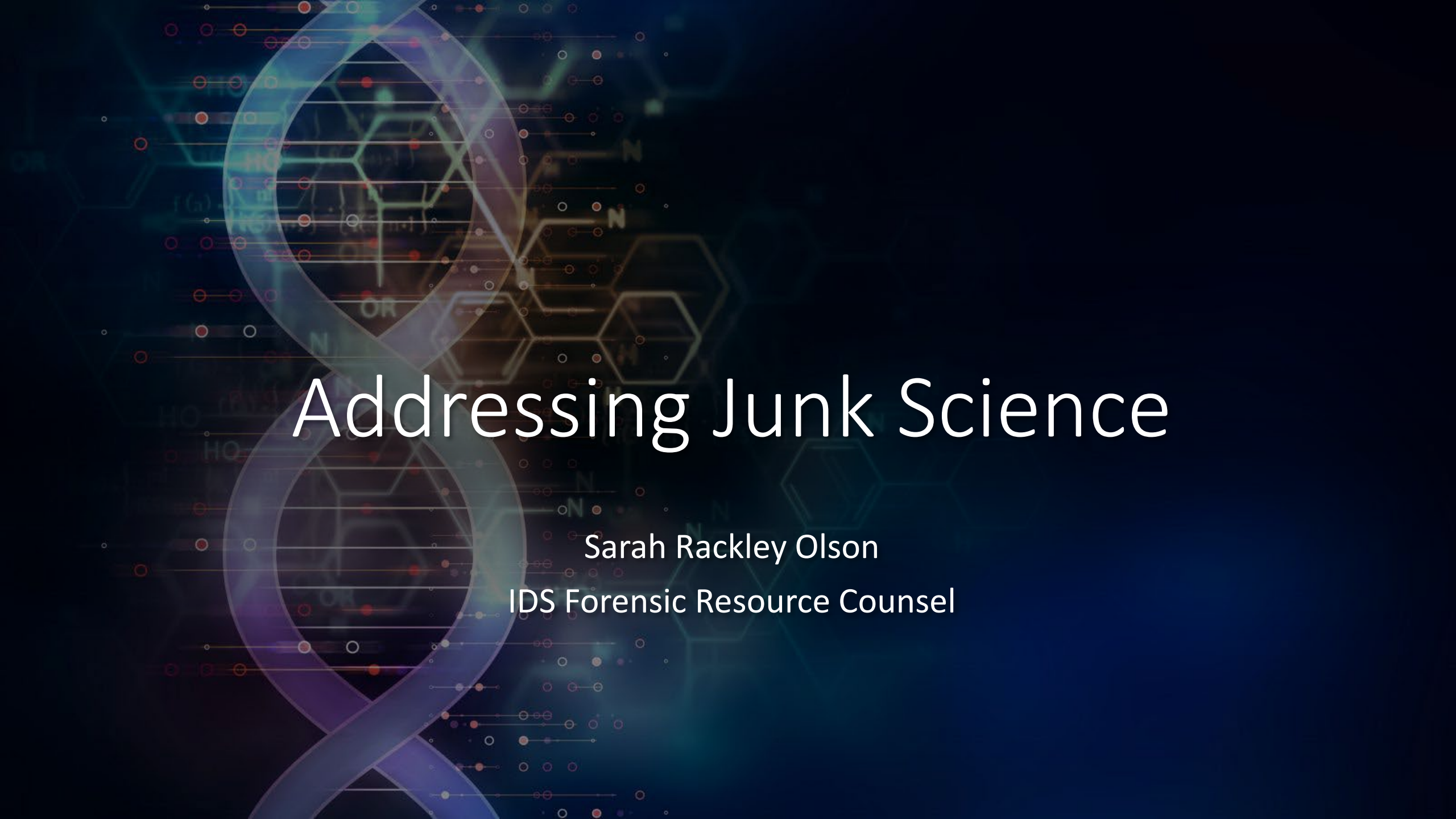




Addressing Junk Science

Sarah Rackley Olson
IDS Forensic Resource Counsel

scientificliteracyproject.org



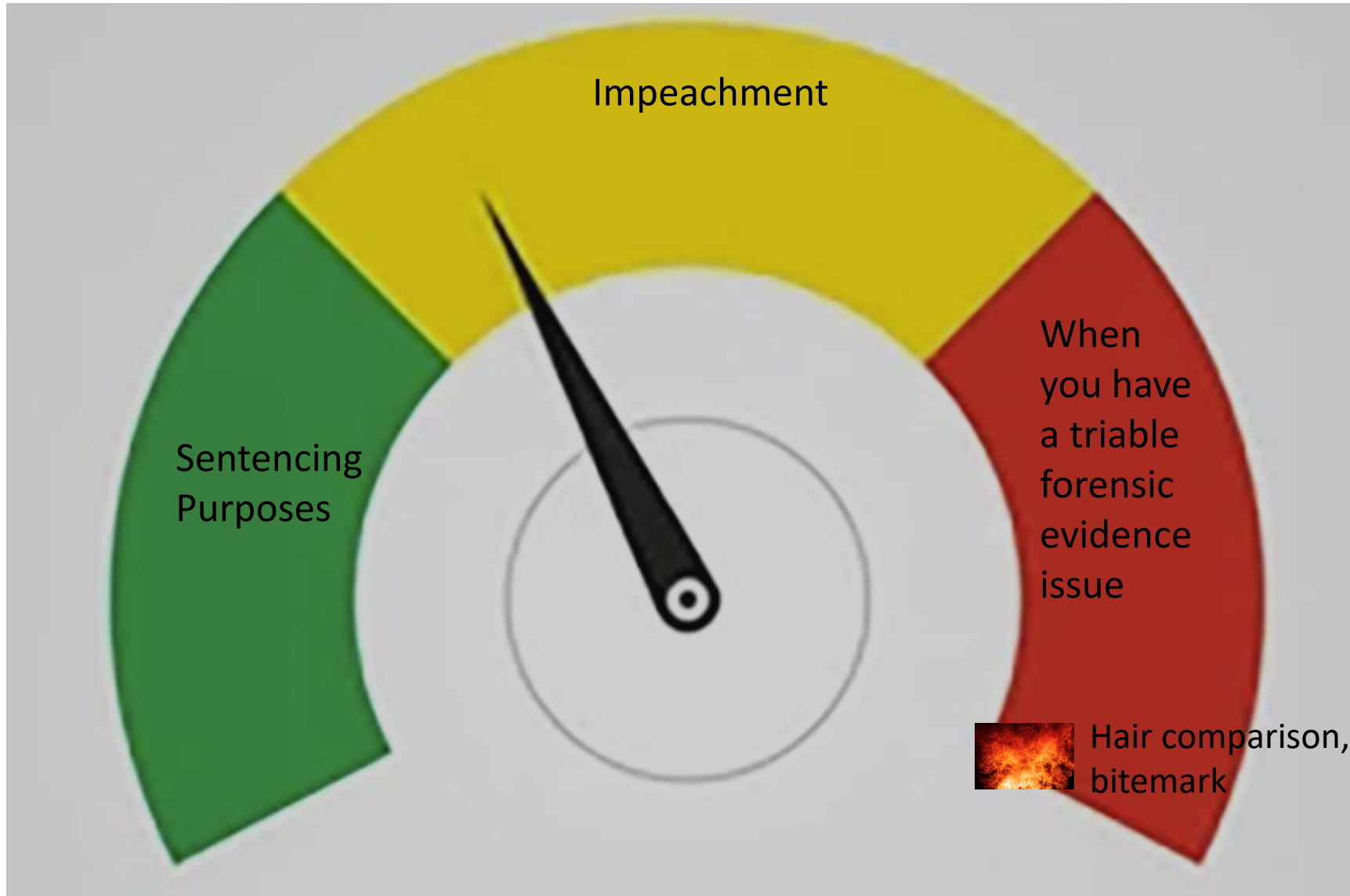
**SCIENTIFIC LITERACY
PROJECT**



**'INNOCENCE
PROJECT**

Sign up by emailing: Sarah.R.Olson@nccourts.org

When does forensic evidence come into play?



