elevation of about 5,500 feet. I still don't know how they got the materials there and built it. It is a hike of many miles from the road that I took the photo from. The men who built it said 'No problem!' Not only did they need to carry the materials, they had to level the area by hand so they could put up the hoop house. They liked the location because they were able to pipe water to it from a spring higher up the mountain (off to the right on the photo). The steep slopes are typical of the farming in this area of Haiti. As part of the cost share for the hoop houses, the farmer must stop farming the mountain slope and plant 50 trees for reforestation."*



## MAGNIFICENT MICROSCOPICS

**Eric Birkenhauer**, graduate student in biological engineering; **Evan Wright**, undergrad biological engineering student; **Adam Vogt**, research assistant; and **Suresh Neethirajan**, Assistant Professor, School of Engineering, BioNano Lab, University of Guelph, Canada

### BALL-IN-SOCKET, image 1

*"The tip of a ballpoint pen at 200 micron resolution."*

### BIONANO ROBOT, image 2

*"Atomic force microscopic image of a unipolar flagella bacterium."*

### CROWN OF THORNS, image 3

*"SEM image of the surface of a plant leaf revealing length-scale roughness at higher magnification."*

### ICE IN MARTIAN CRATER, image 4

*"Inverted optical microscopic image of two-day old culture of E. coli. DAPI, GFP, phase contrast, and bright field images are overlaid with some artistic license."*