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Wisconsin Department of Justice

Crime Laboratory Bureau

Bureau Technical Bulletin

First Quarter 2017

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To promote excellence in analysis, training and service to the community and our organization with integrity and uncompromising quality.

Many Thanks

The Employee Recognition Program provides staff the opportunity to internally recognize the outstanding work efforts of the team and individual achievements that occur within the Crime Laboratory Bureau. 2016 was a fantastic year filled with much deserved recognition and 2017 is looking to follow suit. Below are all of the first quarter nominees. Please see the attached informational flyer with information about the nominees and a summary of nominees from 2016.

First Quarter Employee Recognition Nominees

Chris Johnson	Lisa Treffinger	Julie Avila
Brittany Paulson	Margaret Cairo	Alyssa Mares
Meghann McMahon	Madelyne Weismantel	Cully Eberhardy
Brooke Laxton	Mary Barnett	Laurie Hood
Carol Winke	Karri Spitzer	Betty Ventura
Roland Torres	Mallory Zart	Melisa Wittkowske
Xai Xiong		

It takes a lot of talented individuals to guarantee we continue to accomplish the Wisconsin State Crime Laboratory Mission. If you would like to nominate someone for their achievements, complete a nomination form and submit it to your Employee Recognition Committee.

New Employees

Bao Lee
AFIS Technician

[redacted]

Mary Mengel
Toxicologist – Madison

[redacted]

Amanda Litchke
Evidence Specialist-Madison

[redacted]

Natalie Fisher
DNA Analyst - Milwaukee

[redacted]

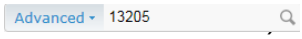
Welcome
Bienvenue
Velkomin
Bienvéni
Bonvenon
Velkommen
Willkommen
Welkom
Benvingut
Herzlich
Dobredojde
Dobrodošli
Selamat Datang
Swagata
Yokôso
Tervetuloa
Vítejte
Bonavinuta
Hwangyong Hamnida
Maligayang Pagdating
Toivottaa
Sugeng Rawuh
Siyakwamukela
Fáilte
Mirëpres
Hospedar
Acollir
Verweklom
Laukiamas
Swaagat
Namaste
Kaabo
Heten
iBiala
Ongietorri
Coscic
Recoger
Karibuni
Sambut
Kaloslthate
Degemer
Mai
Ekomo
Teretulnud
Uvitani
Moguah
Woezor
Hozta
Khoshumadi
Karibu
Swagatham
Mirëseviini
Onvangen
Bienvenido
Sanna da zuwa
Kaloslthate
Welkom
Karibuni
Khwaba
Coming/Tervetuloa
Recoger
Ongietorri
Laukiamas
Swaagat
Tervetuloa
Vítejte
Bonavinuta
Hwangyong Hamnida
Maligayang Pagdating
Uvitani
Teretulnud
Onvangen
Bienvenido
Sanna da zuwa

QUALITY CORNER

Hello quality staff -

Springtime brings tulips, baby bunnies and internal audits. Full external assessments do not exempt us from the annual requirement to internally audit all aspects of our operation. This year each technical and evidence audits will be performed using a single team of experts to review casework in that area. This single team approach is being done to improve consistency and to have a 'local' person on the team. For example, the same three Identification analysts will audit the ID units in Wausau, Milwaukee and Madison. This team will consist of one analyst from each Lab. The 'local' member of the team will still do case file review, just not their own cases. We are also reducing the number of cases reviewed this year because we just had an external review. The evidence inventory, Safety and Quality audits will proceed normally.

2017 Assessment:

Our second full assessment went reasonably well with 5 findings of nonconformance. Two of these findings contained multiple citations which adds up to 11 individual nonconformances to address. The accreditation process is not complete until we have our corrective action plans approved within 30 days (April 5) and resolved to the satisfaction of the Lead Assessor within 90 days (June 4). The official report it is in Qualtrax (enter 13205 

This was an informative assessment, showing us some areas for improvement. Six of the findings were under the ISO clause reserved for "not following your own procedures" (4.2.1). The lesson here is to know and follow the manuals. We can revise, amend or deviate from these procedures but we must follow them as written until one of these change processes is completed.