Mental Health Experts

- Database of experts – www.forensicsources.org
- Tues webinars – [UNM Department of Psychiatry Law and Mental Health Series](#)
- Brain Injury, particularly in intimate partner violence cases (UNC Criminalized Survivor, Detention, and Justice Clinical Prof. Deborah Weissman)

https://forensicresources.org/browse-all-experts/



Browse All Experts

This database includes **state and defense experts** searchable by name or area of expertise. The list was compiled based upon the experts' work in prior cases or requests to be added, and is not based on any assessment of whether an expert is qualified or is the appropriate expert for a specific case. If you are searching for an expert to retain you must do your own due diligence to evaluate the expert.

Search within Experts

Enter your search term



Sort By

Alphabetical

Date Added to Database

Sort By



Have you met?



Jan Tate, LCSW, MEd, CSOTP

Address

105 East Center Street
Suite B-7
Mebane, NC 27302

Phone: 917-773-8283

Fax: 919-551-8711

[Send Email](#) 

[Visit Website](#) 

Additional Info

Provides psychosexual evaluations
and child sexual exploitation material

[DOWNLOAD RESUME](#)

JAN TATE, LCSW, MEd, CSOTP

NC License # C012511
Psychotherapist and Forensic Evaluator
Tate Psychological Services
105 East Center Street Suite B-7
Mebane, NC 27302
(917)773-8283

EDUCATION:

- | | |
|-----------------|--|
| 08/2013-05/2016 | Widener University , Chester, Pennsylvania
Master of Social Work- Clinical Focus
Area of Concentration: Clinical, Forensic, Sex Therapy |
| 08/2013-05/2016 | Widener University , Chester, Pennsylvania
Master in Education in Human Sexuality
Area of Concentration: Non-normative Sexuality/Gender |
| 08/2004-05/2009 | UNC Chapel Hill , Chapel Hill, NC
Bachelor of Arts in Psychology
Minor in Gender and Sexuality Studies |

SUMMARY:

I am a clinical social worker, sexuality educator, and forensic evaluator working with sexuality and gender issues. I obtained a Master of Social Work with a focus on clinical practice in 2016, alongside with a Master of Education in Human Sexuality from Widener University. My training focused on sexuality and gender issues and the clinical treatment and assessment of these topics. My clinical approach is psychodynamic, culturally sensitive, and conducted through a social justice lens. I have provided services in outpatient, inpatient, residential, and partial hospitalization settings. My range of clinical experience includes individual, couples, groups, and families. My forensic training was completed at the Joseph J. Peters Institute, and I conduct

Our Team



SARAH Y. VINSON, MD
Licensed Psychiatric Physician |
Founder and Principal Consultant



**NICOLE D. JACKSON, DSW,
LCSW**
Licensed Clinical Social Worker |
Senior Associate Consultant



ALENA A. AGUILAR, LMSW
Licensed Master Social Worker |
Senior Associate Consultant



LE'ROY E. REESE, PHD
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**COURTNEY L.
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TIYA S. JOHNSON, MD
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**MICHELLE P. DURHAM,
MD, MPH, FAPA, DFAACAP**
Licensed Clinical Psychiatrist |
Associate Consultant



TIFFANY F. GARTRELL, MD
Licensed Clinical Psychiatrist |
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Law and Mental Health

UNM Dept of Psychiatry and Behavioral

138 videos 7,060 views Updated yesterday



Play all



Shuffle

Consultation with criminal justice stakeholders in New Mexico—as well as with New Mexico's Behavioral Health Services Division—have consistently revealed concerns regarding the quality of forensic mental health evaluations in both criminal and civil cases. This maps onto

1



SCHOOL OF
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BEHAVIORAL SCIENCES

1:01:11

Law and Mental Health: Transgender Criminology: Carceral Strategies for Managing Gender Diversity

UNM Dept of Psychiatry and Behavioral Sciences • 30 views • 1 day ago

2



SCHOOL OF
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PSYCHIATRY &
BEHAVIORAL SCIENCES

1:01:01

Law and Mental Health: Workplace Discrimination Evaluation: Race and the Legal System

UNM Dept of Psychiatry and Behavioral Sciences • 89 views • 2 weeks ago

3



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BEHAVIORAL SCIENCES

1:02:02

Law and Mental Health: Linguistic and cultural considerations when working forensically with Latinx

