

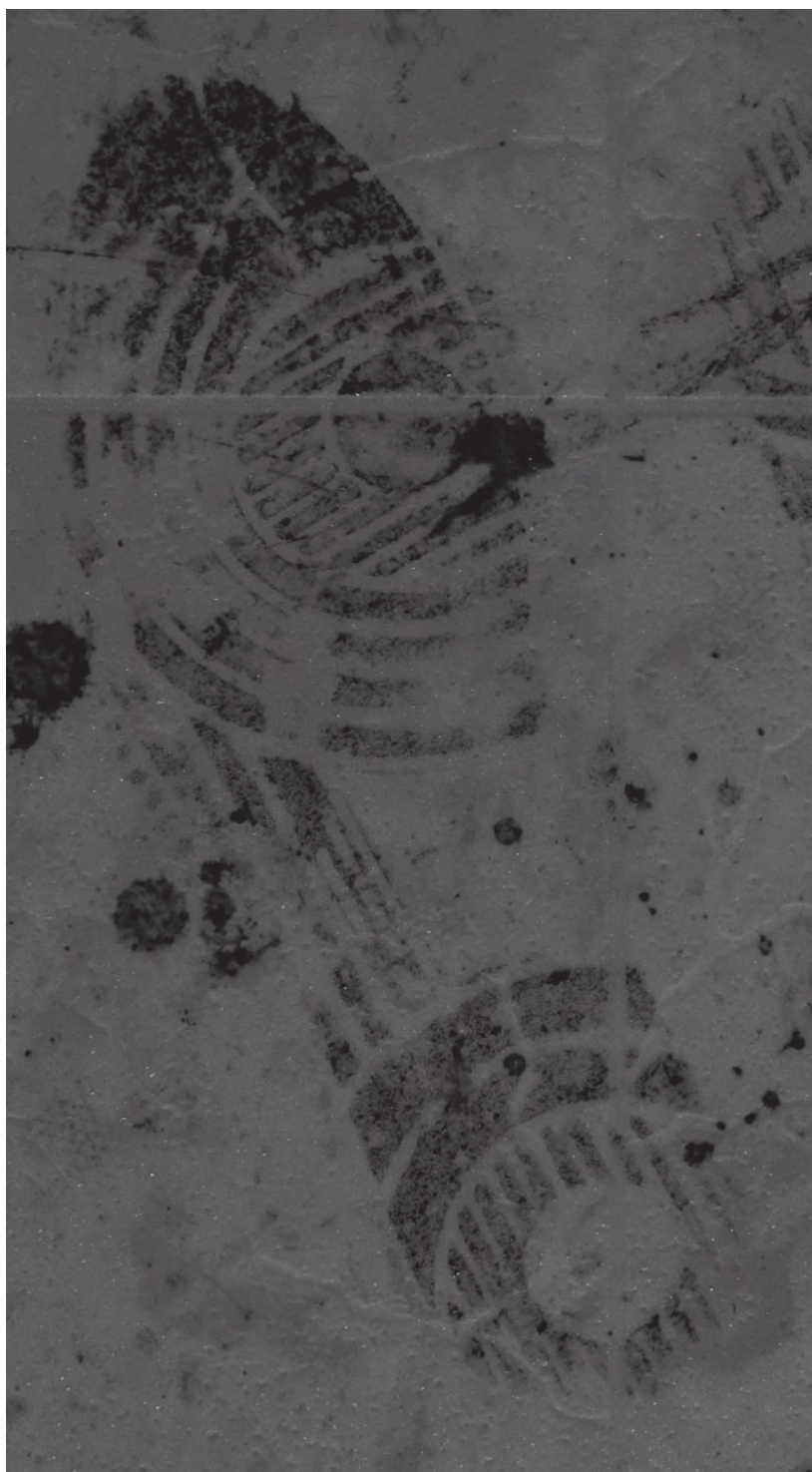


Crime Scene



Spring 2014

Volume 40, Issue 2



May 2014

NWA FS NEWSLETTER

Editor's Message

Spring certainly came on fast! I know that I have been very busy lately and I'm sure that I am not the only one.

This issue may appear to be condensed but there is some great information inside. Daniel Peterson submitted a very interesting piece on the trail that Oregon took to achieve their 5,000 CODIS hits - he he! And our librarian, Jeff, gave us some links to some useful research reports.

While this issue is getting to you a bit late I am going to solicit you to get me something for our summer issue. You all know the deal - even if you don't think it's interesting or consider it not significant - there is probably one or more of our members that would welcome the information. Before thinking too much about it and dismissing it away you should just jot down the case that you recently examined or an idea or question that you had and send it my way. I'll try and help anyone out if they want to share something for the newsletter.

Go out and enjoy - but think about submitting something!

*Thank you!
Jeff Jagmin*

About the Newsletter...

Crime Scene is the official publication of the Northwest Association of Forensic Scientists. It is published 4 times a year in the months of January, April, July, and October. The Newsletter welcomes submissions from its membership such as technical tips, case studies, literature compilations, workshop or training notifications, reference citations, commentary, historical accounts, and other topics of interest to the membership. The views expressed in articles contained in this publication do not necessarily represent the views of the Northwest Association of Forensic Scientists. The Association neither guarantees, warrants, nor endorses these views or techniques but offers these articles as information to the membership.

Please submit material for publication in Microsoft Word for Windows format as an e-mail attachment or on compact disk (CD). All technical material will be subject to peer review by NWA FS members. Requests for permission of any material contained in this newsletter may be addressed to the editor. Requests, or questions, of technical submissions will be directed to the originating author. For more information regarding the Newsletter contact:

Jeff Jagmin (editor)
Washington State Patrol Crime Laboratory
Jeff.Jagmin@wsp.wa.gov or editor@nwafs.org



*NWAFS
Crime Scene
TABLE OF CONTENTS*

<i>President's Message</i>	5
<i>Kathy Kittell, NWAFS President</i>	
<i>Asked & Answered - Search tips from a forensic library</i>	6
<i>Jeff Teitelbaum, Washington State Patrol</i>	
<i>NWAFS 2014 Meeting Save the Date!</i>	11
<i>The Oregon 5K</i>	12
<i>Daniel Peterson, Oregon State Police Portland Forensic Laboratory</i>	
<i>A Spring Fishing Trip to Remember</i>	20
<i>Jeff Jagmin, Washington State Patrol Crime Laboratory</i>	
<i>Advanced Footwear Impression Examination Class</i>	22
<i>Caption This!</i>	24