Errata:

Each Laboratory has a new wireless temperature monitoring system which records temperatures at regular intervals and alerts us when our critical refrigerators, freezers and incubators go out of specifications. Your Laboratory Quality Manager is in charge of this system.

Our accrediting body (ASCLD/LAB) was recently purchased by a larger accrediting body (ANAB). ANAB has since created a new set of supplemental requirements for forensic laboratories that we will need to follow before December 31, 2018. These new ANAB requirements are similar but not identical to the ASCLD/LAB Supplemental requirements we currently follow. If you want to take a peek these new ANAB requirements are in Qualtrax (enter 13327).

We are hoping to upgrade Qualtrax this year.

Please spend a little time each week logging into Qualtrax and attending to your tasks. ☺

Nonconformances

Attached is the latest list of nonconformances. These are offered up to prevent recurrence through awareness and pattern recognition. Live, learn and laugh some.

That's it for this corner. Thanks for all your quality work!

Casey Collins, Quality Assurance Coordinator

CRIMINALISTICS

Crime Scene Response Call Outs (January through March)

This was another busy one for the individuals who volunteer for the Crime Scene Response Unit. Here are the response call-outs:

DATE	AGENCY ASSISTED	SCENE TYPE
01/01/2017	Fox Crossing PD	Autopsy
01/19/2017	Greenfield PD	Vehicular Death (OIS)
01/20/2017	Wauwatosa PD	Technical Assistance
01/21/2017	Wauwatosa PD	Technical Assistance
01/21/2017	Wauwatosa PD	Technical Assistance
01/21/2017	Wauwatosa PD	Technical Assistance
01/26/2017	DCI-Madison	Autopsy
02/02/2017	DCI-Milwaukee	Homicide (OIS)
02/09/2017	DCI-Milwaukee	Vehicle Processing
02/08/2017	Wisconsin Rapids PD	Autopsy
02/08/2017	Shawano SO	Technical Assistance
02/19/2017	St. Croix SO	Homicide/Stabbing
02/27/2017	DCI-Wausau/Lincoln	Homicide (OIS)
02/28/2017	DCI-Wausau/Lincoln	Autopsy
03/02/2017	DCI-Wausau/Marathon	Homicide (OIS)
03/02/2017	DCI-Wausau/Marathon	Autopsy
03/16/2017	Wauwatosa PD	OIS
03/17/2017	Wauwatosa PD	Autopsy
03/18/2017	Wauwatosa PD	OIS
03/20/2017	Wauwatosa PD	OIS
03/22/2017	DCI-Wausau/Marathon	OIS
03/22/2017	DCI-Wausau/Marathon	OIS
03/22/2017	DCI-Wausau/Marathon	OIS
03/22/2017	DCI-Wausau/Marathon	OIS
03/23/2017	DCI-Wausau/Marathon	Vehicle Processing
03/24/2017	DCI-Wausau/Marathon	Autopsy
03/24/2017	DCI-Wausau/Marathon	Autopsy
03/27/2017	Wauwatosa PD	OIS
03/31/2017	DCI-Portage	Technical Assistance
03/31/2017	DCI-Portage	Technical Assistance

Criminalistics Training Events

Article Written by Maria Gibbs, Forensic Scientist Supervisor

With two new Fingerprint/Footwear analysts, another in footwear training, CSR Photography and Team Lead training, plus vendor outreach opportunities; there has been no shortage of training in Madison Criminalistics. Below are a few of the highlights.

The camera view is the image CSR photographer and Imaging Specialist Brooke Laxton captured during a training event with Imaging Unit TUL Aaron Matson.

“It’s basically a double exposure made during one long exposure”. During the roughly 66 seconds the shutter was open, luminol was applied, in total darkness, and the camera obtained that light information from the reaction (of luminol with blood) during the entire 66

CRIMINALISTICS

seconds. At some point during that exposure, white light was briefly added for a few seconds - I believe Brooke pointed a flashlight at the ceiling. This allowed for the background info to be seen in addition to the luminol information. Otherwise, without the white light being added, you would just get some cool blue marks in an otherwise black image. One important element of this type of image capture is there can be no movement of the camera during the exposure.

