Academic skills meet the world

By Tracey Wong Briggs, USA TODAY

Watching physicians treat her baby sister's cancer made Yoonhee Patricia Ha want to become a doctor. A desire to help all of society made her want to become a public-health physician. Going to Ohio State, the country's largest university campus, from a small Appalachian high school with no Advanced Placement courses, gave her a jump-start.

"Coming to college was like a candy store," Ha says. "I knew it would be trial and error, but I was so excited about having these opportunities, I kind of dived in."

A double major in microbiology and finance with minors in political science and Korean, Ha has taken every opportunity afforded her and created more of her own. Co-founder of a campus global-health initiative, she won six grants to volunteer with HIV-affected young people in Kenya, did pre-clinical evaluation of a cancer drug, studied ventilation technologies to help the National Cancer Society lobby for a bill to ban indoor smoking in Washington, D.C., and is the only undergraduate on Ohio State's board of trustees.

"My activities outside the classroom have supplemented my classroom learning and brought the classroom concepts to life," says Ha, 22. "I'm fully aware how complex the field (of public health) is, but I've also seen the difference one person can make."
Ha is one of 20 students named today to the 2007 All-USA College Academic First Team, USA TODAY’s recognition program for outstanding undergraduates. She and 19 other juniors and seniors receive trophies and $2,500 cash awards as representatives of all outstanding undergraduates.

"It's USA TODAY's privilege to recognize a new generation of achievers, young men and women with a clear commitment to excellence," USA TODAY editor Ken Paulson says.

This year's First Team members were chosen from almost 600 students nationwide who were nominated for the honor by their colleges. They were chosen in a two-step process by judges who considered academics, breadth and depth of activities and leadership, and most important, how they have extended their academic skills beyond the classroom.

Collectively, the 20 juniors and seniors are pursuing 30 undergraduate majors and a concurrent master’s degree with an overall grade-point average of 3.89. Individually, their accomplishments reflect skill sets that are not only uncommonly deep but also broadly based. Many have combined disciplines as they’ve turned academics into action:

- Growing up in the South as the son of Coptic Christian Egyptian immigrants, Daniel Armanios always has understood outside points of view. A mechanical engineering and political science double major and economics minor at the University of Pittsburgh, he started Session: Middle East, an intercollegiate Model United Nations-type simulation in which pro-Israeli students represent pro-Arabs and vice versa. The third annual conference is March 30-April 1.

  Besides asking students to address questions of sustainable development such as energy and water, Armanios approached the sessions as an engineer building on the Camp David accords and Madrid Conference. He noted, "Jimmy Carter, who did the Camp David accords, was by training an engineer at the Naval Academy."

- A computer science major at Princeton, Tianhui Li has applied pure mathematics, engineering principles and physics concepts to financial research and computer science problems. Using mathematical theorems as specifications and their proofs as the programs, Li wrote software to help make computer programs more reliable. He also drew upon his physics background to do financial risk analysis. "One of the interesting things about math finance is that a lot of specific equations, specific concepts, are derived directly from concepts in physics. It's not that they just both use math, they use very similar math," he says.
• Andrew Lee, a philosophy, politics and economics major at Claremont McKenna College, combined politics and technology to create Fantasy Congress (www.FantasyCongress.com), an online game to educate people about the legislative process. Working with two computer science majors and a graphic designer, Lee devised a fantasy sports league-like game in which players draft members of Congress and win points for their players' accomplishments.

Fantasy Congress was launched in October and has 57,000 registered users. "I've always felt that if people cared about government as much as they care about sports, we'd have a better government. Democracy works but only if you have a fairly educated public," Lee says.

• An English major, novelist and pre-med student, Valerie Gribben of the University of Alabama at Birmingham found that reading aloud to her mother helped her mother cope with cancer treatments. Gribben started Healing Words, in which student volunteers read aloud to hospital patients. Not only does the program help patients relax, but it also allows the students, many of whom are pre-meds, to connect with patients in a non-threatening way, she says. "I do think of Healing Words as the intersection of the literary and medical spheres of my life."

• A cognitive-science major working in two different Yale cognition labs, Maya Shankar discovered that the labs were pursuing similar goals in very different contexts. She designed parallel research projects to study visual-perception processes in humans and monkeys.