NWAFS OFFICERS for 2013 - 2014

Executive Committee

President	Kathy Kittell Oregon State Police Kathleen.Kittell@state.or.us
Vice-President	Devon Sommer Oregon State Police Devon.Sommer@state.or.us
Member-at-Large	Jennifer Malone Wyoming State Crime Laboratory Jennifer.Malone@wyo.gov

Secretaries

Membership	Corinna Owsley Idaho State Police Corinna.Owsley@isp.idaho.gov
Secretary-Treasurer	Heather Campbell Idaho State Police Heather.Campbell@isp.idaho.gov
Technical	Trevor Allen Washington State Patrol Trevor.Allen@wsp.wa.gov
Editorial	Jeff Jagmin Washington State Patrol Jeff.Jagmin@wsp.wa.gov

PRESIDENT'S MESSAGE

Changes The early quarter of 2014 has already provided us with some major changes to the Forensic Science community. One major change than I am sure most everyone has heard about is the changeover from the Scientific Working Groups (SWG) to the new Organization of Scientific Area Committees (OSAC). OSAC was the result of a NIST and Department of Justice memorandum of understanding from 2013 with the goal of strengthening the field by improving standards and practices in the field of Forensic Science.

At this year's AAFS meeting in Seattle, individuals from NIST provided a very in-depth presentation about the plans for how the OSAC will be organized and how the different committees will operate. Their presentation is currently available as a webcast, and they have made it easy to navigate and screen slides if you would like to skip around for specific information. The presentation can be viewed at:

<http://psav.mediasite.com/mediasite/Play/8e65ad3f9958440b8eab9da0831e3b1d1d>

The most recent information regarding OSAC is their recruitment for membership. I would like to encourage anyone from our membership that feels they can make a positive contribution to consider applying.

Some information you may consider if you are thinking of applying is that the OSAC membership is a 3 year term. It has been proposed that both in-person and virtual meetings are to be held throughout the year. At least one in-person meeting will be held during the year and no more than 5 days per year will be scheduled for virtual meetings. NIST will be providing funding for travel, lodging and per diem of all members.

The application process is open now and will be open until 11:59 PM (EDT), Sunday, May 11, 2014 and is a self-nomination process. Applications will be accepted via an online form at:

<https://www.nist.gov/forensics/osac-application.cfm>

Joint Meeting Preparation Next month I will be attending the California Association of Criminalists (CAC) spring meeting in San Diego. The purpose of my visit will be to connect with their board and any planning committee members to discuss ideas for our joint meeting coming up in October and bring back information to our board. I am looking forward to getting a firsthand look at how CAC hosts their meetings and to start thinking of how best we can merge our two styles together. I foresee a great joint CAC/NWAFS meeting happening in the fall and hope all of you have the dates October 20-24 on your radar and are able to join us in Sonoma County, California.

Enjoy the spring season!

Kathy Kittell, NWAFS President
Kathleen.Kittell@state.or.us



Asked & Answered

Search tips from a forensic library

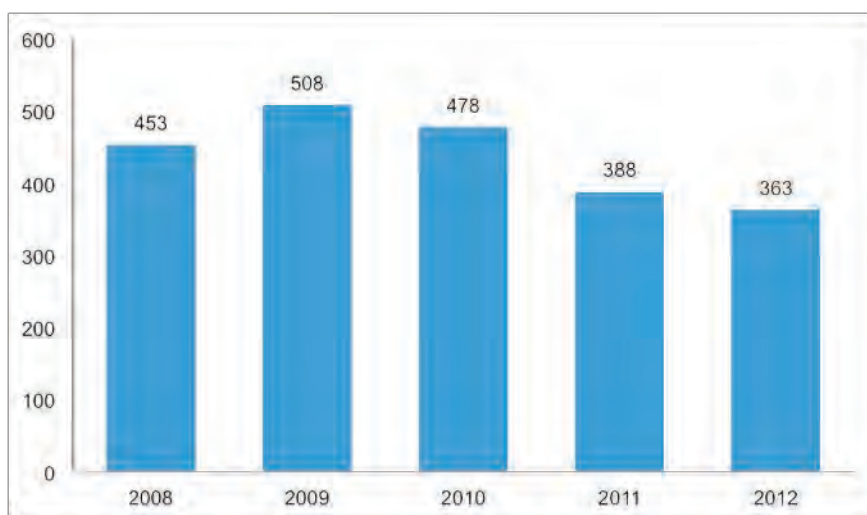
Jeff Teitelbaum, MLIS | Forensic Library Services
Washington State Patrol / Seattle Washington

Recent news in the forensic sciences

Criminalistics research reports



Since 1995, the **National Institute of Justice** has sponsored thousands of research projects relating to the forensic sciences (see graph below for the number of awards given from 2008-2012).



Each funded project must produce a final report that is then made available to the public at no cost. Projects cover every forensic discipline: toxicology, tool mark analysis, DNA, fire investigation, ballistics, drug analysis, latent prints, bloodstain pattern analysis, crime scene investigation, etc. They also cover many other topics related to crime: prisons, criminal psychology, criminal sociology, juvenile crime, drug programs, criminal recidivism, etc.

For this column, I have extracted only the reports pertaining to the forensic sciences, and in particular, fingerprints and firearms. Future columns will focus on other disciplines. Please find the list of reports below, along with their links for downloading.

Fingerprints

The Acquisition of Sebaceous Fingerprint Topology Using Columnar Thin Films (CTF) on Forensically Relevant Substrates

Robert Shaler, Akhlesh Lakhtakia

November, 2013

Download the report [here](#)

Application of Spatial Statistics to Latent Print Identifications: Towards Improved Forensic Science Methodologies

Stephen J. Taylor, Emma K. Dutton, Patrick R. Aldrich, Bryan E. Dutton

[Western Oregon University](#); December 2012

Download the report [here](#)

Cognitive and Contextual Influences in Determination of Latent Fingerprint Suitability for Identification Judgments

Peter Fraser-Mackenzie, Itiel Dror, Kasey Wertheim

Cognitive Consultants International, London, U.K; February 2013

Download the report [here](#)

Contactless Fingerprint Technologies Assessment (Version 2)

Phillip Wiggin, Lars Ericson, Ph.D.