Footwear trainee Vanessa Styx and her mentor Laura Matson use new products to create test impressions in snow and sand. The "snow" is a synthetic material made by mixing a polymer powder with water, is non-toxic and safe for the environment. Success with the faux snow varied, but they found the results improved as the material dried.

Kinetic sand, on the other hand, was a success right out of the package. The material provided excellent detail, maintained its shape, is inexpensive, mimics real sand, and is re-usable.

When agencies submit shoe standards and images of footwear impressions, at a crime scene, analysts may create test impressions in similar substrate (snow, sand, dirt, etc). Those test impressions can then be photographed and compared to agency submitted images.

The AFIS Unit had the opportunity to visit our Morpho system support group – Susan Wright and Jeff Blankenship, stationed down at the Risser building. This was a chance for the Unit to ask system related questions, view demonstrations, and broaden their understanding of the WI AFIS database. Though the original intent was for the Unit to expand their knowledge, the Morpho support team appreciated the opportunity to learn about the expansion of AFIS procedures and how accreditation standards impact processes. In the first photo, Susan shows the group the temperature controlled room that houses the local data center. On the right, Jeff and Karen Narloch demonstrate a livescan capture of a digital 10 print record. Overall, both AFIS and Morpho gained perspective on their shared and individual responsibilities and how their processes overlap. Everyone agreed they benefitted from the visit. As one person put it, "It was great being able to connect with the people we interact with everyday".

CRIMINALISTICS

Forensic Imaging Unit

Article Written by James Armstrong, Forensic Imaging Specialist

Brooke Laxton, James Armstrong and Ze Xiong successfully completed LEVA (Law Enforcement & Emergency Services Video Association International) Level 1 Video Analysis training on April 7th 2017. Their training consisted of a five day course covering video capture, video evidence collection, video integrity and authentication and case law. At the end of the course, each student had to successfully pass a sixty question short answer test, five question oral questionnaire and practical exam. With an average class failure rate of 15-20%, Brooke, James and Ze were part of a class that all of the attendants passed.

With their successful completion of the level 1 course, they are now qualified to attend the level 2 course and will continue with their goal of becoming LEVA certified.

A Novel Approach to Writing a Training Manual

Article Written by Karley Hujet, Identification Technical Unit Leader

It has been recognized for some time that both the latent print and footwear training manuals that are currently in place are out of date and in dire need of updating. This task was repeatedly pushed down on the Unit's To-Do list because of other responsibilities, so unfortunately some of the newer trainees were stuck with these outdated training programs. The addition of two new fingerprint analysts at the Madison Lab and an analyst in need of footwear training pushed the issue into the forefront and made updating these manuals a priority.

Due to the amount of time that is necessary to write two new training manuals and the impending start date of the new trainees, a decision was made to write the manuals concurrently with the actual training. To begin the process, an outline was developed for both the fingerprint and footwear training manuals which laid out each module within the training program. These outlines have since been modified a bit, but the basic structures are still in place and will provide the basis for the final version of the manuals.

Prior to the trainee beginning a module, the manual's author would identify the module's scope, topics, training activities, required readings, and exam(s). Training activities and exam(s) with expected results were also developed. The content for the modules was developed based on the training manuals currently in place at the Wisconsin State Crime Laboratory, training manuals from other crime laboratories, outside training materials, and input from current WSCL Identification Unit analysts.

The trainees were instructed to give feedback on the content of the module in an effort to catch any errors or redundancies, particularly in the required reading. In addition, the trainer was asked to provide feedback to help improve the initial versions of the exercises and exam(s) to optimize the training that the trainees will receive.

To date, the footwear trainee has almost completed the revised footwear training program and the updated training manual will soon be ready to replace the current manual. The fingerprint training manual is still being revised based on the feedback of both of the trainees and the trainer.

We have found that building the manuals in this manner, with the constant real-time feedback has been extremely beneficial to both the trainees and the trainer and will ideally provide future trainees with a more current and useful training program.