"Her studies will be independently important to each field, but in addition, this work serves as a case study of how these subfields of cognitive science can usefully interact," writes associate professor Brian Scholl, director of the Yale Perception & Cognition Laboratory, in a letter of recommendation.

Curiosity is motivator

Many First Team members say their accomplishments are less a product of grand visions than wide-ranging curiosity and opportunity.

Shankar, for example, was a Juilliard-trained violinist who suffered a career-ending injury just before entering Yale.

"I was very unsure I had the intellectual passion. I had devoted so much time to music. I was so happy and thrilled to find cognitive science, which was immediately engaging and interesting. I wanted to start asking questions of my own," she says.

The rare opportunity to work in two labs was what made it possible to explore the connections between the specialties. "It's definitely difficult to work in two, of course, but I'm happy that the professors were wonderful to provide me with the opportunity to do a cohesive research project that spun across both labs."
'I had to find my niche'

A chemistry and physics double major at the University of South Dakota, Frank Leibfarth arrived at college from the small town of Yankton not knowing what he wanted to do. "I was a biology major," he says. "I knew I liked science, I knew I liked research, but I had to find my niche."

A varsity football placekicker who won a Goldwater Scholarship for science, Leibfarth simply has pursued activities he enjoyed, from serving as fraternity president to dancing in his hometown production of The Nutcracker.

At a National Science Foundation summer research internship at Columbia, he discovered he could compete with students from Ivy League schools. Moving into the football starting lineup, he learned how much dedication it takes to meet high expectations. A second foundation research internship in California, in which he worked with scientists in different specialties on research combining physical and organic chemistry, affirmed the importance of collaboration.

Each one has been formative and taught him the importance of being able to interact successfully with a wide range of people. Trying to manipulate molecules brings physics and chemistry together: "This is where the disciplines are going to coincide," he says. And being able not only to understand the disciplines but also to interact successfully with a wide range of people is important whatever you do, he says.

Then there's Lori Scardino. She was a single mother who restarted college at the University of Wisconsin-Eau Claire with her sights set on becoming a high school math teacher. She fell in love with chemistry, landed a position in a chemistry lab studying fluorescent cellular probes and started loading up on biology courses to be better able to understand the research.

"The research I've done is at the interface of chemistry and biology, and I really enjoy that," she says. She pursued majors in both disciplines, taking 18 to 21 credits a semester, because the work demands it: "That's the way the world is going."

**Connection to community**

And for Cynthia DuBois, understanding that education and community are connected has been a guiding force. A political science and agriculture business major at Louisiana State, DuBois became a research assistant for a political science professor and got involved in student government as a freshman.

"Taking part in those two things refined my philosophy ... that the university is not a business or an institution, but rather, a community of scholars," and how well a community works depends on their commitment to it, she says.

In viewing her commitments in the context of community, she has found her choices affirmed.

After Hurricane Katrina, she started a relief drive to give backpacks full of school supplies to the displaced students who had poured into her hometown of Ponchatoula, La. The local drive ballooned into a national effort, with backpacks sent to 400 schools along the Gulf Coast.
Out of the 46,000 backpacks that were donated, there is one Cynthia and the other volunteer sorters will never forget.

That backpack included a watch and a note from a woman whose firefighter husband died at the World Trade Center on Sept. 11, 2001. The watch had been given to her by her husband’s fire company and had the company number engraved on it. The note to a displaced student said, "I want you to have this because I want you to understand society is inextricably intertwined, that when one of us hurts, all of us hurt."

Says DuBois, "More than anything, we came to realize that when one part of society hurts, the rest of it should come to the rescue."

Lori Scardino, who majors in chemistry and biology, is a single mother to two girls. "The research I’ve done is at the interface of chemistry and biology, and I really enjoy that," she says.

Find this article at:
FIRST TEAM BY THE NUMBERS

• 10 public colleges, 10 private

• 10 men, 10 women

• Two non-traditional students, Jessica Richman of Stanford and Lori Scardino of the University of Wisconsin-Eau Claire.

• Two from the U.S. Naval Academy, Sean Genis and Christopher Marsh

• Two former All-USA High School Academic First Team members, Kevin Koo and Tianhui Li

• 10 double majors and one who is earning a concurrent master's degree

• Average GPA of 3.89 on 4.0 scale