[ManTech Advanced Systems International](#); Feb 2014

Download the report [here](#)

Establishing the Quantitative Basis for Sufficiency Thresholds and Metrics for Friction Ridge Pattern Detail and the Foundation for a Standard

Randall S. Murch, A. Lynn Abbott, Edward A. Fox, Michael S. Hsiao, Bruce Budowle

[Virginia Tech](#); 2012

Download the report [here](#)

Evaluation of Contact versus Contactless Fingerprint Data (Final Report v2)

[Azimuth Inc.](#); Feb 2014

Download the report [here](#)

Improving the Understanding and the Reliability of the Concept of “Sufficiency” in Friction Ridge Examination

Cedric Neumann, Christophe Champod, et al

[Pennsylvania State University](#); Dec 2013

Download the report [here](#)

The Information Content of Friction Ridge Impressions as Revealed by Human Experts

Thomas Busey, Chen Yu

[Indiana University](#); Jan 2014

Download the report [here](#)

Mobile Fingerprint Capture

Sam Mil'shtein, Ph.D.

[Advanced Electronic Tech Ctr](#); [UMass Lowell](#); Feb 2014

Download the report [here](#)

Quantitative Measures in Support of Latent Print Comparison

Sargur N. Srihari

University at Buffalo; February 2013

Download the report [here](#) (32MB file)

Smartphone Technology for Capturing Untreated Latent Fingerprints Feasibility Research

Tony Warren

[EOIR Technologies Inc.](#); July 2013

Download the report [here](#)

Specific Heat Capacity Thermal Function of the Cyanoacrylate Fingerprint Development Process

Charles A. Steele, Mason A. Hines, Lara Rutherford

[Aneval, Inc.](#); 2012

Download the report [here](#)

University of Massachusetts Lowell 3D Contactless Fingerprint Scanner: Technology Evaluation (Version 2)

Phillip Wiggin, Lars Ericson, Ph.D.

[ManTech Advanced Systems International](#); Feb 2014

Download the report [here](#)

Firearms

Consecutive and Random Manufactured Semi-Automatic Pistol Breech Face and Fired Cartridge Case Evaluations

Ashley Chu, Shannon McClorry et al

[University of California, Davis](#); Jan 2014

Download the report [here](#)

Development of Synthetically Generated LEA Signatures to Generalize Probability of False Positive Identification Estimates

Benjamin Bachrach; Pan Gao; et al

[Intelligent Automation, Inc.](#); Jan 2013

Download the report [here](#)

An Empirical Study to Improve the Scientific Foundation of Forensic Firearm and Tool Mark Identification Utilizing Consecutively Manufactured Glock EBIS Barrels with the Same EBIS Pattern

Thomas G. Fadul, Jr., Gabriel A Hernandez, et al

[Miami-Dade Police Department Crime Laboratory](#); 2013

Download the report [here](#)

Firearms Stolen During Household Burglaries and Other Property Crimes, 2005-2010

Lynn Langton

[Bureau of Justice Statistics](#); 2012

Download the report [here](#)

Forensic Evidence at Murder Trials in Phoenix, Arizona

Tom McEwen, Ph.D., Edward Connors

[Institute for Law and Justice](#); Dec 2013

Download the report [here](#)

New Approaches to Understanding and Regulating Primary and Secondary Illegal Firearms

Glenn Pierce, Anthony Braga, Garen Wintemute, Matthew Dolliver

[Northeastern University](#); 2013

Download the report [here](#)

Opening the Black Box of NIBIN: A Descriptive Process and Outcome Evaluation of the Use of NIBIN and Its Effects on Criminal Investigations, Final Report

William King, William Wells, Charles Katz, Edward Maguire, James Frank

[College of Criminal Justice](#); [Sam Houston State Univ](#); October 2013

Download the report [here](#)

Rapid Screening and Confirmation of Organic GSR using Electrospray Mass Spectrometry

Bruce McCord, Ph.D., Jennifer (Greaux) Thomas

[Florida International University](#); Dec 2013

Download the report [here](#)

Review of Gun Safety Technologies

Mark Greene Ph.D.

June 2013

Download the report [here](#)

Jeff Teitelbaum

April 18, 2014

To subscribe to my email alerts on forensic-related material, send a note to

Jeff.Teitelbaum@wsp.wa.gov

NWAFS 42nd Annual Training Conference
October 20-24, 2014
Rohnert Park, California



SAVE THE DATE!



The Double Tree
One Doubletree Drive
Rohnert Park, California, 94928

<https://resweb.passkey.com/go/nwafs>

1-707-584-5466

\$118 per night



The Oregon 5K

Daniel Peterson
Oregon State Police Portland Forensic Laboratory

Athletes take heed! The Oregon 5K is not a running event. In fact, there is no finish line. The participants are not winners, only losers who were forced to register by law. And the top prize awarded is... jail time. Even so, the Oregon 5K is thrilling, as it refers to achieving 5000 hits (i.e., crimes linked or solved) using CODIS (the Combined DNA Index System). Oregon achieved this historic 5K milestone in 2013, one of only a dozen states to go so far, so fast.

How does CODIS work? CODIS blends forensic science, computer technology, and dedicated staff into an effective tool for solving crime. CODIS enables federal, state, and local crime labs to exchange and compare DNA profiles electronically, thereby linking crimes to each other and to convicted offenders. A “hit” occurs when we are able to match an unsolved case to a convicted offender, or to another unsolved case.

The Oregon State Police began DNA testing in 1990. After a two-year validation period, the unit began using the (older) RFLP technique in February of 1992. In 1999, the laboratory transitioned to utilizing the newer STR DNA technique. STR testing remains the national standard today, used in crime laboratories throughout the U.S.

Oregon’s first hit occurred in 1994. Hit #1000 came after twelve years (2006). Hit #5000 arrived just seven years later (2013). Predictions for the arrival of hit #10,000 vary widely, and depend upon projections for staffing levels, technology changes, and the total number of samples in CODIS.

What samples are in CODIS? DNA profiles are generated from biological material left at a crime scene by a perpetrator, and are entered into the CODIS database. Also in the database are DNA profiles acquired from known individuals convicted of past crimes. On September 29, 1991, the Oregon Legislature passed a law requiring sex offenders and murderers to submit blood samples to the Oregon State Police DNA unit for databasing purposes. In 1999, the law was expanded to include first-degree

burglary and assault convictions, and the collection process was simplified to using oral swabs instead of blood. In 2002, the law was again expanded, this time to include all felony convictions. This significantly boosted the number of submissions and, consequently, the number of CODIS hits (Figure 1).

