

Compliments of Lakehead University's Paleo-DNA Laboratory

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The Paleo-DNA Laboratory is your ISO 17025 accredited lab for:

- **Forensic DNA Analysis**
- **Mitochondrial DNA analysis**
- **Y-Chromosomal DNA**
- **Ancient DNA Analysis**

Important Dates:

2009 Ancient DNA Training Program dates to be announced.

In this issue:

- DNA of A Holy Bloodline? **1**
- 2008 Ancient DNA Training Program **2**
- The Reality of DNA **2**

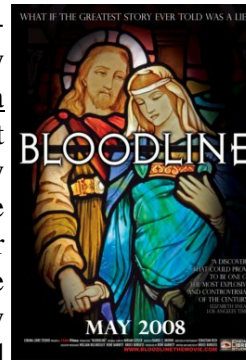
The Paleo-DNA Laboratory does replication work for authentication of results.

DNA of A Holy Bloodline?

Results obtained from a sample analyzed at the Paleo-DNA Laboratory are featured in the film BLOODLINE. The film follows a three year investigation into the so-called bloodline conspiracy made popular by The Da Vinci Code, and the secret society, known as the Priory of Sion, which is said to be behind it all. The producer sets out to find if evidence that Jesus and Mary Magdalene were married and came to France really did exist, and whether the Priory of Sion was, in fact, real, or just a hoax.

There were reports that a tomb was discovered in Rennes-le-Chateau just before the French revolution by a priest. The priest claimed to have found documents and treasure buried there. Some people claim this was part of a great treasure brought back from the Holy Land by the Knights Templar. Most people believe it included a cache of 'heretical' documents which challenged the Church's Doctrine, which the priest then 'sold' to the Vatican for a large sum of money. Whatever the priest found, it made him seriously rich. It is recorded he spent close to \$3

million over a 10 year period, which was a lot of money in those days. The priest died in 1917 never revealing what he found.



In 1999, an English adventurer name Ben Hammott came to the village of Rennes-le-Chateau to try his luck at finding the treasure after reading the book Holy Blood, Holy Grail, which linked the village of Rennes-

le-Chateau to the Merovingian Kings of France and the bloodline of Jesus and Mary Magdalene. It was here he claims to have found a series of hidden clues in a large mural on the church wall in the village indicating a number of landmarks in the area. These clues led him to a small opening in a cave.

Inside this cave was a body covered in a cream-coloured shroud bearing the red cross symbol of the Knights Templar, along with a number of chests, jugs, cups, chalices and parchment scrolls. A strand of hair was removed from the body and genetic analysis performed by the Paleo-DNA Laboratory has revealed a middle-eastern



maternal origin of this individual. For more on this story go to www.bloodline-themovie.com.

*“Mitochondrial DNA
is in our blood.”*

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We value your feedback. If you would like to comment on this issue or would like to suggest ideas to discuss in a future newsletter, please visit the following link:

<http://lucas.lakeheadu.ca/customersurvey>

2008 Ancient DNA Training Program

This year was the 10th Annual Ancient DNA Training Program. Held in May, twenty students successfully completed the course gaining proficiency in extracting, amplifying and analyzing DNA from a variety of sample types under the direction of course instructor Dr. Carney Matheson. This year's students came from the U.K., Australia, Switzerland, the U.S. and Canada. With backgrounds in archaeology, anthropology, biology, and applied biomolecular sciences, these students gained valuable laboratory experience and refined their practical skills in genetic analysis. This year's guest lecturer was Dr. Alex Greenwood from Old Dominion University, Norfolk, Virginia relating his experience with pathogen and mammoth DNA and the problems associated with ancient DNA analysis.



The Reality of DNA

The popularity of TV crime shows is growing at an extreme rate. This is great news for the forensics industry as it is a catalyst for recruitment. However, the actual laboratory work that is portrayed on television is not shown in real-time and the audience is skewed into thinking results can be obtained immediately and from all samples. There is also the portrayal of a laboratory technician who does everything from collecting the sample, to doing the analysis, to arresting the suspect. This is usually not the case. A laboratory technician is usually confined to the laboratory and only practices one discipline such as DNA analysis.

DNA analysis is a series of chemical reactions that enable small amounts of genetic information to be read. A biological sample is first broken up into smaller pieces by cutting, scraping, drilling or milling. The chemical

reaction occurs when specific reagents are added to these smaller pieces which dissolve the genetic material into a solution. The solution is then purified, removing as much non-genetic material as possible. What's left over is our DNA starting material. The analyst decides the type and region of DNA they want to study and the area is then copied or amplified millions of times over. Because of the large amount of DNA copied, the fragments of DNA can be easily read by modern genetic analysis equipment or be seen as a bright band through gel electrophoresis. This is not all that is done in the analysis though. The result has to be replicated to ensure it's authentic to the sample so the whole process must be repeated once again. The DNA process can be completed in as little as two days on an ideal sample, or take as long as weeks or even months for a complete result on a difficult or degraded sample.