UNM Dept of Psychiatry and Behavioral Sciences • 86 views • 3 weeks ago

4



SCHOOL OF
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BEHAVIORAL SCIENCES

1:05:00

Law and Mental Health: Perils and Pitfalls for the Forensic Psychologist in Death Penalty Cases

UNM Dept of Psychiatry and Behavioral Sciences • 207 views • 1 month ago

5



SCHOOL OF
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PSYCHIATRY &
BEHAVIORAL SCIENCES

1:08:54

Law and Mental Health: A Framework in Conducting Parental Capacity Assessments

UNM Dept of Psychiatry and Behavioral Sciences • 167 views • 1 month ago

Council of State Governments Justice Center -

<https://csgjusticecenter.org/publications/mind-matters-building-a-justice-system-that-is-inclusive-and-responsive-to-brain-injury/>

Megan Davidson, PhD; Kate Reed, LPC

Mind Matters: Building a Justice System That Is Inclusive and Responsive to Brain Injury

Prevalence and Nature of Acquired Brain Injury in the Criminal Justice System

Existing research on the prevalence of brain injury among individuals encountering the criminal justice system varies with estimates ranging from as low as 41 percent to as high as 82 percent¹ depending upon who is included within the sample (e.g., individuals on probation, people who are arrested, jail or prison populations).

1



Training and
Education

2



Screening and
Identification

3



Compensatory
Strategies and
Modifications

4



Referrals and
Resource
Coordination

5



Strategies
for Advancing
Recommendations

Deficiencies common to nearly every case

- Analyst exposure to biasing information on submission form
- Analyst is given the “answer” by law enforcement
- Not enough time spent on analysis and review
- Insufficient documentation of screening tests
- Review by second examiner is not complete or blind
- Analysts are not sufficiently proficiency tested
- Are analysts drug tested?

PART A**REQUEST FOR EXAMINATION OF PHYSICAL EVIDENCE**

Requesting Officer:

County of
Incident:

Lab #

Requesting Agency:

ORI #:

SBI File #

PLEASE PLACE A CHECK MARK (✓) BESIDE THE PREFERRED ADDRESS☐ Agency P. O. Box, City and Zip:

Agency File #

☐ Agency Street Address, City and Zip:

Type of Case:

CAA (SBI Case Agent
Assigned):

DIC (SBI District in Charge):

Date of Incident:

Investigating Officer Name and Best Contact Number

Court File # if known :

VICTIM(S)***Race/Sex*****DOB****SUSPECT(S)*****Race/Sex*****DOB****ID #**

*Has any evidence in this case been submitted to the laboratory previously?**If yes, to which section(s)?*

Lab Item #	Agency Item #	Type Container/Description of Evidence	Examine For	Exact Location Found (Use names for body fluid/DNA Evidence)

Drugs

- Was the right item tested?
- Was the right amount tested?
 - Hypergeometric sampling
 - Clan lab pills
- Was the right test used? (Visual inspection vs FTIR vs GCMS)
- To assess, you need to be able to read the lab report

FAQs in drug cases

Are drugs weighed in their packaging or not?

- Net weight = weight of item without packaging
- Gross weight = weight of item with packaging
- Lab will report net weight unless it is not possible to separate item from packaging. See [Technical Procedure for Balances-Drug Chemistry](#).

What does 99.7% level of confidence mean in a drug case?

- Lab report gives uncertainty budget and level of confidence for weight. This refers only to confidence in weight, not in identification of the drug.

How much drug should be consumed by testing?

- Note weight received and weight returned and if the amount of sample consumed was appropriate (approx. 0.01 g)

Analysis of the above item(s) was conducted using two or more of the following methods: color test, microcrystalline test, IR, GC, MS.

Measurement uncertainty of reported net weights is at a 99.7% level of confidence.

FILE A CONSUMER COMPLAINT

SEARCH NCDOJ

REPORT A ROBOCALL



Attorney General
Josh Stein

Robocall Hotline:(844)-8-NO-ROBO
All Other Complaints:(877)-5-NO-SCAM
Outside NC:919-716-6000

ABOUT
DOJ

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TO...