Controlled Substance Unit Update

Article Written by Sandy Koresch, Controlled Substance Technical Unit Leader

New Analyst

The Controlled Substances (CS) unit in Madison welcomed Mike Larson from the Toxicology unit. This fills the CS analyst position left open when Joseph Wermeling retired. It wasn't a far leap for Mike, since he previously worked in the CS unit at both the Milwaukee and the Madison Labs for several years prior to becoming a toxicologist. Mike completed his refresher training and started working cases in March. Welcome back Mike!

Summer Internship

The CS unit in Milwaukee plans to mentor a summer intern. Projects will include optimizing GC and GC/MS conditions for discrimination of positional isomers of 2-furanyl fentanyl and 3-furanyl fentanyl and studying retention time variation for evaluation of currently accepted values.

ASCLD/LAB Assessment

The CS unit had one finding regarding reporting legitimate pharmaceutical tablets as a homogenous population. Changes had been made to the CS Policy Manual to incorporate new wording that will more accurately reflect the analysis performed.

New DiscovIR-GC Instrumentation

The new GC-IR (gas chromatography-infrared spectroscopy) system was installed at the Wausau laboratory in January. Training for use and operation is scheduled in April. GC-IR is similar to GC-MS with the capability to separate components followed by a detector with high discriminating power. The CS unit looks forward to the benefits GC-IR will provide in identification of controlled substances specifically in regards to structural isomers. Madison Kniskern and Katie Hoffmeyer are currently working on validation/performance evaluation for this new equipment.

Heroin Quantitation Project

The CS unit continues to work with DCI on the heroin quantitation project. Over 100 heroin samples have been collected for quantitative analysis. Birjees Kauser and Cully Eberhardy at the Milwaukee lab have completed analysis on over 80 of these samples.

Method Validation

Billie Robbins and Michelle Fechhelm will be working on method validation for quantitative analysis of methamphetamine. This method will be used in federal cases where "actual" methamphetamine sentencing guidelines are used.

Trace Unit Update

Article Written by Ruth Henk, Trace Technical Unit Leader

The theme of the Trace Unit lately seems to be training. The Trace Unit is currently cross training Meghann McMahon from the Controlled Substance Unit in Fire Debris/Ignitable Liquids analysis. She has some Trace experience from her previous employment at the New York City Police Department Crime Laboratory including glass comparisons and plastic bag examinations.

The Trace Unit will also be working with an intern this summer in developing an FTIR database of polymers and compounds found in explosive cases. Time permitting; the intern will also be assisting with organization of fiber reference samples.

Recently, Team Leader training was given to seven CSR personnel. They all did well with the practical exercises considering most scenes have not involved collection of Trace Evidence.

DNA

The Ever Changing World of the DNA Analysis Unit

Article written by Gretchen DeGroot, DNA Analysis Technical Unit Leader

Beginning on January 3rd, 2017, the DNA Analysis Unit began analyzing DNA profiles using an amplification kit that examines 23 autosomal STR loci, 3 Y-STR loci and a sex determining loci. This is roughly a 30% increase in data per sample from the previous amplification kit. The additional loci were added to the CODIS core loci to increase the power of discrimination, reduce the number of adventitious matches and to increase the compatibility with international databases. What this additional information means for the DNA Analysis is about a 30% increase in time spend analyzing data. In an attempt to lessen the impact on this increase in data and to improved consistency in interpretation a number of excel based tools were also introduced at the same time the new kit came on-line.

This year we are working on validating or will be validating a couple other instruments and methods that will modify our work flow. Currently, we have a group working to validation the QiaCube for hands free differential extractions along with the EZ1 for purification. These two instruments will minimize the need to perform organic extractions saving analyst time. This team is also performing an evaluation on a new model of thermal cycler since the model that we currently use is no longer being sold. Another change that will be occurring this year will be a new model of the genetic analyzed that is used to separate and detect the DNA fragments to determine a STR DNA profile from an item. This new analyzer will replace the existing ones which will no longer be supported by the manufacture. This new analyzer will require a full validation with our autosomal and Y STR amplification kits.

The DNA Analysis Unit will also be purchasing and validating probabilistic genotyping software this year. This software uses more data present in mixture thus providing more weight to inclusions and stronger support for exclusions. Given the type and number of cases that the DNA Analysis Unit is working this software program will be an excellent tool to present associations in mixtures. This validation is anticipated to take time to complete given all the data and samples that must be tested and the training necessary before we can bring it on line.

