

# EXPRESSION-TARGETED GENE THERAPY FOR CANCER CELL DEATH

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## Project Description

One of the focuses of the Godbey laboratory is the use of gene therapy to treat various cancers. To date, we have synthesized several genes that effectively bring about cell death in specific cells. We have achieved targeted cancer cell death through the use of the gene therapy technique known as "expression-targeting". We have identified several potential targeting promoters within the mouse genome, and want to more-fully understand their effectiveness in treating various cancers.

## Project Objectives

1. Isolate gene control regions from the mouse genome
2. Engineer cancer-specific genes to bring about tumor cell death
2. Positively transfect mammalian cancer cells with pro-apoptotic genes
3. Induce cell death through activation of gene products
4. Analyze results to determine which gene(s) are most effective at bringing about cell death

## Prerequisites

Must have completed the sophomore year in one of the biosciences or bioengineering. Tissue culture experience is preferred.