

# Alumni Develop Novel Power Source for Water Purification

by Jack Brymer



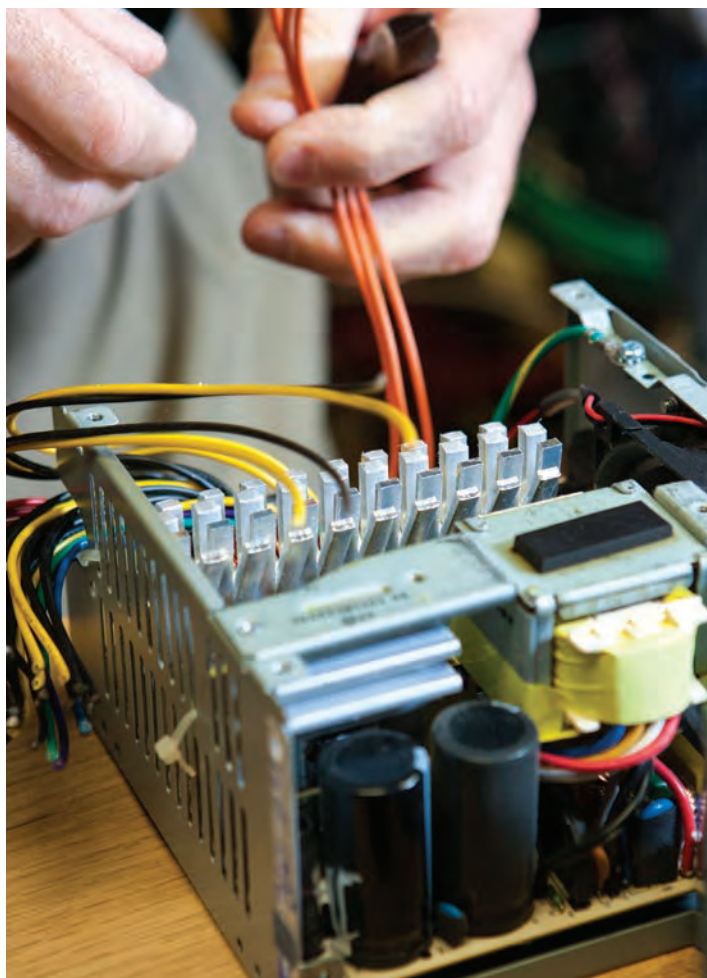
Lynn Smith

Dick Bodenhamer

Meg Newsome

Michael Wilson





**The World Health Organization reports that one billion people globally have no access to clean drinking water.**

It estimates that two million people die annually from drinking unsafe water, many of them children less than 5 years of age.

Safe drinking water can be produced from unsafe water by running the liquid through portable chlorinators to kill bacteria. Chlorinators can make up to 30,000 gallons of water per day safe by using only a fourth of a cup of salt. They have been used primarily in third-world countries and in locations where disasters have occurred, such as Haiti.

But powering the chlorinators can be a problem, especially in hard-to-reach places. They run on 12-volt car batteries, and the cost and weight of the batteries can make their availability difficult.

Five Samford alumni—Dick Bodenhamer '77, Allan Burton '92, Todd Heifner '91, Lynn Smith '76 and Michael Wilson '79—are working to combat this problem. They have developed a novel alternative to using batteries for power: old desktop computer parts.

The possibility of doing this came up while Smith, a retired electrical engineer, was helping a mission team plan for a trip to Uganda. As the team discussed the subject of water treatment, he

remembered a project he and Wilson worked on that made use of old computer power supplies. Smith hit upon the idea of using these smaller, lighter computer parts instead of car batteries.

Wilson, director of Samford's Resource Center for Pastoral Excellence, conceptualized the modifications needed to make it work, and a prototype power source was built using parts from scrapped desktop computers.

After a trial run to make sure it would work, the prototype was delivered by the mission team to Terra Nova Academy in Uganda, where Samford alumna Alisha Dameron-Seruyange '05 serves as director of operations. She reported that illnesses in her family, the academy students and her husband's soccer team were reduced dramatically after the chlorinator was installed.

Smith serves as technical adviser to Hope Manifest [HM], a 501(c)(3) organization founded by Heifner and Burton committed to strengthening other nonprofit organizations, specifically ones providing safe drinking water around the world. Smith also works with several other not-for-profit groups with the same goal: WaterStep in Louisville, Ky. ([www.waterstep.org](http://www.waterstep.org)), New Life International in Underwood, Ind. ([www.waterfortheworld.com](http://www.waterfortheworld.com)) and MedWater in Louisville, Ky. ([www.medwater.org](http://www.medwater.org)).

The Samford alumni took on the task of producing and disseminating power supplies for chlorinators. Meg Newsome '13, an AmeriCorps member with HM, handles much of the logistical work behind the effort.

Bodenhamer '77, marketing team leader for Woman's Missionary Union [WMU], heard about the project. He knew WMU was in the process of replacing its outdated computers and convinced the organization to donate the old computers to the chlorinator project. He noted that several other Baptist entities in addition to WMU have donated computers, including Samford, which gave 30 old computers to the effort. "We would love to see [other] individuals and churches do the same," said Smith.

Currently, three of the computer power supplies are in use, with requests for 100 more to be placed in the field in the coming months, according to Smith. In addition to the unit at Terra Nova Academy, others are in service at a hospital in Tena, Ecuador and a coffee-harvesting community in Las Palmas, Nicaragua. Several units are being used for training purposes in Louisville, Ky.

The biggest need currently, according to Smith, is to raise awareness of the need for safe drinking water. "We take for granted access to safe drinking water, which so many people do not have," he said.

When computers are donated to HM ([www.hopemanifest.org](http://www.hopemanifest.org)), the power source is removed and the computers are delivered to Technical Knock Out in Homewood for proper recycling. Computers provided to HM are tax-deductible donations.

Smith says he finds this work "incredibly rewarding." He has volunteered for several water projects in Haiti, India, Malawi, Jamaica and Peru. "To think we are able to do something about the world's greatest need—safe drinking water—for less than \$10 gets me pumped," Smith said. ■