

# GIVING STUDENTS AN EDGE

UNDERGRADUATE RESEARCH AT ANDREWS

by Beverly Stout

**R**esearch—the word might evoke images of test tubes, numbers and stats studied by Harvard PhDs in white coats and libraries filled with stacks of books. But what you might not realize is that research isn't just for professors and doctoral students in large universities anymore. And it's also for more than just science majors and mathematicians. Respected and peer-reviewed research is being produced right here at Andrews University—much from students who haven't yet finished their bachelor's degrees.

Dr. John Stout, dean of scholarly research at Andrews, explains that the increase in undergraduate research at Andrews is part of a national movement toward encouraging undergraduates to do creative scholarship in the discipline they are studying. “The sciences have traditionally been involved, but it has spread, now involving most undergraduate disciplines,” Stout said.

A member of The Council On Undergraduate Research, Andrews believes that when students have the opportunity to participate in research alongside their professors, there will be an amazing impact on their educational experience. And this isn't just for those who start their college careers with stellar grades.

“What's interesting and fascinating is that there's good evidence that when undergraduates get involved creatively and plan, with ongoing interaction with a faculty mentor, how to develop, execute, evaluate, and present something new in their discipline, the experience not only gives a broader background, but it is an important part of their improved success in the whole big picture, including classical academics,” Stout explains. “It's typically perceived that the best and the brightest would achieve, but research shows growth impact on students whose potential was not yet developed.”



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Students in the Department of Biology are a perfect example of the type of “transformational education” that such opportunities for research and faculty mentoring can provide. The University has received two grants from the National Science Foundation—one for \$490,600 in 2003 and another for \$54,112 in June 2007—to study the unusual success of students in biology.

Students in the department were doing unexpectedly well, with freshmen graduation rates of more than 70 percent, rankings in the 90th percentile on Major Field Tests, and medical-school acceptance rates of around 85%—more than twice the national average. But a look at the students' demographics and academic records makes this success particularly intriguing.

In a field where national figures for minority students are below ten percent, 30–40 percent of the Biology Department's population is from underrepresented minority groups. And not only are students from diverse backgrounds finding success in Andrews University's biology program in record numbers, so are students who may never have had the chance to even study biology at other schools due to low test scores and GPAs. A comparison with other church-affiliated schools showed that Andrews had a substantially larger number of students below the average test score.

Once the factors of the program's success have been determined, NSF plans to share the biology program's model with other universities around the country. “NSF considers our current biology program as

one of the best models of transformational science education in the country,” Stout said.

While undergraduate research may have increased throughout the years, it’s actually a concept that has been in practice at Andrews for many years.

One of the longest-running programs of its kind in the country, the J.N. Andrews Honors Program has been turning students into scholars for the past 40 years. Research has been a key program component from the start. Though the program has gone through changes through the years, the emphasis on research has remained central.

In addition to completing a list of core class requirements—part of the SAGES (Scholars’ Alternative General Education Studies) program initiated in 2001—all Honors students must complete and present a new and unique research project.

Students take a one-credit Research Pro-Seminar class taught by the Honors director, where they are mentored through the completion of the project. Students generally choose a topic from their discipline and team up with a faculty mentor from their department. The student must prepare and present a project proposal to the Honors Council—made up of approximately 20 faculty members from various disciplines—for approval before beginning. At this time, students must field questions and prove that their proposed project is valid. They then must produce a written research paper, present a poster session on their project, as well as give a final oral defense of their thesis. Students are graded both on the quality of their research and their presentation.

Learning how to create effective interdisciplinary conversation is an important aspect of the whole Honors project. According to Gordon Atkins, professor of biology and director of the Honors Program from 2003-07, “It’s not just about the technical fieldwork, but they have to be able to explain their work to the masses. The oral defense is an important interdisciplinary feature of the project.”

“Research in all disciplines is transformational,” noted Atkins. “It really does take a student from being a learner to a contributor in their discipline. Most students can leave [college] and say later that they were prepared, but Honors students can say they know they are prepared.”

One of the goals of the Honors project, as well as that of much of the undergradu-



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ate research happening on campus, is that students will have the opportunity to take their work and present it off-campus at professional venues.

The Behavioral Sciences Department has been particularly successful in this area. With a core curriculum that is highly intentional in its mission to foster research, students in Anthropology, Behavioral Neuroscience, Psychology, Public Health, are regularly presenting at conferences or coauthoring papers with their professors. (See sidebar for a list of recent projects.) Presentation venues have included the Central States Anthropological Society, Association for Psychological Science Convention, and the Midwest Psychological Convention.

Andrew Gerard, junior behavioral sciences major with an emphasis in anthropology, is one of the department’s students who presented this past year. Andrew has been working with Øystein LaBianca, professor of anthropology, and the Institute of Archaeology in their work in Tall Hisban, Jordan. He has presented twice at the Central States Anthropological Society’s annual meeting, the first time during his freshman year.

“This opportunity [to research and present] is the biggest single reason that

I chose to come to Andrews University, and is one of the most meaningful parts of the Andrews experience,” Andrew notes. “Researchers from the Institute of Archaeology who have come before me have been accepted to graduate programs at Columbia University, Stanford University, Brandeis University, and University of Connecticut Law School. This research experience is the difference between a good education and a world-class education.”

The English department is another example of a department committed to providing students opportunities to present research off-campus. L. Monique Pittman, assistant professor of English and the new Honors Program director starting this fall, alone has taken 19 students—13 of whom are undergraduates—to conferences in the last five years.

Pittman believes that presenting at a conference can be confidence-building for students. “It’s great that students have the opportunity to see that [their research] is not just good quality for Andrews University, but good quality for the discipline. It’s a real confidence booster that what we’re doing here [at Andrews] is on par for the expectations of the discipline.” Sometimes, students are even thought to be further along in their education than they

are. “One time an undergraduate student was asked [by a presentation attendee] where they were at in their dissertation,” Pittman recounted. She also told how experience presenting at conferences was one of the reasons for another student’s acceptance into a graduate program at a prestigious university—none of the other applicants had even presented.

Senior English major Bonnie McLean is both an Honors student and one who has traveled with Pittman to present her work at a conference. Bonnie presented her work with Shakespeare’s *I Henry IV* at the Michigan Academy of the Arts and Letters at Ferris State University in March 2007.

“[Presenting] was terrifying and heady at the same time,” said Bonnie. “There is no other experience like it. I felt nervous that I was going to lose my place, bore my audience, and say something stupid. Yet, it was exciting to present myself as a literary scholar and demonstrate my capabilities to my audience.”

“Because I have participated in research and been able to present my findings, I am a more confident student,” she continued. “I have been given a chance to become more skilled in my major area of study, and this will help me present a more professional and knowledgeable front to future employers and to my peers.”

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“The value of an Andrews education and their own skills set our students apart when applying for advanced degrees,” explains Pittman. “Many students going to a bigger

university don’t have that experience. How we can make ourselves distinctive from a state school is that we can offer more attention and opportunities to cultivate these types of opportunities.”

Andrew agrees, “Serious research prepares students for graduate school and—if they are looking at a future in higher education—allows them to gain the skills necessary to excel in the life of the mind. Beyond this, however, the type of research in which students are encouraged to go deep into a subject, to question assumptions, to work methodically, and think critically is what differentiates good schools from great schools. Andrews University is unique in that it encourages students to engage in serious research on the undergraduate level.”

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**Beverly Stout** (MA '06) is currently teaching English at a community college in Illinois. She is glad she doesn't have to present on the research she did for this article.