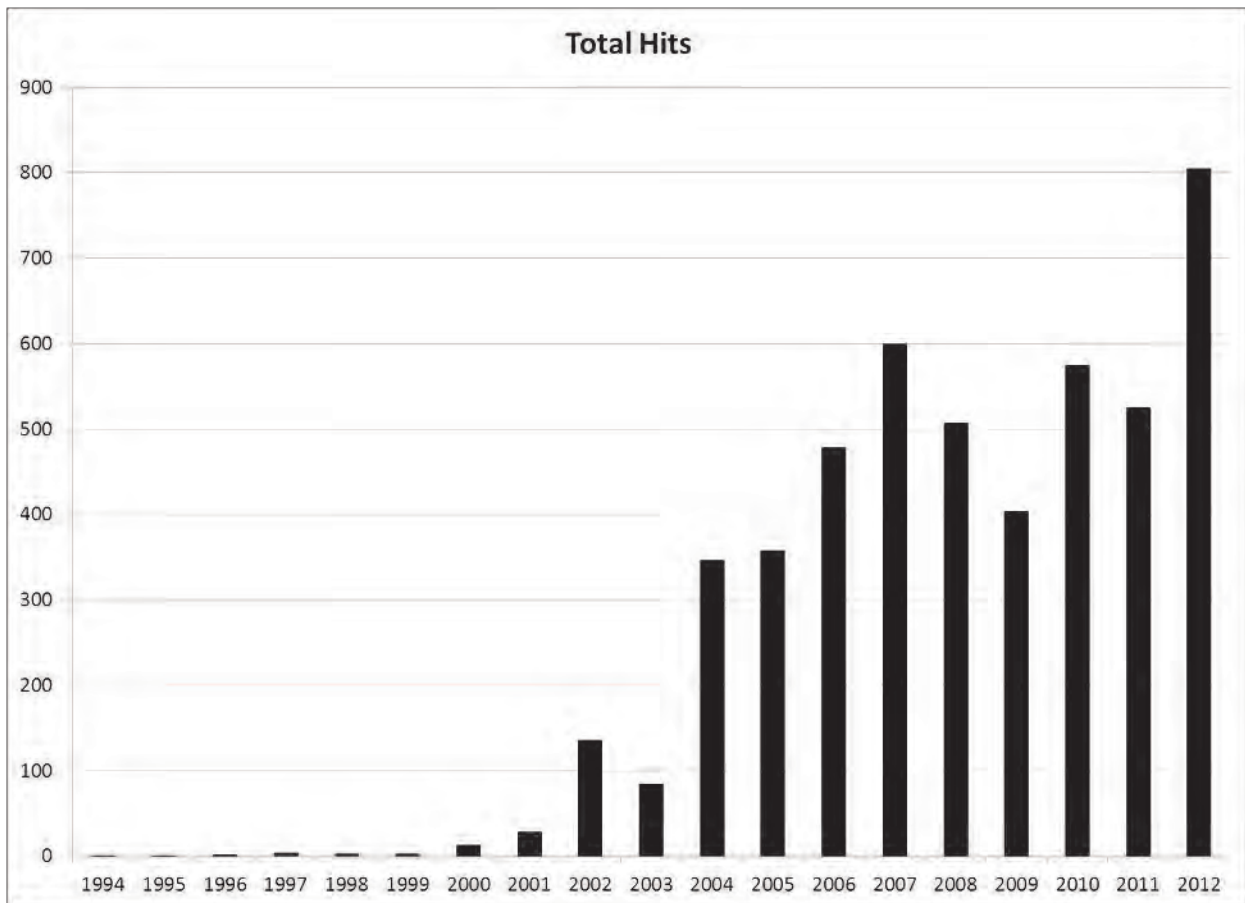


Figure 1. Oregon State Police CODIS hits, by year. A decline during 2003 reflects the temporary lay-off of 75% of laboratory staff.

Oregon State Police have over 160,000 convicted offender samples and over 8000 forensic samples in the Oregon DNA database. These are compared weekly to over 12 million samples in the National DNA database. The majority of offender DNA collections arrive from the state prison intake center. A significant number are also collected by parole or probation officers. Approximately one hit is made for every 36 offender DNA samples received.

Is CODIS effective? CODIS hits are the combined result of effective offender collections and casework evidence submissions. While person crimes are usually highlighted by the media, approximately 75% of cases solved by CODIS hits involve property crimes, for which there is a high repetition rate (Figure 2).

