

Plants in motion

IU professor uses technology to capture action of natural world

by Nicole Kauffman, Hoosier Times

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Roger Hangarter's films are of a genre most would guess is unpopular: "plants in motion."

Germination, photomorphogenesis, tropisms, nastic movements, circadian responses, general growth, flowers and cellular responses fall into that category.

But Hangarter, an Indiana University plant biologist, sifts through countless e-mail messages requesting his films and thanking him for making the films — and not just from fellow biologists.

The notes have come from a restaurant owner and a hospital administrator, both of whom wanted films to display on walls; a rock band that wanted a film for an MTV video; a theater company in Toronto, which used a film as a backdrop for a production; the television show "CSI: Miami," which sought a film for an episode; and textbook companies and teachers, who use the films as classroom tools.

Classroom use is what they were created for.

"I showed a movie about phototropism to my students," said Hangarter, 53, sitting in his office recently, wearing sandals and a ponytail.

The 1996 experiment gave students a better understanding of phototropism — how plants respond to light.

A tree, for example, can have branches that grow up but move to point down over the span of several years.

"It's so slow you can't notice it," Hangarter said.

He's frustrated that the general public's idea of plants is that they are pretty, decorative but disposable, as opposed to living and purposeful.

He talks about a recent visit to the craft store Hobby Lobby, where he saw people buying dozens of silk flowers.

"That's what plants are to them," he said.

To show plant movement, Hangarter uses time-lapse, a filming method in which he takes photos every few minutes of a plant as it responds to stimuli.

He creates what he describes as a "flip book."



Roger Hangarter displays a Cape Sun Dew, a plant with sticky hair that can trap bugs, in the greenhouse on the IU campus. The biology professor has developed a Web site that displays his time-lapse photographs of plants that show their movement. Staff photo by David Snodgrass

"Like claymation," he said.

The end products reflect plant movement at a rapid pace in short films.

It's a lengthy, expensive process, one that's made possible only by vast changes in digital technology in recent years.

He uses a digital camera to film plants at his home or office, and thanks to the magic of the Internet, where Hangarter first showed films in 1998, his work has become a surprise hit.

"I think many people are just stumbling on it, searching for 'time lapse' and other things," he said.

People can view the films — more than 40 — for free on his "Plants-in-Motion" Web site. It costs to download them.

In 2003, Hangarter had an exhibit, "sLowlife," at the School of Fine Arts Gallery in collaboration with artist Dennis DeHart.

In 2005, it will open at the Chicago Botanical Gardens.

And, Hangarter recently presented a film to go with a dance by the African American Dance Company at the IU African American Arts Institute's 30-year anniversary celebration.

"I designed a piece that was supposed to show the growth of their department, from 30 years ago until now," Hangarter said.

Generally, when Hangarter gets requests to make new films — a rose opening up is a popular one — he won't do it because it's so time-consuming, especially if he doesn't plan to use it at IU.

He would have to pass the cost onto the customer, and a new work could cost about \$500 per second of film. ("CSI: Miami" ultimately went elsewhere for a clip because of that price tag.)

If he wanted, Hangarter could start a business with his films, he said. That's not his thing, though.

He's comfortable in academia.

"I wanted to do research but I didn't want to work for a company," he said. "A university is a much more exciting experience."

Besides, his Web site already is so successful that the professor knows he's enlightening more people about plant life than just his students.

"Plants out there are responding to this environment," he said. "Hopefully, there are a few people out there who catch on that they're moving."

Roger Hangarter has a mini-studio in his office, and a similar one at his home, to photograph the stages of plant development. Staff photo by David Snodgrass



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