AFFIDAVIT OF JASON R. GILDER

State of_____)
) ss.
County of_____)

Before the undersigned Notary Public, duly qualified and acting in and for said county and state, appeared Jason R. Gilder, to me well known to be the affiant herein, who stated the following under oath:

"1. I, Jason R. Gilder, am a systems engineer at Forensic Bioinformatic Services, Inc. in Fairborn, Ohio. My work involves the review and research of electronic data associated with forensic DNA test results. I have earned a B.S. in Computer Engineering, a M.S. in Computer Science, and a Ph.D. in Computer Science and Engineering at Wright State University in 2001, 2003, and 2007, respectively. My research work has revolved around issues pertaining to the interpretation of forensic DNA evidence. Most of my research has been done in association with Dr. Dan Krane, who has been recognized in courts as a DNA expert for almost 20 years. To date I have published three articles in peer-reviewed journals. My most recent publication is D. Krane, S. Ford, J. Gilder, K. Inman, A. Jamieson, R. Koppl, I. Kornfield, D. Risinger, N. Rudin, M. Taylor, W.C. Thompson.

"Sequential unmasking: A means of minimizing observer effects in forensic DNA interpretation." Accepted for publication in Journal of Forensic Sciences, July, 2008 issue. I have also participated in numerous conferences (e.g. J. Gilder, D. Krane, T. Doom, M. Raymer. "Identifying patterns in DNA change." Proceedings of the 2003 Midwest Artificial Intelligence and Cognitive Science Conference, Cincinnati OH, April 2003). In addition, I have given numerous presentations to professional meetings on topics such as the analysis of human DNA profiles, analysis of DNA databases, and issues pertaining to DNA testing and interpretation.

2. I have been asked by Michael Burt, an attorney in the State of California, to provide this affidavit in connection with a case identified to me under the names *State of Arkansas v. Jessie Misskelley Jr.* and *State of Arkansas v. Damien Echols and Jason Baldwin.* My understanding is that this affidavit will be submitted to one or more courts by Mr. Burt on behalf of his client Jessie Misskelley, as well as on behalf of Damien Echols and Jason Baldwin.

3. I have been provided a CD-Rom by Mr. Burt containing the electronic DNA data for certain evidence samples in this case which were subjected to STR DNA analysis by Bode Laboratory. I have also been

provided with a report from Bode reporting the DNA profiles for the three defendants in the case (Misskelley, Echols, and Baldwin), and the three victims (Branch, Byers, and Moore). Using reliable and generally accepted computer analysis techniques I studied and analyzed the data using the same analysis software utilized by the testing laboratory (Applied Biosystems' GeneScan® and Genotyper®).

4. One of the tested samples is a reported sperm fraction of a penile swab from Mr. Branch labeled, "1_062105-10-G1_A05_10E1SF(10).2_01" and tested on June 21, 2005.

5. Bode laboratory utilized a 75 RFU minimum peak height threshold in their review of the sample.

6. A limit of detection (LOD) is a statistically-based minimum peak height threshold that determines the height at which signal can be distinguished from noise. A limit of quantitation (LOQ) is the height at which signal can be distinguished from noise and the amount of signal can be reliably measured. The methodology for employing an LOD or LOQ has been in use in analytical chemistry for several decades. The methodology for STR DNA testing results has been published (J. Gilder, T. Doom, K. Inman, and D. Krane. "Run-specific

limits of detection and quantitation for STR-based DNA testing." Journal of Forensic Sciences. 2007;52(1):97-101).

7. The limit of detection (LOD) for the analysis run performed on June 21, 2005 is approximately 16 RFUs and the limit of quantitation (LOQ) is approximately 39 RFUs based on the reagent blank sample "1_062105-10-SG1_A01_RB1.2_01."

8. Sample 10E1SF contains additional peaks below the Bode threshold of 75 RFUs and above the limit of detection (LOD) and limit of quantitation (LOQ). For example, the D21S11 locus exhibits a 32.2 allele at 64 RFUs. None of the defendants nor Branch have a 32.2 at D21S11. All defendants and Branch are excluded from contributing the DNA profile observed at D21S11.

9. In addition, the FGA locus exhibits a 19 allele at 33 RFUs, which exceeds the limit of detection (LOD). None of the defendants nor Branch have a 19 at FGA. All defendants and Branch are excluded from contributing the DNA profile observed at FGA.

10. The D16S539 results contain an 8 and 11 peaks of approximate equal height (102 and 97 RFUs, respectively). Since these peaks are above the limit of detection (LOD), they are statistically likely to be associated with true signal and not noise. I have looked carefully at

those signals to see if they can be explained as technical artifacts such as 'pull-up,' 'spikes,' or 'stutter' and I have determined that they are most likely to be legitimate signal arising from DNA associated with the evidence sample. The simplest interpretation of these two peaks is that these are alleles that originated from a single individual.

11. None of the tested victims or defendants have an 8, 11 at the D16S539 locus. All victims and defendants are therefore excluded as the source of the penile swab sample.

12. If called to testify in court, I would provide truthful and accurate testimony about all the subjects that I have covered here."

Further the affiant sayeth naught.

IN WITNESS WHEREOF, I hereunto set my hand this 28TH day of MAY, 2008.

Jason R. Gilder

JASON R. GILDER

Subscribed and sworn to before me this 20th day of May, 2008.

Carolyn Rowland
Notary Public

My commission expires:

Carolyn Rowland
Notary Public, State of Ohio
My Commission Expires March 9th, 2013

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