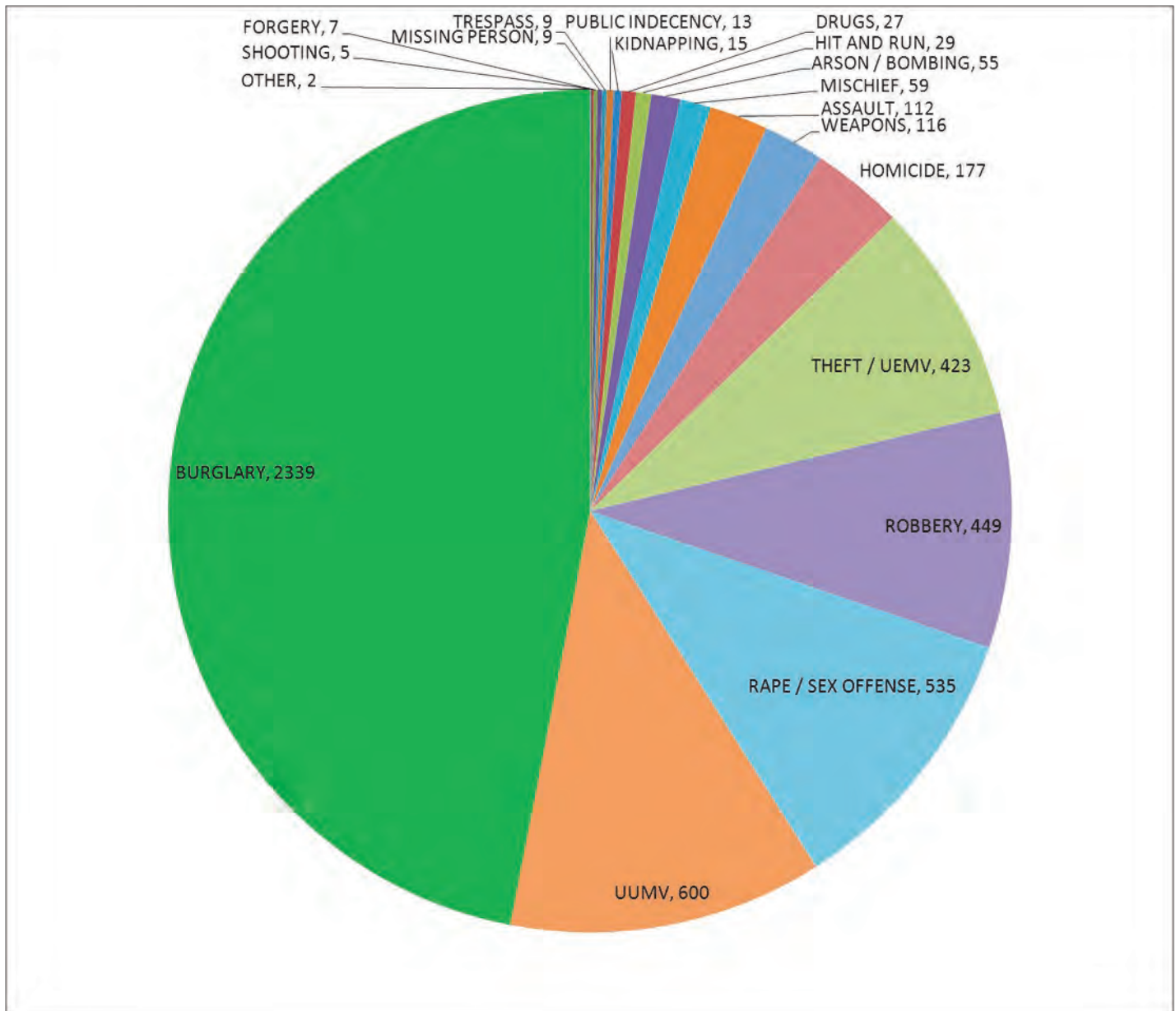


Fig 2. Crimes Solved by Oregon CODIS hits. Blood and oral evidence is commonly left behind at burglary scenes, yet some states do not routinely investigate burglary cases.

You're likely familiar with the term "gateway drug", but have you heard about "gateway crime"? Oregon offender DNA samples can be submitted for any felony conviction, and often solve crimes which are dissimilar to the original conviction/DNA submission. For example, a convicted rapist might subsequently commit a homicide crime, and drug offenders needing funds for their addiction often commit burglary crimes (Figure 3).

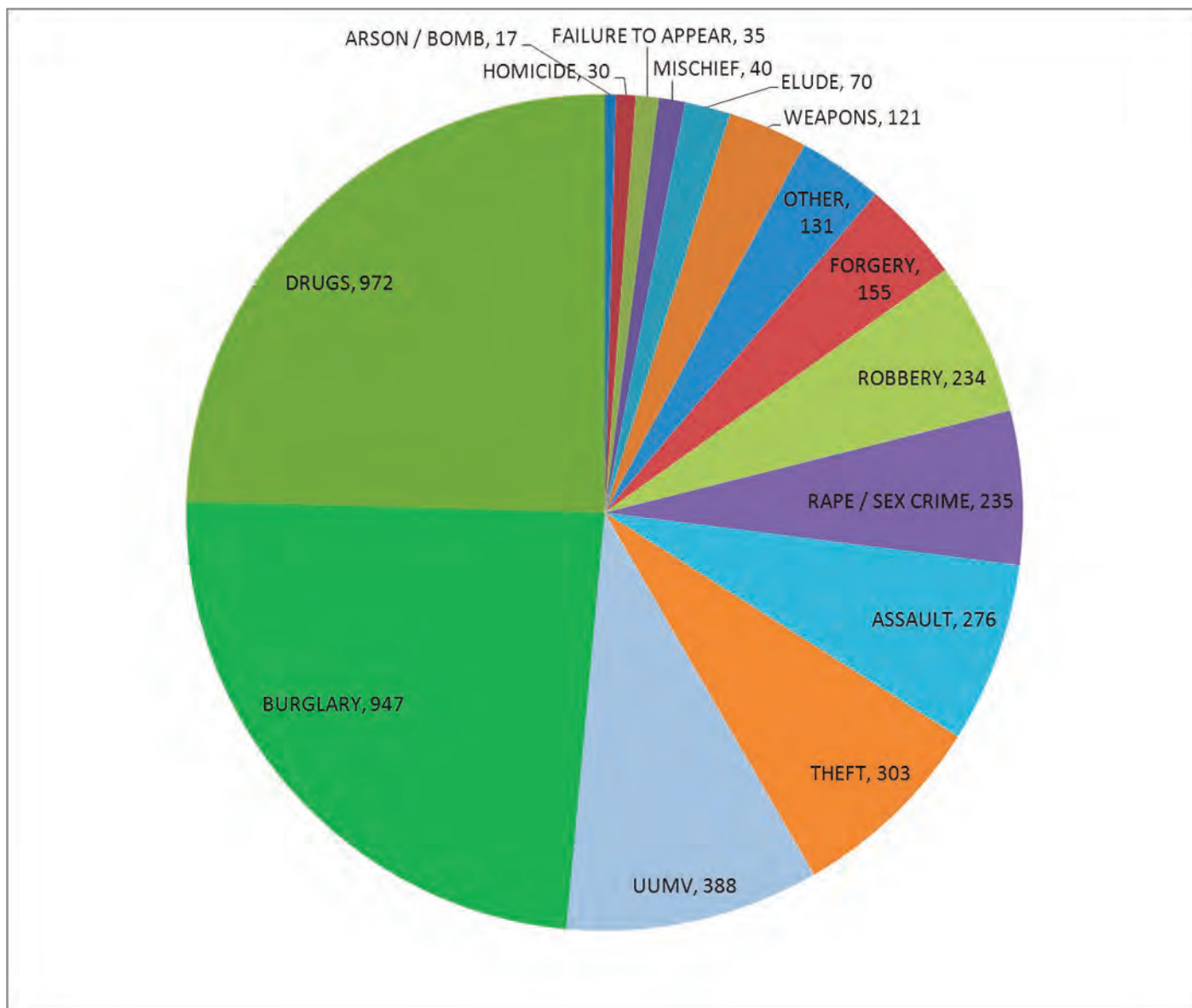


Fig. 3. Offender's Collection Crime prior to CODIS Hit. Almost half of submissions are from Burglary and Drug offenders, yet these gateway crimes can link to any type of investigation.

