Chemistry major Billy Smith coauthored an article in *Nature* magazine about a promising treatment for a rare form of cancer.

**Photo by Mary Knox Merrill.**

"No limit" on this undergraduate’s future | Northeastern University

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Northeastern undergraduate student-researcher Billy Smith has landed a plum that university faculty members strive for: an article in a leading science journal.

Smith, a third-year chemistry major, coauthored an article in *Nature* magazine about a promising treatment for a rare form of cancer, based on research he did on co-op at Dana-Farber Cancer Institute.

"I'm still in shock that the paper is out," said Smith, who researched NUT midline carcinoma, a rare, but highly lethal cancer found most often in the head and neck.

"It makes me feel like there's so much more I can accomplish," Smith added, noting his plans to study oncology in medical school so that he can be part of the "unbelievable progress in cancer research."

From January through June, Smith worked alongside Dr. Jay Bradner, whose laboratory in Dana-Farber's department of medical oncology studies gene regulatory pathways using the emerging discipline of chemical biology, with a focus on cancer. Bradner is a colleague of Northeastern chemistry and chemical biology associate professor John Engen, who helped Smith win the co-op.

Smith worked with Bradner and other colleagues to treat NUT midline carcinoma cells with a compound developed in the lab. They found that the molecule stops cancer cells from dividing and growing and turns them into normally functioning cells.

It's a long way off, but the compound could be used to treat NUT midline carcinoma, a cancer whose survival rate is about six months after diagnosis.

"It would be unbelievable if it turned into a cancer therapy, and it definitely has the potential after we do more tests," said Smith.

There's no limit to what Smith could accomplish as a researcher or as a practitioner, said Bradner, who called Smith "an extraordinary collegial and professional young man" with a vast knowledge of chemistry, cell biology and X-ray crystallography.

"We have every obligation to cultivate and encourage students like Billy," said Bradner, who explained that Smith's compassion and communication skills are uniquely suited for the multidisciplinary nature of modern medical care. "It warms my heart to think that he's excited about oncology as a clinical focus."

Smith is one of more than two dozen coauthors on the paper, titled "Selective Inhibition of BET Bromodomains." The paper was published in the online edition of *Nature* on September 24.

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