The Almanac

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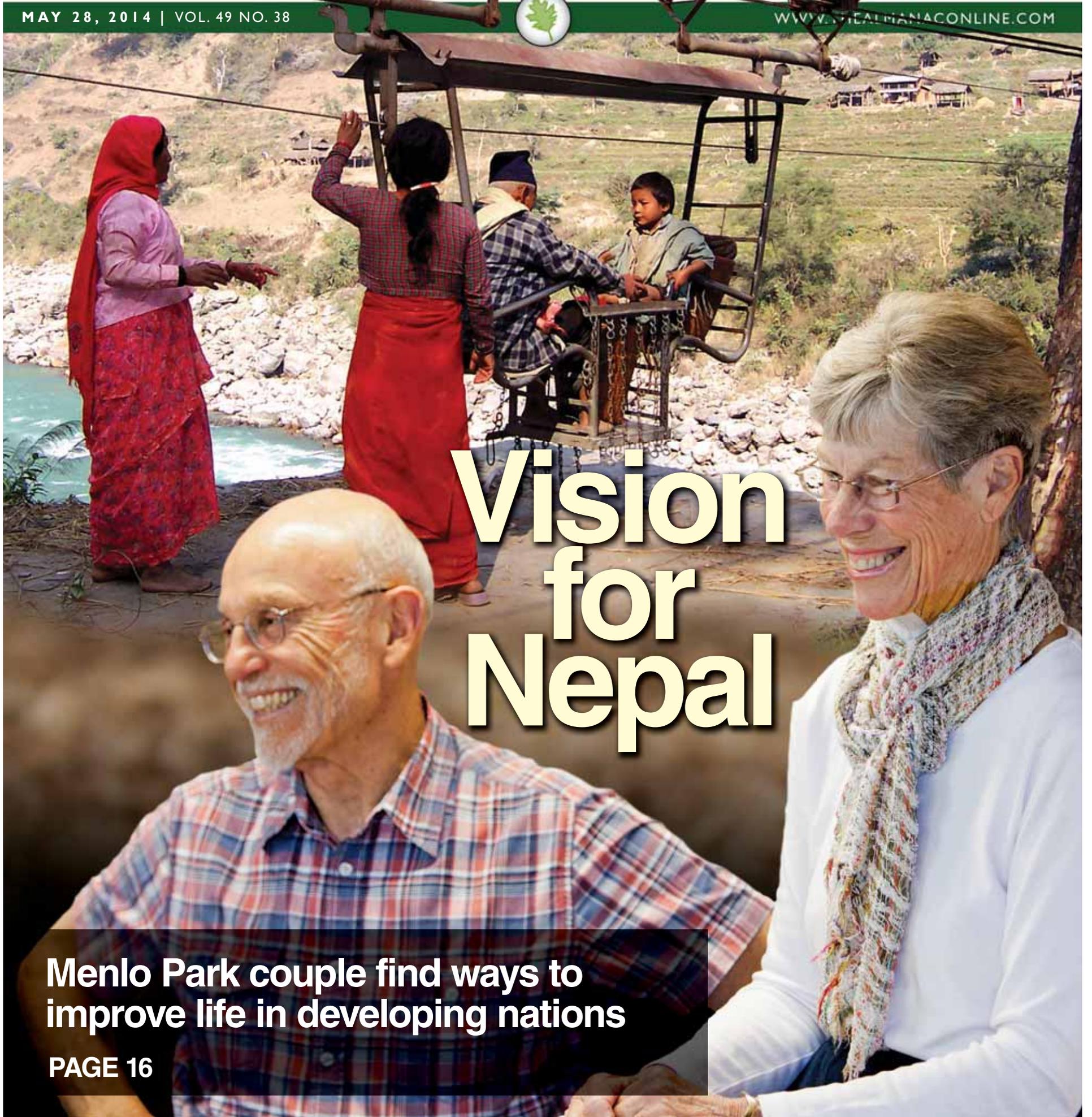
Vision for Nepal

Menlo Park couple find ways to improve life in developing nations

There's a better way

Menlo Park couple find ways to improve life in Nepal

Photo by Michelle Le

By Barbara Wood

David and Haydi Sowerwine returned to Menlo Park from 14 years in Nepal nearly a decade ago, but working to make better living conditions for residents of Nepal and other developing nations is still central to their lives.