HOW WE
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LAW ENFORCEMENT TRAINING +
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NEWSROOM

SEXUAL ASSAULT KIT
TRACKING

CONTACT

- Protecting Consumers
- Internet Safety
- Identity Theft
- Health Fraud

- Responding to Crime
- Opioid Epidemic
- Public Protection
- Outreach

- Protecting Children
- Protecting Seniors
- Open Government
- Our Environment

- [State Crime Lab](#)
- Law Enforcement Training
- Legal Opinions
- Le

The North Carolina State Crime Laboratory and forensic laboratories across the nation are now subject to the IS accreditation standards. These international standards provide a global basis for laboratory accreditation in mar technical requirements. We welcome public comment on laboratory protocols. To share your comments, please

[Crime Laboratory.](#)

<https://ncdoj.gov/crime-lab/>



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CCBI Lab Procedures

NC OCME Toxicology Lab

Pitt Co. Sheriff's Forensic Services

Sec. of State Digital Forensic Lab

Wilmington Police Dept Crime Lab

Private and Out-of-State Labs

community understand
ter outcomes for clients

Forensics in the News

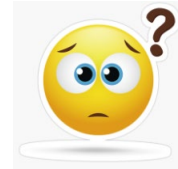
<https://forensicsresources.org/crime-labs/> statement during a lineup test increases

Forensics Experts

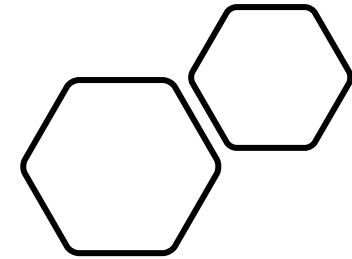
Check out our online database of experts, which includes state and

Sampling Plans

- If the entire item of evidence was not tested and a sampling plan was used to determine what portion to test, the lab report and case worksheets will say that a sampling plan was used
- There are 3 types of sampling plans:
 - Administrative – test one item (for pills) ❌
 - Threshold – test up to a threshold weight ✅
 - Hypergeometric – test a statistically-determined number of items and make an inference about the rest. The individual items must be **IDENTICAL**



10-11	8
12-13	9
14-15	10
16-17	11
18-20	12
21-23	13
24-26	14
27-30	15
31-34	16
35-39	17
40-45	18
46-52	19
53-61	20
62-73	21
74-88	22
89-108	23
109-138	24
139-184	25
185-270	26
271-474	27
475-1619	28
1620-10000	29



Administrative procedure for sampling

4.10.10 Reporting Identified Substances

4.10.10.1 To use the Hypergeometric statement in 4.10.9.1.4, the results of analysis to be reported for each sample shall be identical. If non-identical results are to be reported, the Forensic Scientist shall stop following the Hypergeometric Sampling Plan and shall follow the Administrative or Threshold Sample Selection, as applicable.

Comments:

N	Item #	Weight Rec'd (g)	Weight Ret'd(g)	$U_{\text{final}} = \sqrt{N} \times U_{\text{balance}}$
1	4a	0.0417	0.0386	Where:
2	4b	0.0365	0.0342	U_{final} = Final uncertainty for the measurement process
3	4c	0.0462	0.0434	U_{balance} = Total Expanded Uncertainty for the balance
4	4d	0.0433	0.0397	Coverage Factor (k)=3 for a 99.7% confidence interval
5	4e	0.0370	0.0332	N = number of weighings
6	4f	0.0417	0.0378	Net weight of material received(g) = 0.9902
7	4g	0.0477	0.0434	Net weight of material returned(g) = 0.9186
8	4h	0.0450	0.0414	N = 25
9	4i	0.0433	0.0405	U_{balance} = 0.0008 gram(s)
10	4j	0.0423	0.0391	U_{final} = 0.0040 gram(s)
11	4k	0.0414	0.0370	
12	4l	0.0441	0.0407	
13	4m	0.0410	0.0389	
14	4n	0.0583	0.0555	
15	4o	0.0373	0.0348	
16	4p	0.0367	0.0335	
17	4q	0.0425	0.0391	
18	4r	0.0371	0.0347	
19	4s	0.0362	0.0336	
20	4t	0.0290	0.0274	
21	4u	0.0287	0.0266	
22	4v	0.0355	0.0340	
23	4w	0.0322	0.0298	
24	4x	0.0329	0.0307	
25	4y	0.0326	0.0310	

