

# **SPECIAL TOPICS IN DNA ANALYSIS ABSTRACTS**

## **DNA Profiles in Bone Marrow Recipients**

Elaine Kitano, Oregon State Police Crime Lab – Portland, OR

Mixtures of DNA in evidence samples can be a normal occurrence in forensics, however, it is possible to see a mixture in the reference standard if the individual giving the standard has had a bone marrow transplant. The oral and blood DNA profiles were compared from two bone marrow transplant recipients and their respective donors. The STR analyses of the oral samples from the individuals who had received a bone marrow transplant revealed a mosaic of DNA within their body.

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## **Post-amplification yield gels**

Dona Scarpone, Oregon State Police Crime Lab – Portland, OR

Are your CEs back-logged? Analysts spending a lot of time doing re-injections? Running a post-amplification yield gel may be your answer to a quick and easy way to alleviate some of your CE overcrowding.

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## **Behind the Scenes of BodePlex: Implementation of miniSTR multiplexes on samples from World Trade Center disaster victims**

Courteney W. McCoppin, The Bode Technology Group – Springfield, VA

The terrorist attacks on the World Trade Center (WTC) two years ago launched the largest DNA identification project ever. After the analysis of over 20,000 bones and tissue extracts with traditional STR multiplexes, it became clear that further analysis would be needed. Of the nearly 13,000 bones tested, less than half yielded useful profiles. There was an even lower rate of success from the tissue extracts. In order to obtain results from samples that previously proved unsuccessful, two novel miniSTR multiplexes were developed, BodePlex 1 and BodePlex 2. The manufacture and quality control took place at The Bode Technology Group. Individual primers ordered from outside vendors had to pass through rigorous quality control checks before they could be combined to form the multiplexes. A final stringent quality control check had to be performed on each multiplex batch. In all, 8771 samples were amplified in duplicate with both multiplexes (35,048 total amplifications). The eventual outcome was the development of several hundred more profiles that were used to identify WTC victims.

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## **An Effective Design for Starting a Convicted Offender Program**

Chrystal Bell, Oregon State Police Crime Lab – Portland, OR

When Oregon went to an all-felons database in January 2002, there were nearly 40,000 offenders that were required to submit samples for CODIS. The challenge for us was to find a low cost alternative to buying expensive commercial DNA collection kits. Using local businesses and modern software technology, we found innovative ways to both design our own kit and manage the large volume of samples coming into the lab.

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## **Troubleshooting the Genetic Analyzer 310**

Christina Stivers, Oregon State Police Crime Lab – Portland, OR

Troubleshooting the Genetic Analyzer 310 can be a hair splitting activity – getting to the root of the problem takes patience, time and skill. This talk will cover basic troubleshooting techniques to use when your CE has a loss in sensitivity, raised baseline, resolution issues, matrix issues, an increase or loss in current and error messages.

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## **Correlation of Growth Phase with DNA Results Obtained from Hair Roots**

Susan Hormann/Rhonda Banks, Oregon State Police Crime Lab – Portland, OR

With the advent of more sensitive DNA analysis capabilities, forensic hair examiners are more and more frequently asked to perform hair comparisons as a screening tool for DNA analysis rather than for the value of the comparison itself. Some forensic laboratories no longer perform traditional microscopic hair comparisons. Frequently, however, the number of hairs in a given case is large and many of the hair roots do not yield a DNA result. This study correlates the growth phase of the hair root and the DNA results obtained in an effort to determine if it is possible at the screening level to target hairs that will yield useable DNA results.

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## **SWGDM Update**

Phil Kinsey, Oregon State Police Crime Lab – Portland, OR

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## **Validation of the Qiagen Biorobot EZ1 for the DNA Extraction and Purification of Reference and Evidence Samples for Forensic Casework**

Shawn Montpetit – San Diego Police Department – San Diego, CA