

Pleistocene Park

Crichton Industries, a biotechnology firm, has been attempting to clone a woolly mammoth (an elephant-like mammal that became extinct about 3,500 years ago) from scattered preserved DNA fragments. Crichton made only slow progress at first; the available mammoth DNA fragments were too short and too numerous to combine into a complete DNA sequence using standard laboratory techniques.

Then, on January 1, 2004, Crichton's lead researcher attended a lecture given by mathematician Rube Goldblum discussing efficient ways to arrange books in libraries. She realized that the method Goldblum was describing could be used to arrange DNA fragments and compile complete DNA sequences. Using Goldblum's technique, on February 2, 2005, Crichton's team compiled a complete woolly mammoth DNA sequence.

Meanwhile, Goldblum published (on March 3, 2006), an academic paper explaining how to apply his book-sorting method to the problem of DNA compilation. An executive at Spielberg Genetics, a competing biotechnology firm, read the paper and decided to try the technique on the woolly mammoth problem. Spielberg compiled its own complete woolly mammoth DNA sequence on April 4, 2007. Because the two companies started from different fragments, their sequences were only about 98% identical.

On May 5, 2008, Crichton proudly announced to the world that its scientists, using confidential artificial insemination techniques, had enabled a modern elephant to give birth to a woolly mammoth, which had the DNA sequence Crichton had compiled using the Goldblum method. The next day (May 6, 2008) Crichton filed a patent application which disclosed its complete DNA sequence and contained four claims:

- (1) "a woolly mammoth"
- (2) "the woolly mammoth of claim 1, having the DNA sequence [of the woolly mammoth disclosed in the application]"
- (3) "a process for DNA sequence compilation, comprising applying the Goldblum algorithm to a multiplicity of DNA fragments"
- (4) "the process of claim 3, wherein the multiplicity of DNA fragments each have the DNA sequence of woolly mammoth DNA"

Sadly, Crichton's woolly mammoth developed a respiratory infection and died on May 7, 2008. The USPTO issued Crichton a patent, without amendment, on June 9, 2009.

You are counsel to Spielberg, which is considering using its complete DNA sequence to impregnate an elephant with a woolly mammoth embryo, and is also considering using the Goldblum technique to find the DNA sequences of mastodons (another extinct elephantlike species). **Has Spielberg violated any of Crichton's intellectual property rights, or would it if it carries out its proposed plans?**