The Oregon 5K includes hits to cases in 35 of Oregon's 36 counties (Figure 4). Not unexpectedly, these are mainly in counties with higher populations, and along the I-5 corridor.

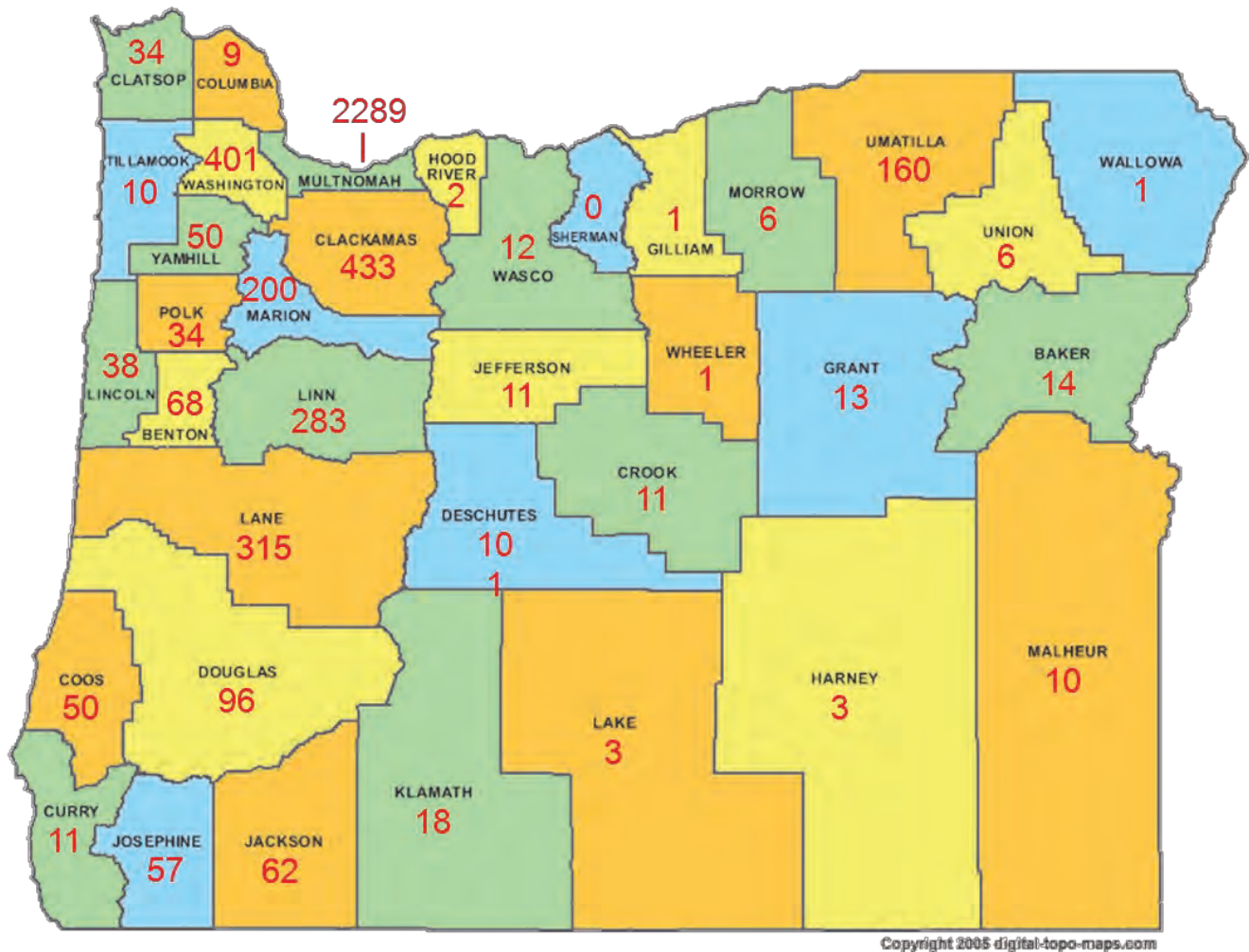


Fig 4. Number of hits in each Oregon county. Over 60% of hits come from just three counties in the Portland Metro area.

CODIS also allows the DNA database to assist in solving crimes in other states. The Oregon 5K includes over 700 interstate hits. Most commonly, hits are made to the states immediately North and South (Washington and California), but Oregon DNA matches have been made to 40 states across the country (Figure 5). A recent international hit also solved a 1970s homicide in Canada, thus emphasizing that crime knows no boundaries.

