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Next step for young valley science scholars: patent-law advice

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Calling all patent lawyers.

Silicon Valley's new new thing just may be in the hands of three young student scientists who are looking for legal help. Free is good.

These are not your ordinary school science projects. And Deepika Bodapati, her brother, Sunil Bodapati, and their friend, Tim Tran, are not your ordinary scientists. They're teens - well, Deepika's only 12. And they're conducting the kind of research that scientists many times their age say could have wide use in everyday life.

Deepika is using horseshoe crabs to develop a color change test that may help detect whether a bag of spinach is tainted.

Tim, 15, is tinkering with millipedes to form a new kind of antibiotic, perhaps for new kinds of infections.

Sunil, 17, is researching how a harmless bacteria can help make soil as solid as concrete, stabilizing the ground during an earthquake.

"Other people worry about the future," said Belinda

Lowe-Schmahl, a former biochemist who is working with the students at Schmahl Science, a local non-profit that conducts science workshops in schools. "But you're looking at the future here."

They are avid and dedicated scientists, spending hours after school - four to five times a week - in the biology lab at San Jose State University. The science program recently acquired a laboratory on wheels to bring scientific experiments to San Jose schools. But many of the students, such as Deepika, use the lab SJSU shares with Schmahl to test their ideas. Thrown together in the laboratory, the interaction between students working on a variety of college-level scientific research serves as a kind of brainstorm.

"It's what happens in real laboratories," said Sujatha Bodapati, Sunil's and Deepika's mother. "Scientists ask 'why' all the time. And these kids are starting to think that way."

That doesn't stop them from finding time for fun stuff. Deepika Bodapati studies bharatyata natyam, a classical Indian dance. She and her brother also play soccer. Sunil, a junior at Bellarmine College Preparatory, is a member of his school's speech and debate team.

Tim started at Schmahl when he was a fourth-grader, too short to reach the laboratory countertop. He was examining millipedes one day, and wondered why their bodies - their exoskeleton, he said with emphasis - smelled so bad.

He found the smelly secretions also kill E. coli bacteria.

So Tim, now an 11th-grader at Valley Christian High School in San Jose, came up with an odorous idea: extracting a new antibiotic from millipedes.

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Deepika, who flashes a full complement of metal orthodontia when she smiles, was only 10 - a fifth-grader at Challenger School in Saratoga - when she started her research on E. coli and salmonella, a year before contaminated spinach killed and sickened scores nationwide.

"It was topical at the time," she said, explaining her prescient interest.

She had read a lot about LAL, limulus amoebocyte lysate, an enzyme from the horseshoe crab widely used in the pharmaceutical industry to test vaccines and drugs for bacterial contamination.

"I wanted to further that investigation," she said, the scientific name rolling off her tongue. "I'm continuing it this year, and I want it to be feasible."

In the course of her research on LAL, Deepika met a former microbiologist, Linda Rogers of San Jose, who had worked with LAL for a medical device company. She also happened to be Lowe-Schmahl's neighbor.

"That she even thought of it in the first place is impressive," Rogers said of Deepika's work. Rogers recently joined Schmahl Science as an instructor. "It's something that could be potentially useful and marketable."

But before that giant step, Lowe-Schmahl said she and her young proteges will need help from a patent attorney who can advise them on how to proceed.

Getting a patent sounds simple, but it is expensive. The initial legal cost ranges from \$10,000 to over \$20,000.

"We give children the experience in research," Lowe-Schmahl said, "but we also give them experience in conceiving, implementing and

executing a project."