The Sowerwines are the founders of a nonprofit called VillageTech Solutions that has provided river-spanning wire bridges and worked out a way to bring lighting to rural Nepal and Myanmar.

VillageTech currently has two new projects. One will provide many of the educational resources of the Internet to village schools at low cost, even if they lack Internet access. The second will remove from well water most of the arsenic that is slowly poisoning many villagers.

The nonprofit, in the tradition of many Silicon Valley start-ups, is run out of the Sowerwines' garage. This summer that garage will be crowded, as VillageTech hosts its third annual summer camp with as many as 15 high school and college volunteers from all over the country who will work on the two current projects.

By the end of the summer, the Sowerwines hope to be far enough along to look for manufacturers.

VillageTech is run almost completely by volunteers, led by the Sowerwines and two more unpaid staff members: board chair Skip Stritter, who is also from Menlo Park, and Maria Calica, who is working for them in Nepal.

Students, most from engineering schools around the country, but
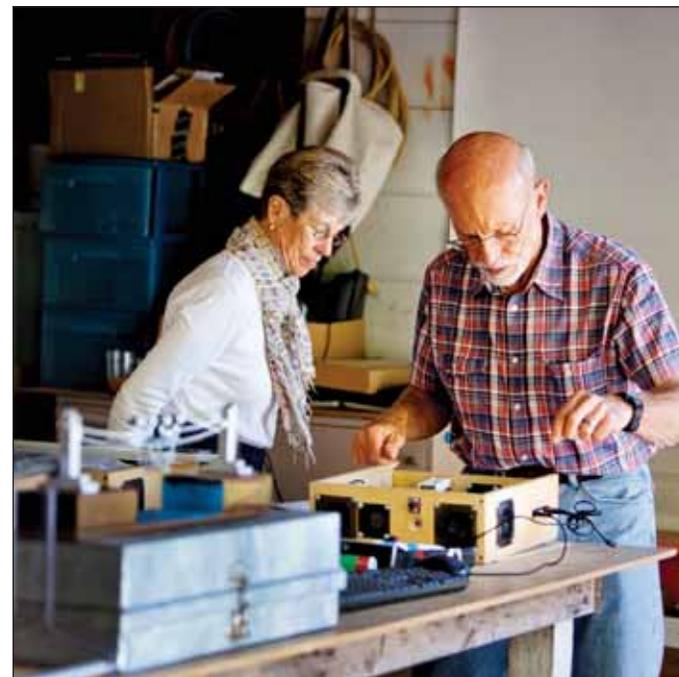
Photo by David Sowerwine

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Top: VillageTech Solutions founders Haydi and David Sowerwine work in their Menlo Park garage on the Looma project, designed to bring computer technology to classrooms that may lack a reliable source of electricity, much less an Internet connection.
Above and left: VillageTech Solutions has provided wire bridges to span rivers in Nepal, and make it far easier for villagers to get to work and school.

On the cover: David and Haydi Sowerwine and their VillageTech Solutions nonprofit have provided river-spanning wire bridges, such as this one over the Trishuli River in Nepal.

also local high school students, help with the engineering work.

Mr. Sowerwine has been interested in international development since his days as a Stanford undergraduate in chemical engineering.

That education "qualified me to get the best job in the world," he says. He worked for Esso (now Exxon) in Southeast Asia and traveled the world, including to India, Bangladesh, Indonesia and the Philippines.

When he later attended the Stanford Business School, he says, "I think I had more international experience than the professors."

After receiving his MBA in 1972, he went to work for Dole Food Company in Central and South America, and eventually ended up in Nepal working to help the country start new agribusinesses.

He and Haydi, an early employee of the product-design firm IDEO, married, the second time for each of them, in 1979 and raised their blended family of five children in Menlo Park. Haydi left IDEO when she went to Nepal with her husband in 1991.

When the original assignment in Nepal ended, David and Haydi, who by then had no children living at home, decided to stay "to try to see what we could do that was useful," Mr. Sowerwine says. "The house was empty and we were adventuresome."

