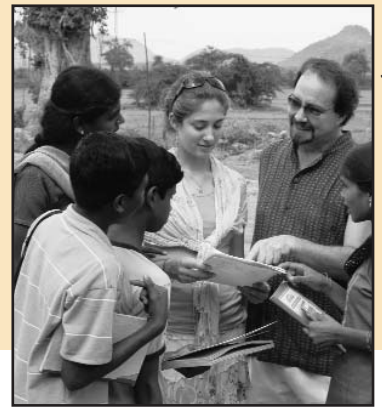


# Asia

spring 2008

## extra

 Washington University in St. Louis



Courtesy Photo

*Kelley Greenman (center), Arts & Sciences Class of '09, shows Glenn Stone, director of the Village India Program, creative writing stories that her students wrote at Pai Junior College in India.*

## Village India Program Provides 'Life-Changing Experience'

by Lisa Cary

A grandfather wearing a magenta turban gives a steady gaze through wizened eyes. A woman bends to pick weeds in a bright green rice paddy. A "toddy (palm wine) tapper" perches high in a palm tree against an endless turquoise sky.

While the adults in Kalleda Village, India, perform their daily tasks in shops and farm fields, the village youth are bringing their own fruit to bear: photographs and videos documenting life in their picturesque rural area of Andhra Pradesh.

Students in Kalleda Rural School are learning photography, video blogging, creative writing, and more as part of the Village India Program (VIP) created and administered by Washington University. Founded and directed by Glenn Davis Stone, professor of sociocultural anthropology and environmental studies in Arts & Sciences, VIP aims to enrich the lives of young students by providing intensive English training and courses on topics not offered in the local schools.

VIP utilizes the talents of Washington University students to teach new skills in Kalleda. Since 2000, while conducting anthropological fieldwork in the area, Stone had taught photography to some of the students, initiating the "Kalleda Photo Project." The success of that project prompted him to think about bringing University students there for service learning.

In 2007, his idea became reality: VIP was inaugurated and offered as a six-week summer study abroad opportunity for a select group of University students. As participants, the University students design their own English-based courses to teach to 8th-through 10th-graders from the Kalleda Rural School and 11th- and 12th-graders from the nearby Pai Junior College in Kalleda.

The program benefits both sides of the equation. On one side, the Kalleda students gain experience speaking and writing English while learning practical and creative skills for the 21st century. "Contact with the American students broadens their view of the world," says Stone, "which enriches their lives in unpredictable ways."

On the other side, the University participants get to experience life in a small Indian village, promote social change, and conduct their own



Glenn Stone

*A.J. Singletary (second from left), Arts & Sciences Class of '08, teaches environmental science to students at Pai Junior College, located in the village of Kalleda, in Andhra Pradesh, India.*

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## Guojun Bu Discovers

# Link between Early- and Late-Onset Alzheimer's

by Lisa Cary

As thousands of researchers and clinicians around the world work to discover treatments for human nervous system diseases, Washington University scientists recently published findings that they hope will send Alzheimer's disease (AD) research in a new direction. Current statistics on AD are alarming. According to the Alzheimer's Society (2008), more than 24 million people worldwide have dementia; of those, about 62 percent have been diagnosed with AD. The number of people affected is expected to double every 20 years unless scientists can find more effective methods for the disease's prevention and treatment.

In the October 4, 2007, issue of *Neuron*, senior author Guojun Bu, professor of pediatrics and of cell biology and physiology at the School of Medicine, presented a study identifying the first known link between determinants for early- and late-onset AD.

While the search for AD treatment has often focused on reducing buildup of the amyloid-beta (A-beta) protein that causes brain lesions, research by Bu and colleagues suggests a different avenue to treatment through regulating brain cholesterol. "The role cholesterol plays in brain function has been underappreciated in AD research," Bu states. "Neurons require a high level of cholesterol for synapse and memory. About 20 percent of the body's cholesterol is in the brain, even though the brain is only about 2 percent of total body weight."

Bu's research suggests that both early- and late-onset AD may be caused through malfunctions in the brain's cholesterol metabolism. Bu and colleagues hypothesize that a decreased level of a low-density lipoprotein receptor-related protein 1 (LRP1) on the cell surface results in compromised regulation of A-beta, apolipoprotein E (apoE), and cholesterol metabolism. The result may essentially starve the neurons of cholesterol and lead to synaptic dysfunction and neurodegeneration.

In 2004, Washington University provided an innovative new support system for its researchers by establishing the Hope Center for Neurological Disorders at the School of Medicine. The center provides a collaborative environment where researchers and clinicians working on different brain diseases can share information, build on each others' discoveries, and spark ideas in each others' work. The center also provides its faculty, including Bu, with cutting-edge equipment, resources, and funding.

Bu runs a cell biology laboratory and enjoys working with the postdoctoral research fellows and graduate students there. "The students constantly inspire me with their curiosity and fresh perspectives," he says. Bu also travels to his native country, China, once or twice yearly to instruct doctoral students from Fudan University in Shanghai.

In the lab, Bu will continue to investigate brain cholesterol as a key to AD. "Our long-term goals are to define the mechanisms by which LRP1 modulates brain A-beta and apoE/cholesterol metabolism, and to examine how it impacts the brain during aging and AD," Bu says. "Understanding LRP1's function could be a pathway to finding new medicines to prevent and treat this disease."



Joe Angeles

Guojun Bu (right), professor of pediatrics and of cell biology and physiology, conducts research into the relationship between cholesterol metabolism and Alzheimer's disease with Chia-Chen Liu, a Ph.D. candidate in molecular cell biology.

### Village India, cont'd from page 1

research and other projects while earning University credits in anthropology. "Going to India was a life-changing experience," says A.J. Singletary, Arts & Sciences Class of '08. "I was always interested in environmental problems that affect the developing world, but seeing these issues firsthand added humanity to my course work and focused my career path on sustainable development."

Stone expects the selection process to be competitive again for the 2008 trip. "We need to keep the group small and want a certain range of skills and interests," he says. Instruction in Kalleda this year will focus less on research and more on the arts, especially video and photography.

"The ultimate benefit," says Stone, "is that the University students leave Kalleda with a new

sense of commitment to rural India. After graduation, as they become educators, policymakers, scientists, philanthropists, and more, they will be in a position to influence others about the challenges and opportunities for young people in rural India."

To view photos and videos created by the students of Kalleda Rural School, visit <http://artsci.wustl.edu/~anthro/RDF/vip/>.