Color Test

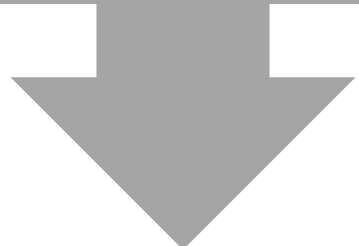
Marquis

4a,4f,4i,4j,4l,4n,4p,4q,4r,4t,4u,4v,4w -
Purple

4b,4c,4d,4e,4g,4h,4k,4m,4o,4s,4x,4y -
Purple, slight orange

Look for
comments from
reviewer and
communication
with law
enforcement

Dialogue between analyst and reviewer
may indicate disagreement between
analysts.



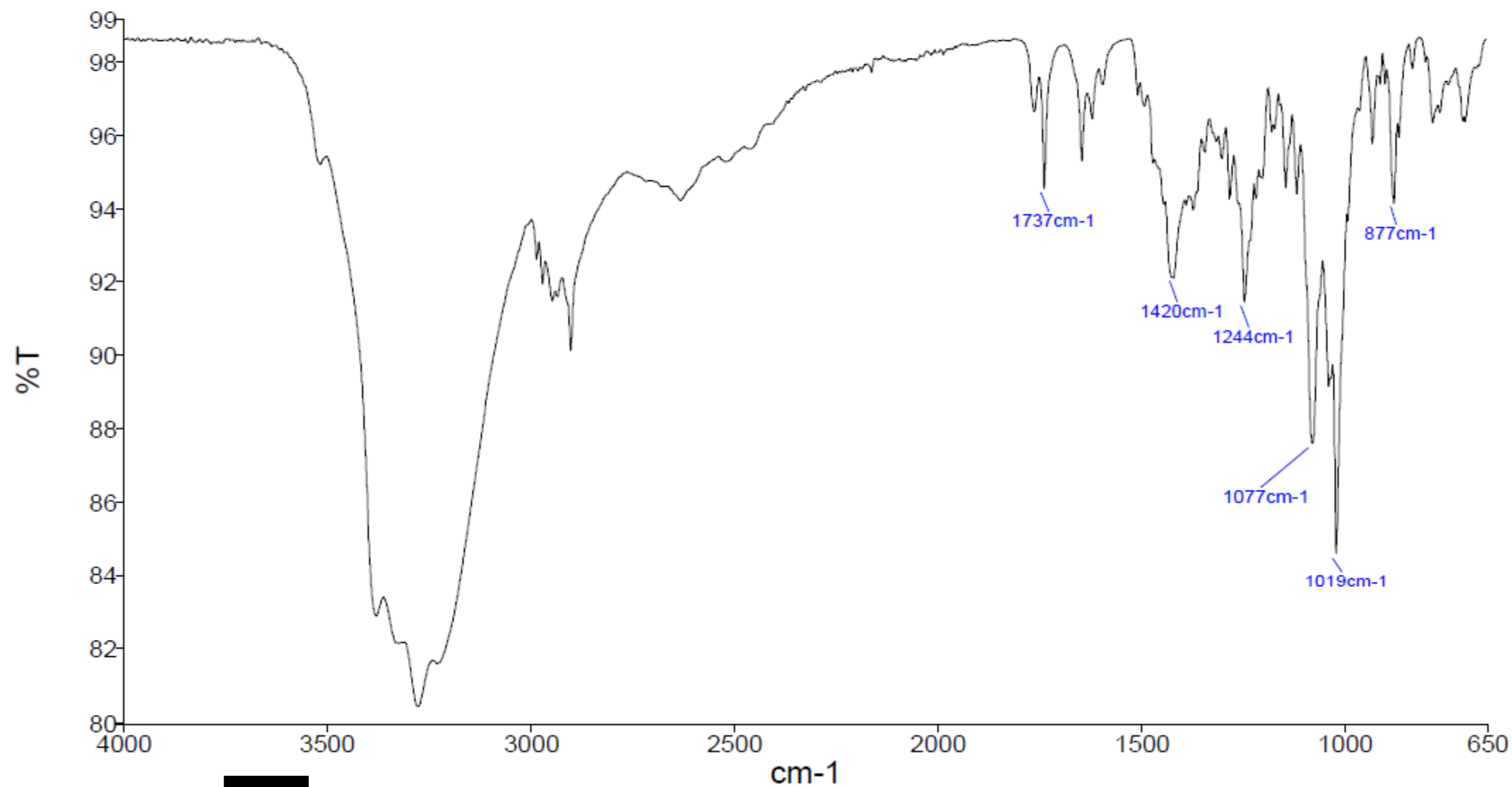
Consider – is the disagreement
substantial? Does it call into question the
work of the analyst or the methodology
used? Should a 702 challenge be made?