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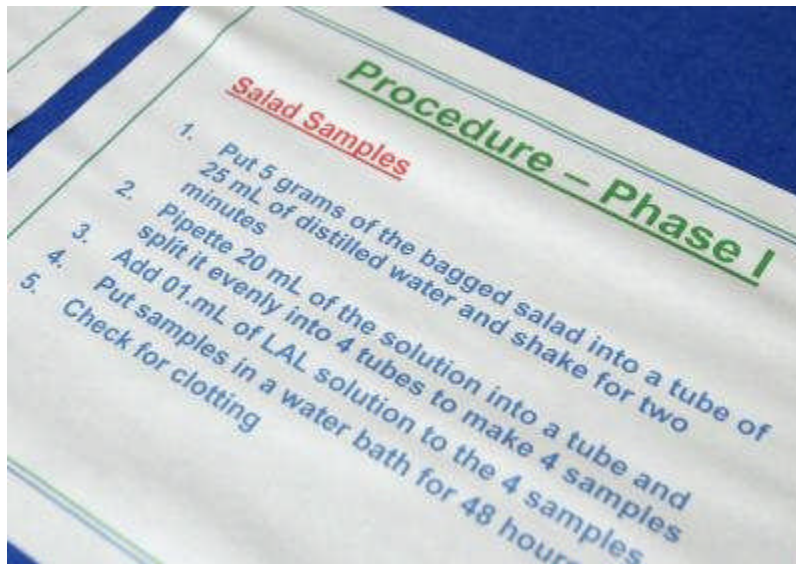
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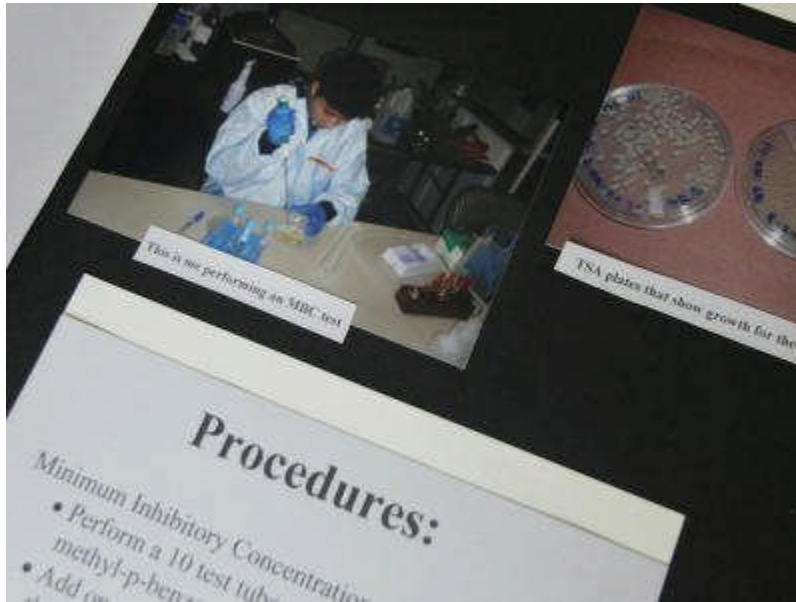
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Detail of the science project of Deepika Bodapati, 12, in Bodapati's Saratoga home Wednesday, Oct. 31, 2007. Bodapati's is working to develop a test to identify bacteria in spinach. (Patrick Tehan/Mercury News) (Patrick Tehan)



Detail of the science project of Timothy Tran, 15, of San Jose Wednesday, Oct. 31, 2007. Tran is testing the secretions of millipedes for anti-bacterial properties. (Patrick Tehan/Mercury News) (Patrick Tehan)

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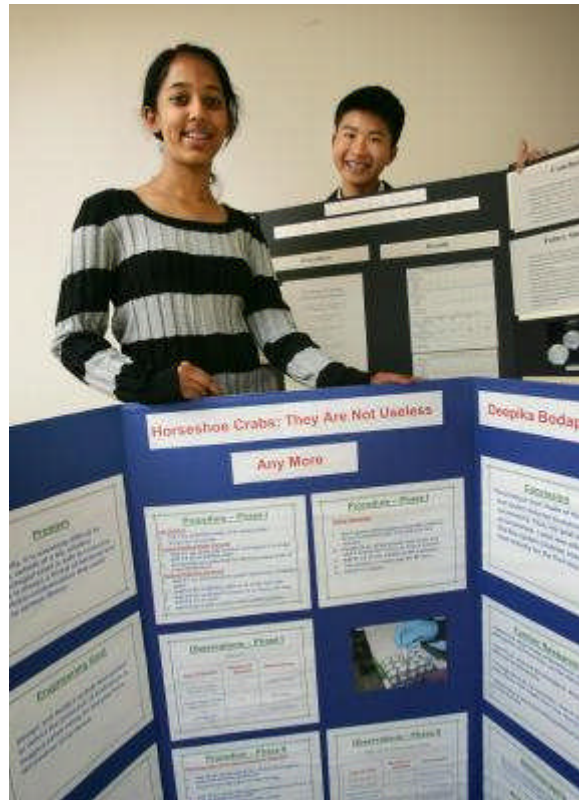


Sunil Bodapati in his Saratoga home Wednesday, Oct. 31, 2007 with the four first place medals he won from 2004-2007 in the Synopsys Science & Technology Championships. (Patrick Tehan/Mercury News) (Patrick Tehan)

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Deepika Bodapati, 12, left, and Timothy Tran, 15, of San Jose in Bodapati's Saratoga home with displays of the science projects they are working on Wednesday, Oct. 31, 2007. Bodapati's is working to develop a test to identify bacteria in spinach. Tran is testing the secretions of millipedes for anti-bacterial properties. (Patrick Tehan/Mercury News) (Patrick Tehan)

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