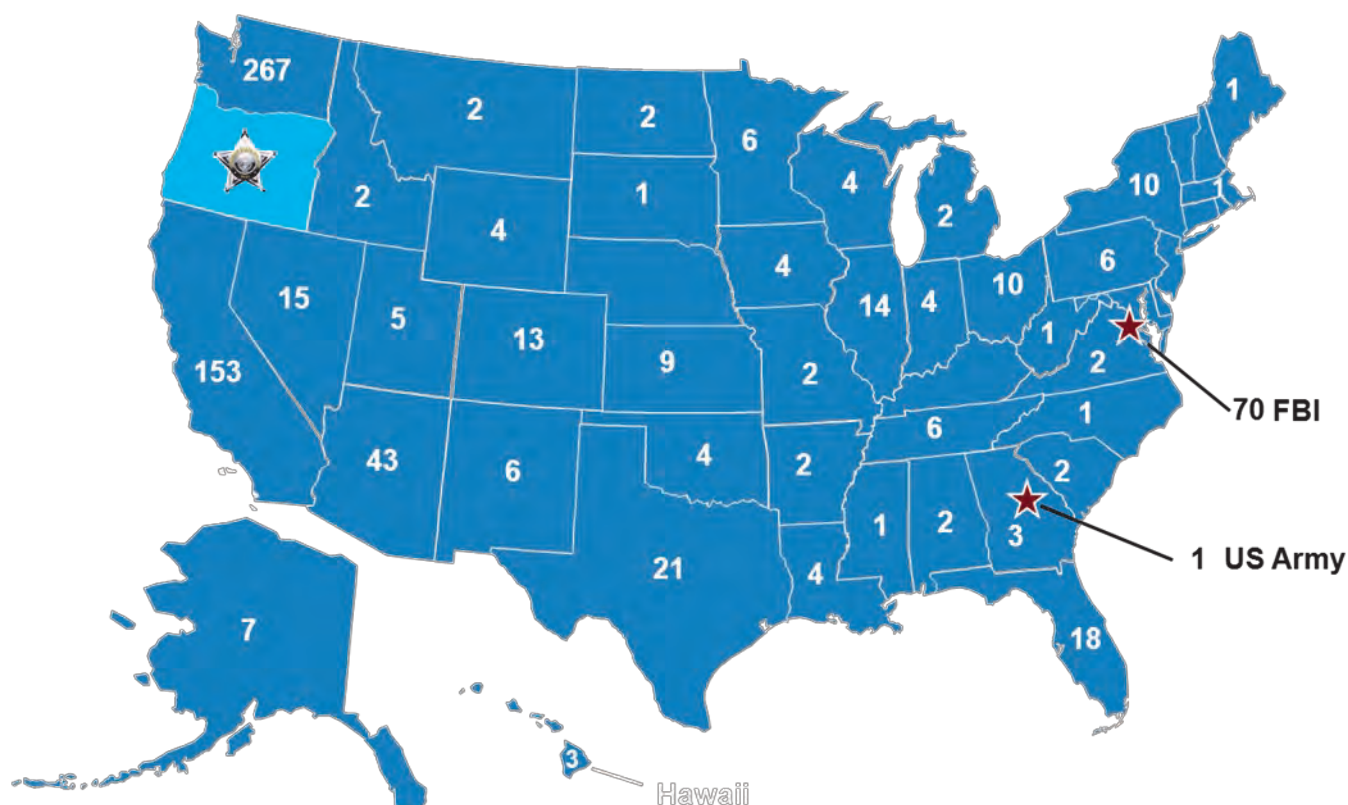


Fig 5. Number of Oregon hits with other states. Proximity and database size are major factors affecting the number of hits with other states.

Are there any CODIS limitations? Two primary limitations are funding and the law. Available resources have limited the program in years past. Oregon relied upon grant funding to outsource the processing of offender DNA samples, and some staff continue to be grant-funded. However, since 2012, the processing has been done in-house, with a turnaround time of approximately 43 days from sample intake to database entry.

The law limits CODIS in two ways. First, Oregon has a statute of limitations (SOL) which limits convictions for most crimes to only three years after the date of commission. Because of the timing of offender DNA collections, older cases are being matched to offender DNA profiles after four or five years. Consequently, these “SOL”-cases can’t be pursued by the agency. It can be disheartening to know that the victims and perpetrator will not receive justice. In 2013, over 5% of DNA matches were past the statute of limitations.

Second, Oregon's law does not allow DNA collection from arrestees. Over half the states in the US have implemented DNA collection from arrestees, and some states have seen a 50% increase in hits as a result. In addition, having the DNA sample earlier could reduce the number of "SOL"-cases by making a DNA match sooner.

What's next for CODIS? A high-throughput project was begun in 2013, allowing a streamlined approach to sample collection and processing of property-crime samples, which are a significant component of the Oregon 5K (Figure 6). Several law enforcement agencies have been trained to collect the DNA evidence onto specialized swabs, and can submit up to three swabs to the lab. With minimal handling and processing, DNA on the swabs is extracted and the DNA profiles generated much more quickly than through the normal submission chain. This can clear a case in 30 days instead of 120 days! In 2014, the Oregon State Police hope to expand this program throughout the state.



Fig 6. Annual Hits by Category of Crime Solved. Steep drops in property-crime hits were caused by loss of grant funds to process these cases.

Also on the horizon is the adoption of a “mega-plex” kit. The FBI is increasing the minimum core CODIS loci required for database entry. Currently, 13 chromosomal locations are required, but this will expand to 22 different chromosomal locations. The Oregon State Police will therefore transition to using a different DNA profiling kit with enhanced information. After that, we’re on our way to achieving 10K.

Daniel Peterson
Oregon State Police Portland Forensic Laboratory



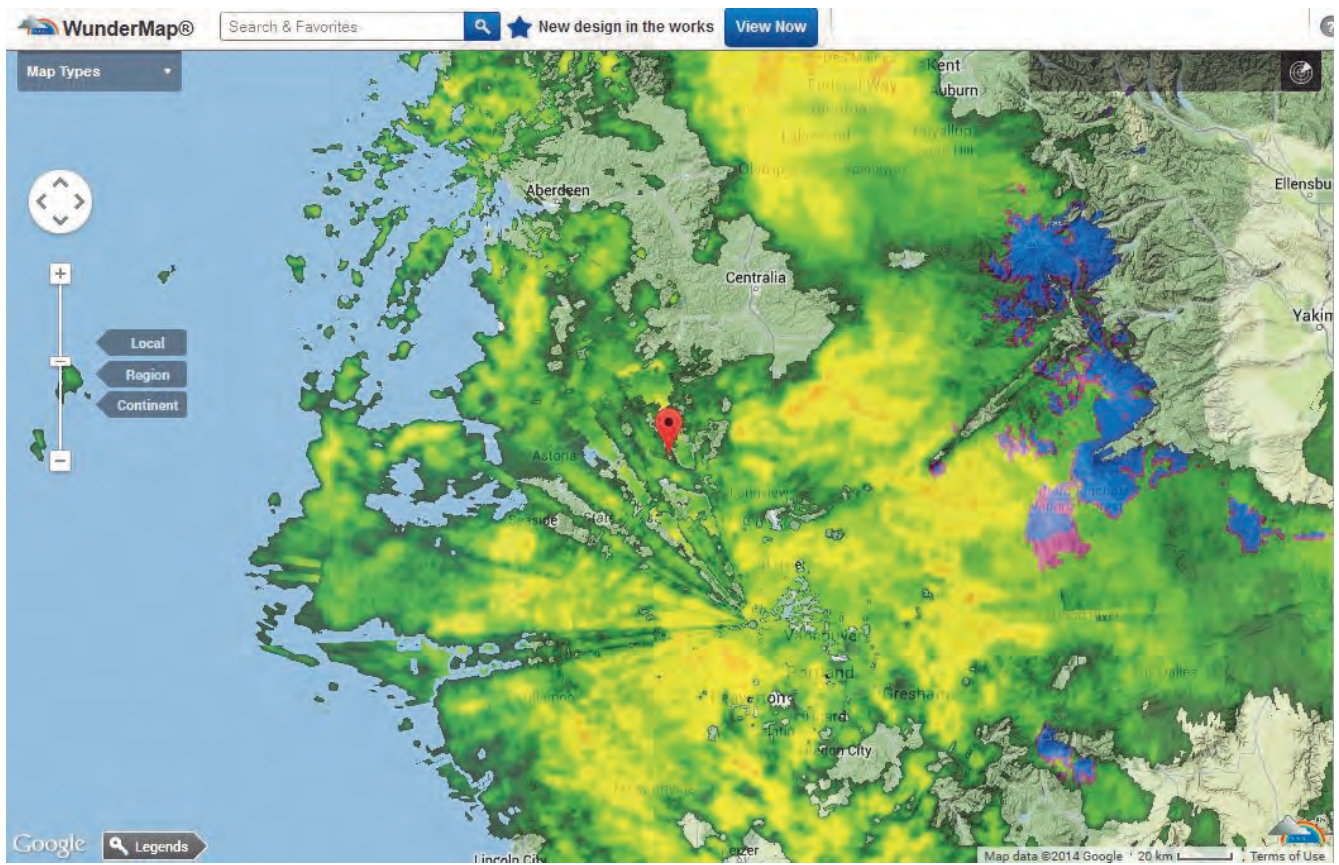
A SPRING FISHING TRIP TO REMEMBER!

