

# Low levels of amplitude-modulated electromagnetic fields elicit therapeutic responses cancer patients

February 13 2012

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Ryne Ramaker, a senior UALR Donaghey Scholar and University Science Scholar with a double major in biology and chemistry, is a co-author of a cancer research paper creating excitement among other researchers. The article published in the January 2012 issue of the *British Journal of Cancer* became the most commonly downloaded article from the journal within two weeks of its publication.

Two years ago, Ramaker, a 2008 graduate of Bentonville High School, was one of only 10 undergraduate students selected nationwide to participate in an undergraduate research program at the University of Alabama at Birmingham's School of Medicine.

Ramaker worked with Dr. Boris Pasche, UAB's Director of [cancer research](#), on a ground-breaking [cancer](#) therapy. The therapy consists of a series of finely tuned, cancer-specific [electromagnetic fields](#) administered in an entirely non-toxic and non-invasive manner. Pasche is the lead author of the [British Journal of Cancer](#) article.

The article reported “clinical evidence that very low and safe levels of amplitude-modulated electromagnetic fields administered via a spoon-shaped probe may elicit therapeutic responses in patients with cancer. However, there is no known mechanism explaining the anti-proliferative effect of very low intensity electromagnetic fields.”

During his internship, Ramaker was involved in the research helping to uncover the mechanism of action of this new treatment before phase three clinical trials were conducted. Specifically, he worked with hepatocellular carcinoma, a form of liver cancer common in South America and Africa.

Ramaker has presented his results at conferences in Arkansas and Alabama, where he won first place for biology research at UAB's Summer Undergraduate Research Conference. He also won Arkansas's Idea Network of Biomedical Research Excellence – INBRE – and second place at the International BioNanoTox Symposium in Little Rock.

He will graduate from UALR this spring and is applying to Ph.D. programs for the fall.

Provided by University of Arkansas at Little Rock

Citation: Low levels of amplitude-modulated electromagnetic fields elicit therapeutic responses cancer patients (2012, February 13) retrieved 25 April 2024 from <https://medicalxpress.com/news/2012-02-amplitude-modulated-electromagnetic-fields-elicited-therapeutic.html>

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