They looked at Thailand, Cambodia and Laos as well as Nepal. "Laos at that time was very interesting," Mr. Sowerwine says, but it was as much as 30 degrees hotter than Kathmandu, so they stayed in Nepal, from 1991 to 2005.

"You couldn't walk 100 feet down the street without seeing something and saying, I wonder if there's a better solution," he says.

After a few false starts they found one of those better solutions — how to cross bridgeless rivers that at times left villages completely isolated, unable to get to school or work without walking for hours or even days, during monsoon season. The Sowerwines started a company called EcoSystems Nepal in 1996, and helped villagers build a

VillageTech Solutions founder David Sowerwine gives Stanford interns a tour of his home, where they work on projects to bring technology to remote villages, such as wire bridges (below right) in Nepal.

Above: The inside of the Looma, a device that brings computer technology to remote villages. **Right:** VillageTech Solutions co-founder David Sowerwine, right, and technical director Skip Stritter work on the Looma project.

total of 38 wire bridges using a human-powered carriage system on wire cables. One of their bridges spans 419 feet and saves villagers a two-day walk.

They hope to replicate that success with their two current projects.

Education

The education project is called Looma and is designed to bring the benefits of modern-day computer technology to classrooms that may lack even a reliable source of electricity, much less an Internet connection.

"That's what Looma is all about," says Skip Stritter. "It's one box, it's a projector, it's a computer, and an audio system, and will connect to the Internet if there is an Internet." The Looma can run off a motorcycle battery, so works even where there is no power system.

The Looma has a 32-gigabyte flash memory card, the same as those used in cameras and phones, preloaded with books, games, videos, workbooks and other media content found on the Internet.

It projects an image onto a wall, and is designed to be easy to figure out even for computer novices. It is directed using a remote control made by modifying Wii game system wands, and has a simple Web browser for schools with Internet access.

Clean water

"Particularly a big problem in the plains below the Himalayas is arsenic in the water supply," says Mr. Stritter. "It's poisoning tens of millions of people."

The problem grew, he says,

when rivers became too polluted to provide drinking water and villages began relying on wells and groundwater, which is often contaminated with invisible and odor-free dissolved arsenic.

SafaPani, which means "clean water" in Nepali, is designed to cut arsenic levels, which are often as high as 200 ppb (parts per billion), to below the World Health Organization's suggested limit of 10 ppb.

The simple system uses three buckets and electrolysis.

In the first bucket, an electric current runs though water between two iron electrodes, leaving iron ions in the water that attract the arsenic and cause it to return to solid form. The water is then released to a second bucket and filtered through clean sand, leaving the arsenic behind. Clean drinking water then runs into the third bucket. ◭

Photo by David Sowerwine

Above: A teacher in Nepal tries out the Looma device, projecting an image on the wall. **Left:** David Sowerwine and Skip Stritter work on the Looma project at the Sowerwine home in Menlo Park. **Below:** David Sowerwine, right, and Stanford interns listen to Melisa Tokmak's ideas on electrical supply options for the Looma project.

Photo by Michelle Le

■ LEARN MORE

Visit VillageTechSolutions.org for more information about this enterprise and its programs.

■ **Volunteer:** VillageTech needs volunteers, from high school age and up, with interest in the following areas: electrical engineering (printed circuit board design), manufacturing (electronics and plastics, especially in Asia), software (JavaScript and Linux drivers), curriculum development (to help determine the content for the Looma), grant-writing and fundraising (for adopt-a-school and adopt-a-bridge programs) and video production (for videos to post on the Looma). Volunteers who can make at least a three-month commitment can represent the organization in Nepal. Volunteers are also needed to serve as host families for summer camp students, starting in early June.

■ **Donate:** In addition to seeking major "angel" investors who might help fund the completion of VillageTech's current projects, the nonprofit seeks donations to meet expenses for summer camp, to provide airfare and support for overseas volunteers, and to buy materials and supplies. Contributions may be made to: VillageTech Solutions/ISI, 999 Olive St., Menlo Park, CA 94025; or online at villagetechsolutions.org.

Photo by Michelle Le