Visual ID or FTIR or GCMS?

- GCMS is more appropriate test for mixed substances or structurally similar substances.
- Consider 702 challenge to use of FTIR in those cases
- Get expert assistance if an item in your case was tested with different methods and yielded different results

Analyst
Date

FTIR 6 SN 77518
Tuesday, February 09, 2021 4:29 PM



R202 [REDACTED] Item 4a Straight

Who's coming to court?

- *Smith v. Arizona* requires all analysts involved in testing to be present in court. Look to see if batch processing and multiple analysts were involved
- MEET WITH THE ANALYST PRE-TRIAL!!

DNA

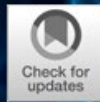


Know the limits of the STRMix software

- Likelihood ratios might not answer the right question
 - Is this data explained better if it is a mixture of the defendant and 2 unknown, unrelated individuals or if it is a mixture of 3 unknown unrelated individuals?
- Low level samples are hard to interpret!
- >4 person mixtures cannot be interpreted by NCSCCL
- Number of contributors is hard!! (is determined by the analyst)
- Related individuals problem can result in false inclusions

Transfer, persistence, prevalence, and recovery (TPPR)

- Lab analysts testify about possibility or probability of direct or indirect transfer without validated methods, education, evidence of competency, or quality assurance systems in the lab
- The issue is often raised on the stand (not in lab report). This requires the analyst to recall literature on the spot and lacks any technical review.
- Activity level doesn't have the same level of reliability as DNA comparison



NISTIR 8503

May 2024

Forensic DNA Interpretation and Human Factors: Improving Practice Through a Systems Approach

Report of the Expert Working Group
on Human Factors in Forensic DNA
Interpretation

This publication is available free of charge from: <https://doi.org/10.6028/NIST.IR.8503>



HUMAN FACTORS
in Forensic DNA Interpretation

NIST

NATIONAL INSTITUTE OF
STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

NIJ | NATIONAL
INSTITUTE OF
JUSTICE
ADVANCING JUSTICE THROUGH SCIENCE

<https://www.nist.gov/publications/forensic-dna-interpretation-and-human-factors-improving-practice-through-systems>



Recommendation 6.2: When explaining the nature of DNA analysis during testimony, the DNA expert should address common misconceptions and state the limitations of the analysis. At a minimum, the DNA expert should address the following main points:

- **The DNA results are only part of the overall case.**
- **Errors can occur in any human process, including DNA analysis.**
- **The evaluation of the DNA comparison cannot conclusively identify an individual as the source of the DNA.**
- **DNA analysts cannot provide any information on how or when DNA was deposited in a particular case, based on a report considering only the source of the DNA.**



Recommendation 7.2: The evaluation of DNA results given “how” and “when” questions is distinct from the evaluation of DNA results given “who” questions. In order to develop policies and practices on how DNA analysts should respond appropriately to questions about how and when DNA was deposited in a particular case, forensic science service providers should consult professional guidance documents and experts who understand issues related to transfer and persistence. These policies and practices should require DNA analysts to be appropriately trained to respond to such questions.*



Recommendation 7.1: DNA analysts should not opine about the possibility or probability of direct or indirect transfer having occurred in a case.*

Recommendation 4.2: To avoid conveying an unsupported level of precision, forensic science service providers should express likelihood ratios as an order of magnitude or to one significant figure.

