

Summer Research Poster Day 2008 Students Use Natural Product, New Model

By Belle Waring

This summer, like any other, the students arrived like migratory birds, alighting throughout the labs and branches, 1,600 strong. Before flying off at season's end, many took part in an NIH rite of passage as they formally presented their results to colleagues and campus visitors.

Welcome to Summer Research Poster Day. Sponsored by the Office of Intramural Training and Education, the annual event, held in Natcher on Aug. 7, featured the work of more than 650 summer students.

Focusing on potential applications of plant extracts in treating prostate cancer were Nadelle Hamby, a full-time EMT and a student at the University of California, San Diego; and Christine Lin, a George Washington University medical student.

"Patients are taking [natural products] without reporting it," said Lin, "and these things need to be studied." She and Hamby used two different extracts of *Moringa oleifera*, the tree formerly known as "IT" in NIH's 2008 Earth Day contest.

Hamby was already keen on *Moringa*, thanks to her recent Fogarty International Center grant to study ethnobotanics in Ghana: "We harvested our own plants there, so taking it into the lab here was so cool."

She found that *Moringa* extracts modulate prostate-specific antigen (PSA) and testosterone expression, while Lin investigated how *Moringa* may alter PSA gene expression.

These were the first known laboratory uses of *Moringa* on human prostate cancer cells.

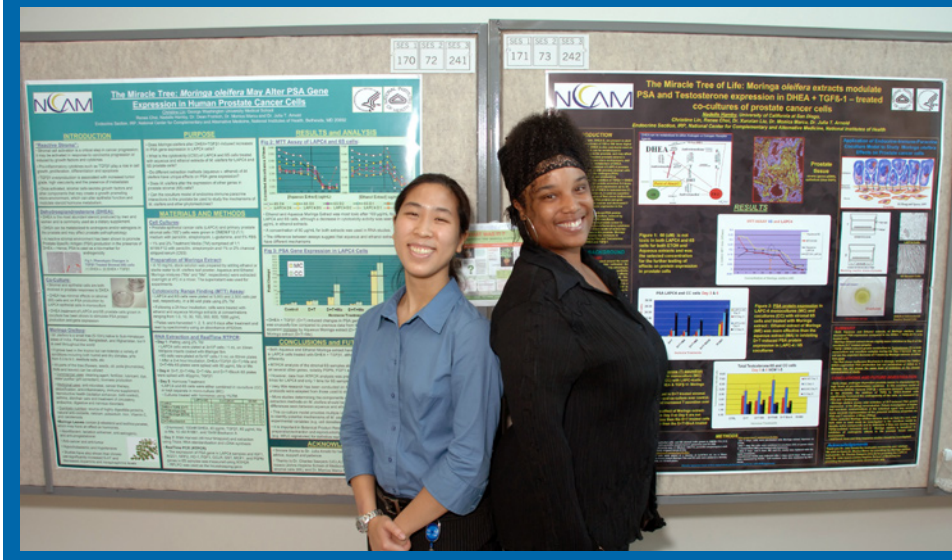
Both students employed a co-culture protocol, which their mentor, NCCAM's Dr. Julia Arnold, called a new model.

"The co-culture model is something we at NCCAM are developing," she explained, "as an important way to address how tissue microenvironment behaves. Two important types of prostate cells are grown together and are analyzed to determine new mechanisms of interaction and response to treatments."

These preliminary studies allowed the lab to expand protocols for testing complex botanical agents, Arnold said.

"We loved it," said Lin. "We came in on weekends."

"Especially since it's so new," Hamby added. "Still, there's so much we don't know."



The co-culture model is multifaceted. Historically, science has reduced its investigations to the smallest possible entities, ruling out as many variables as possible.

"Science is reductionist," Arnold said. "But when you focus your microscope too closely, you may miss something."

"Only in context," she continued, "do these cells begin to behave the way they do in the body. We look at the whole picture. How do these cells communicate? We use a new model, and science needs to come with us." 12

Displaying their work at Summer Research Poster Day are Christine Lin (l) and Nadelle Hamby.

PHOTO: MIKE SPENCER



Local and Organic at NIH

Coworkers (from l) Anna Mazzuca, Robb Mann and Ann Schombert of NCI's Laboratory of Molecular Biology recently discovered cucumber plants growing near their Bldg. 37 offices. Over the past few weeks they have harvested approximately 40 cucumbers. "Over the years, I have looked at the sunny open spaces at NIH and enviously imagined cultivating some of it for a vegetable garden," said Dawn Walker, the lab's technical manager. "My own yard is mostly shade and I can only have a couple of tomato plants and a few bean vines. I've often thought that it would be wonderful if we could grow organic fresh fruits and vegetables here at NIH, to be used in the Children's Inn for example. As it turns out, Mother Nature has taken over a little corner of the NIH grounds and sowed cucumber seeds. Cucumber sandwich anyone?"

PHOTO: PAT GOGGINS