Besides these larger projects we are also investigating other smaller modifications to the workflow in the DNA Analysis Unit that should improve efficiency and reduce quality incidence. We will keep you informed as the year progress.

DNA Databank Unit: Pilot Program Update

Article written by Margaret Ringberg, DNA Databank Forensic Program Technician

The Pilot Program for the Databank's new DNA collection kits is in full swing! The process began in early March when four agencies were selected and asked to participate; La Crosse County Sheriff's Office, Dane County Sheriff's Office, Milwaukee County Sheriff's Office, and Milwaukee House of Corrections all agreed to be our guinea pigs. Before the program could begin each agency was required to receive training on how to use the new kits. DNA Databank Supervisor Melisa Wittkowske, CODIS Administrator Charles McCartney, DNA Databank Technical Unit Leader Jen Honkanen, and I, Forensic Program Technician Margaret Ringberg, conducted the training on site for each agency the last week of March.

While the old kit contains 13 individual pieces, the new kit includes only 3, the collection device, a coin envelope to hold the device, and a mailing envelope to send the device and

DNA

accompanying submission form back to the Databank. Old kits asked the agencies to collect two swabs from an individual.

The new kit's collection device is a self-contained system where a sponge-like swab collects the sample, is folded down onto color changing FTA paper, and inserted back into its outer covering. Perhaps the biggest change the agencies were happy to see was the lack barcodes. The agencies no longer have to choose between blue arrest barcodes or white conviction barcodes, the barcoding process has been moved in-house to the Databank. Even the envelopes are now self-adhesive, eliminating the old kit's multiple pieces of sealing tape that the agencies were quick to comment they never liked.

The agencies' response so far to the new kits, and the collection device itself, has been positive. While the other agencies preferred to start the first week of April, Milwaukee County House of Corrections was so excited to start using them, we received their first batch of kits two days after their training. Officer David Siejowski, who attended the training at Milwaukee HOC, was quick to send us an email saying, "LOVE!!!!!!! the new kits. They are much easier for us". Now a couple weeks into the Pilot Program the Databank has received 117 kits from all of the participating agencies with a total of 8 errors, one of them being a mismatched sample and submission form. In the next coming weeks the Databank will be developing and evaluating ways to handle and organize the new kits, establishing a set protocol by the end of the Pilot Program in late June. Once all the kinks have been worked out, training will be conducted at all collection agencies and the kit will be released statewide.

DNA Intern Projects

Article written by Dan Campbell, Forensic Scientist Supervisor

Megan Luebbe has been interning at the Madison Crime Lab in the DNA Analysis Unit since the end of January. She is originally from Wausau and is currently a senior genetics and criminal justice student at UW Madison. Over the course of the semester, she has been working on two different projects for the DNA Analysis Unit. The first project she worked on was an investigation into unused dental floss provided in sexual assault kits. This research was prompted by considerations of discontinuing use of the item due to concerns by healthcare professionals about patient safety and the spread of infectious diseases. Questions have also been raised about the possibility of contaminating DNA existing on the unused floss. The latter question was looked into by performing extractions on twenty samples from two different lots of unused floss.

The second project that Megan has recently started is a comparison of two new types of filtered spin baskets which are being considered for use with our DNA extraction procedures. The DNA IQ™ CW Spin Basket by Promega and the Investigator® Lyse&Spin Basket Kit by Qiagen are two products that both provide the ability to lyse samples and separate solid substrates in one step. Use of one of these products could potentially save analysts time, as well as decrease the risk of contamination. It is currently being researched how the DNA recovery abilities of these spin baskets compare to those that are presently in use.