 H1 was 100,243 times more likely than H2

 H1 is 100,000 times more likely than H2

Recommendation 4.3: To avoid presenting likelihood ratios that are larger than can be supported by currently available research and to assist in the comprehension of analyses that result in very large likelihood ratios (or very small Random Match Probabilities) with respect to unrelated individuals, forensic science service providers should implement a reporting cap of 1 billion (or 1 in 1 billion), or an alternative value that can be justified by research.*

Digital Evidence

Overbroad searches with boilerplate language in nearly every case

- Reach out to the NACDL Fourth Amendment Center
- Gives you an issue to litigate pre-trial



Digital evidence is not a DIY project!

Fourth Amendment Center



NACDL
FOURTH
AMENDMENT
CENTER

NACDL's Fourth Amendment Center offers direct assistance to defense lawyers handling cases involving new surveillance tools, technologies and tactics that infringe on the constitutional rights of people in America. The Center is available to help members of the defense bar in bringing new Fourth Amendment challenges.

To request assistance or additional information, contact **4AC@nacdl.org**.

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Digital Evidence

Overbroad searches with boilerplate language in nearly every case

- Reach out to the NACDL Fourth Amendment Center



Digital evidence is not a DIY project!

‘A battle of experts’: Karen Read case spotlights murky realities of digital forensics

By [Sean Cotter](#) Globe Staff, Updated August 12, 2024, 8:49 a.m.



Of interest is one search McCabe made asking “Hos long to die in cold?”

The defense claims McCabe made the search at 2:27 a.m. on Jan. 29, long before she was informed O’Keefe was missing. McCabe has said she made the search hours later as the request of Read after they found O’Keefe’s body.

Hyde’ said McCabe was looking up the “Hockomock Sports” website at 2:27 a.m. and then Googled “Hos long to die in cold” at 6:23 a.m. In her testimony, she said the defense drew a false conclusion that a search about dying in the cold was deleted.

Why do I need to understand the lab work?



Be able to identify triable issues



Help non-scientist jurors and judge understand where there are deficiencies in the analysis



Incorporate the science into the theme of your case



Start talking to jurors about science starting with voir dire



It's your ethical obligation to provide an effective defense for your client!

2024 IDS Forensic Science Education Series

January 25, 2024 // by Sarah Olson // [Leave a Comment](#)

IDS and the Mecklenburg Public Defender's Office provide regular continuing education to dozens of NC criminal defense and parent attorneys, investigators, and mitigation specialists who attend the IDS Forensic Science Education Series. In 2024, we will offer monthly 90-minute webinars on various forensic disciplines and preparations for Daubert/702 challenges. These webinars will take place typically at **12:30 pm on the first Thursday of each month.**

Feb. 1, 2024: Trends in Psychological Assessment – Dr. Ginger Calloway

Mar. 7, 2024: Evaluating Capacity to Proceed – Dr. Sherif Soliman and Jason St. Aubin

Apr. 4, 2024: Barriers to accessing mental health care and their impacts on our clients – Dr. Courtney McMickens

May 2, 2024: Stimulants and the Brain: What Attorneys Need to Know – Dr. Korin Leffler

June 6, 2024: Toxicology Testing Methods – Dr. Rohan Parekh

June 27, 2024: What Attorneys Need to Know about Intimate Partner/Domestic Violence – Dr. Tori Reynolds and Barbara Lagemann, JD

July 4, 2024: Holiday – no webinar

July 18, 2024, 3 pm: *Smith v. Arizona* – What does it mean for NC attorneys encountering substitute analysts? Phil Dixon, JD and David Andrews, JD

July 25, 2024: Perpetuating the Presumption of Guilt: Implicit Racial Bias in Forensic Testimony – Janis Puracal, JD

Aug. 1, 2024: Human Factors and Cognitive Bias in Forensic Science – What Does the Research Say? Adele Quigley-McBride, PhD, LLB

Sept. 5, 2024: Challenging the Foundational Validity of a Forensic Method Using a Statistician as an Expert – Jordan Duhe Willetts, JD and Dr. Melinda Thielbar

Sept. 19, 2024: Forensic Science Standards and Their Use in Court: Dana Delger, JD

Oct. 3, 2024: TBD

<https://forensicrosources.org/2024/2024-ids-forensic-science-education-series/>