Matt Noedel (Past NWAFS President), Rick Kemman (good friend), Dan Alessio (Past NWAFS President) and I (NWAFS Editor) went fishing for spring Chinook on the Columbia River this past March. Dan was the newest member to this excursion so we tried to make his first trip loaded with fond memories!

The first thing that we did was conjure up a rather large system of incoming rain!

The second thing that we did (unfortunately) was not catch any fish!

The third thing that we did was enjoy a nice hot dog on the river!



Dan pondering about what was in the hot dog he just ate!



Matt and Danny discussing the topic - electronic cigarettes!



Announcement!



Advanced Footwear Impression Examination Class

Instructors: William J. Bodziak & Lesley Hammer
Date & Location: November 3-7, 2014
 Fort Collins Police Department
 Fort Collins, Colorado
Future Second Class: Late Spring 2015
 Location and Date To Be Announced
Cost: \$850
Registration: Registration will be available January 2014.

Course Description:

This will be a 4½-day course involving advanced and specialized topics pertaining to the examination of footwear impression evidence. Focus of the course will be on the examination process; examination problems and conclusions; report preparation, contents and wording; and advanced casework challenges. Specific topics will include updates on aspects of footwear manufacturing; shoe grading and sizing as it relates to comparison with known shoes and the determination of the size of footwear from impressions; updates on techniques and materials regarding recovery of footwear evidence; SWGTREAD standards for terminology and for reporting results; court admissibility preparation; case presentations; research updates and other topics. This course is designed to be interactive and to include the sharing of knowledge among participants.

Pre-requisites and other information:

Because the level of instruction in this course will presume basic knowledge and experience in this field, it is strongly recommended those who apply have had some formalized training and a minimal amount of case experience. This class is not recommended for brand new examiners. An estimated 2 hours of preparation on the part of the participants will be requested prior to the course.

If you have any questions about this course or wish to obtain a registration form, please contact one of the instructors:

William Bodziak wbodziak@earthlink.net
 Lesley Hammer hammer.forensics@gmail.com

Advanced Footwear Impression Examination Class**REGISTRATION** (please print clearly)(Please scan and email this form to wbodziak@earthlink.net)

NAME: _____

AGENCY: _____

ADDRESS: _____

CITY _____ STATE _____ ZIP _____

TELEPHONE: (_____) _____

E-MAIL: _____ @ _____

☐ Check enclosed OR☐ Purchase order # _____☐ Please send an invoice in advance to _____Comments

CAPTION THIS!



The best caption submitted for this photo will win a
\$25 gift card of your choice!

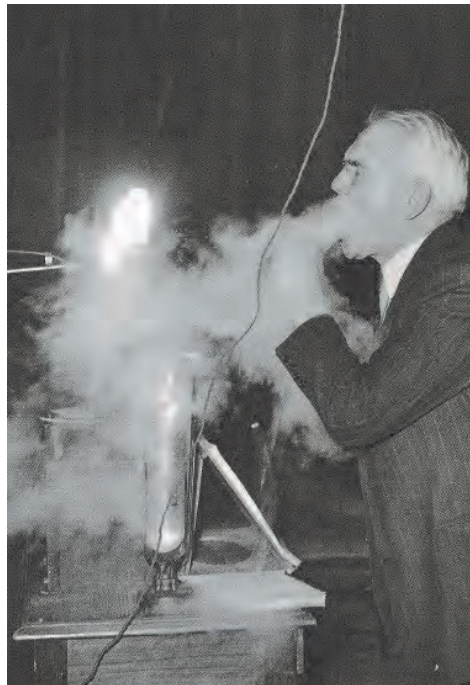
editor@nwafs.org

CAPTION THIS WINNER!

**Congratulations to our last
newsletter's winner:**

**Nici Vance
Oregon State Police**

**“Now that’s one SUPER BOWL!
Go Seahawks!”**



Runner up goes to:

**Daniel Peterson
Oregon State Police**

**“Early versions of electronic-cigarettes had problems with
second-hand smoke.”**

FREE REGISTRATION!

Got an interesting technical note, informative article
or research project?

Make a submission to the NWAFS newsletter, and you could win **FREE
REGISTRATION** to an upcoming NWAFS meeting!

The officers vote for the “Best Independent Newsletter Submission” once
per year and award a **FREE REGISTRATION** to the winner.



Help keep the NWAFS newsletter interesting and informative by
sending your submissions to:

Jeff Jagmin, NWAFS Editor
Jeff.Jagmin@wsp.wa.gov
2203 Airport Way South
Seattle, WA 98134
206.262.6109