"Getting to Know"

Casey Collins
Quality Assurance Coordinator

[redacted]

1. What is your current title? **Quality Assurance Coordinator**

2. When did you start at the laboratory? **I began in June 1992.**

3. Have you held any other positions in a forensic laboratory?
Short answer: Yes.
Long answer: I worked as a Toxicologist at a Coroner's Lab in Tucson AZ, then to a high volume urine drug testing laboratory in CA. I worked in a clinical toxicology lab working for HMO for a year, then took a job at the Los Angeles Coroner's for six years doing method development. After that I took a job at the WI state crime lab as the Toxicology Technical Unit Leader. Promoted to Chemistry Supervisor and Lab Quality Manager until finally becoming the Bureau Quality Assurance Coordinator. *Phew*

4. If you were not working at the laboratory what would you be doing (no limitation for money/family etc.)?

[redacted]

5. Do you have any pets? If so, what kind and what are their names?

[redacted]

6. Describe yourself in three words.

[redacted]

7. Name two things you consider yourself to be good at.

[redacted]

8. If you could have any super power what would it be?

[redacted]

9. Do you cook and what is your favorite food?

[redacted]

10. What is the most adventurous thing that you have ever done?

[redacted]

Laboratory Assessment Survival Pictures

Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do. If you haven't found it yet, keep looking. Don't settle. As with all maters of the heart, you'll know when you find it.

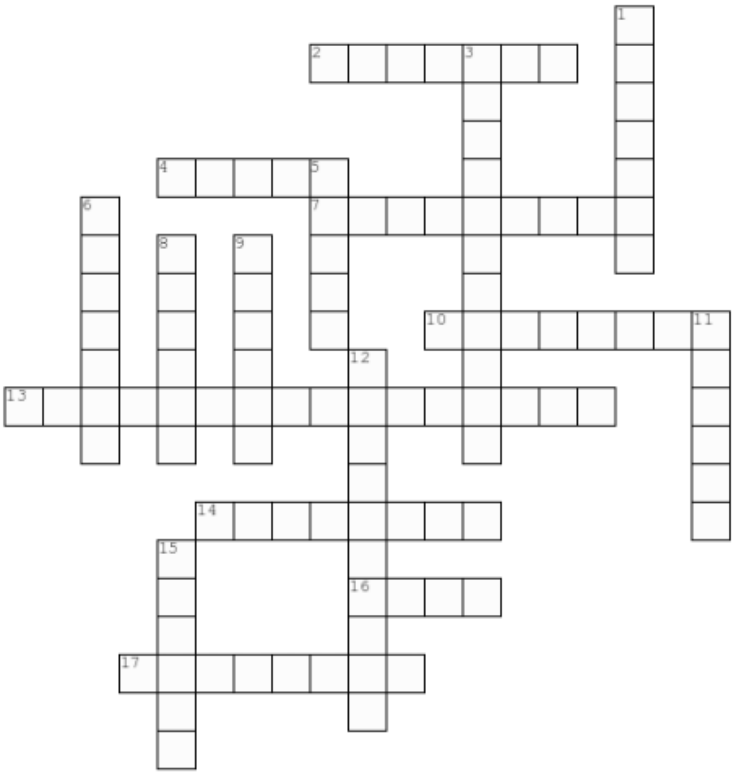
-Steve Jobs

Newsletter Puzzle

If you are stumped talk to your resident DNA Analyst as these were some of the questions used at the most recent joint unit meeting!

Trivia!

Complete the crossword below



Created with TheTeachersCorner.net Crossword Puzzle Generator

Across

2. In mythology what is the offspring of a god and mortal called?
4. There are over 417 national what in the United States?
7. In North Carolina it is illegal to use what to plow fields?
10. What fictitious castle has 142 staircases? Hint: Students may be of several factions including hufflepuff or ravenclaw.
13. What founding father was knocked unconscious while trying to electrocute a turkey?
14. Who does Casey Collins resemble?
16. In the BBC approved Dr. Who, what color is the TARDIS?
17. What is the name of a vegetable that is also a flower?

Down

1. US Federal Law specify what color underwear for crash test dummies?
3. Who was the first country artist to sell greater than 10 million copies of an album?
5. How many of the nine planets have moons?
6. Who holds the most innings pitched in a major league season?
8. What animal has two thumbs on each front paw and fingerprints like a human?
9. What gift does Hagrid give Harry in Diagon Alley?
11. What did J Edgar Hoover ban people from walking on?
12. Of the twelve labors Hercules performed, what is number seven?
15. How many Crime Scene Response call outs were there this last quarter?

CLB Newsletter

To find previous versions of the CLB newsletter they are located on the X: drive under private/dles/CLB Newsletter