

Street Drugs in North Carolina

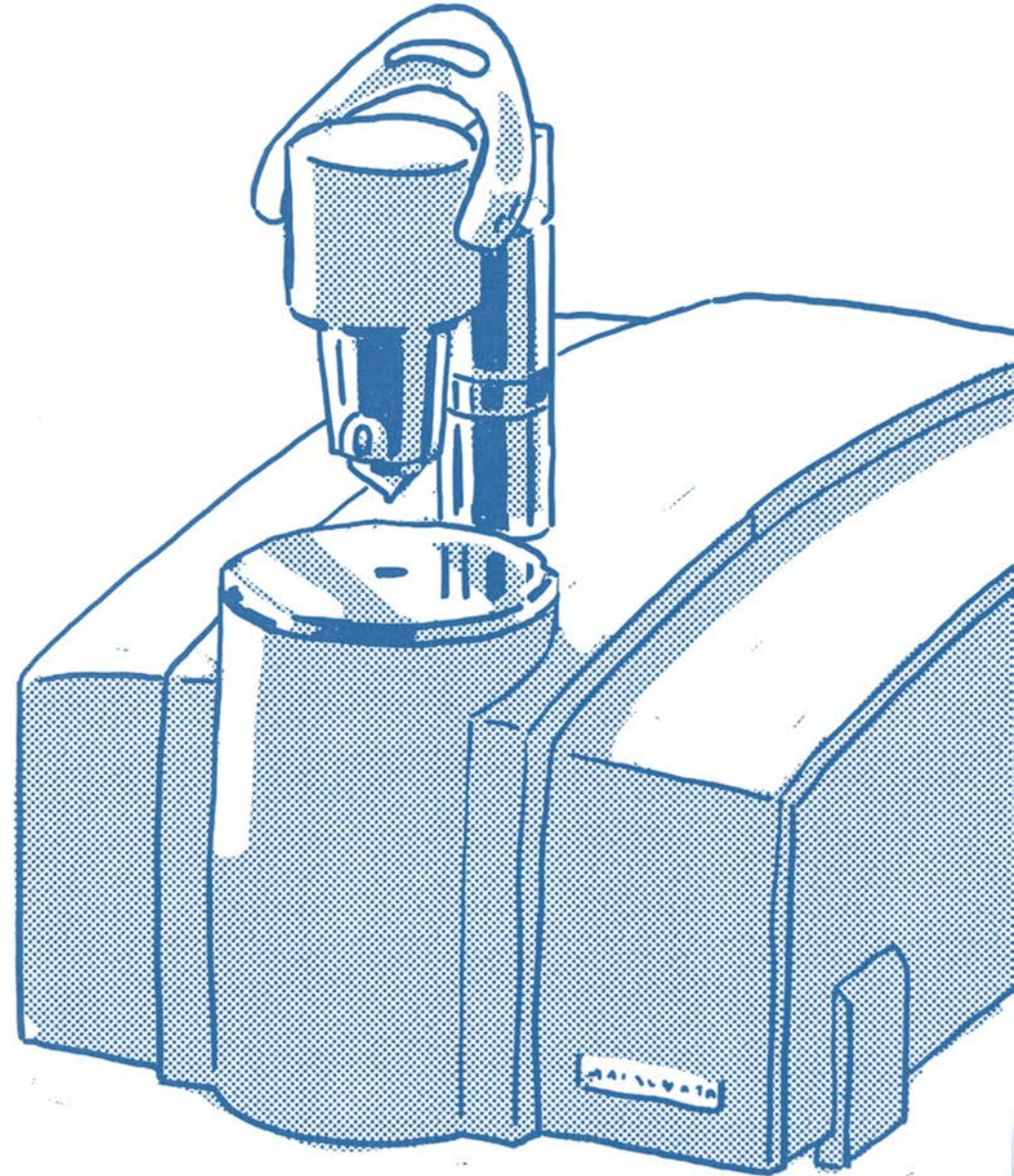
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Chapel Hill, NC, USA

@nabarund

22 January 2024 • Asheboro



Funders

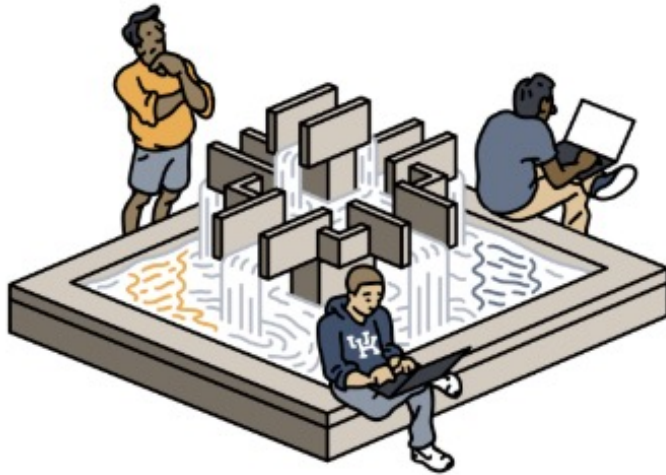
Views in this presentation do not necessarily represent the views of funders or partners.

- **North Carolina General Assembly** via the [NC Collaboratory](#), using Opioid Settlement Funds (2023-25, operations)
- [US Food and Drug Administration](#) (2023-2025), single study on overdose and naloxone utilization.
- [Vital Strategies](#), operations and outreach (2023-25)
- [Injury and Violence Prevention Branch](#) of the NC Department of Health and Human Services, via funding from the Centers for Disease Control and Prevention (2023, data visualizations)
- [Foundation for Opioid Response Efforts](#) (2022-23, startup)
- The GCMS instrument was funded through a NIH grant to the Department of Chemistry.

Opioid Data Lab



Theory



Practice



Lived Experience



Foundational Studies

Biostatistics
Epidemiology methods
Psychology of communication
Pharmacology

Applied Research

Pharmacy
Medicine
Public health surveillance
Forensic toxicology

Science in Service

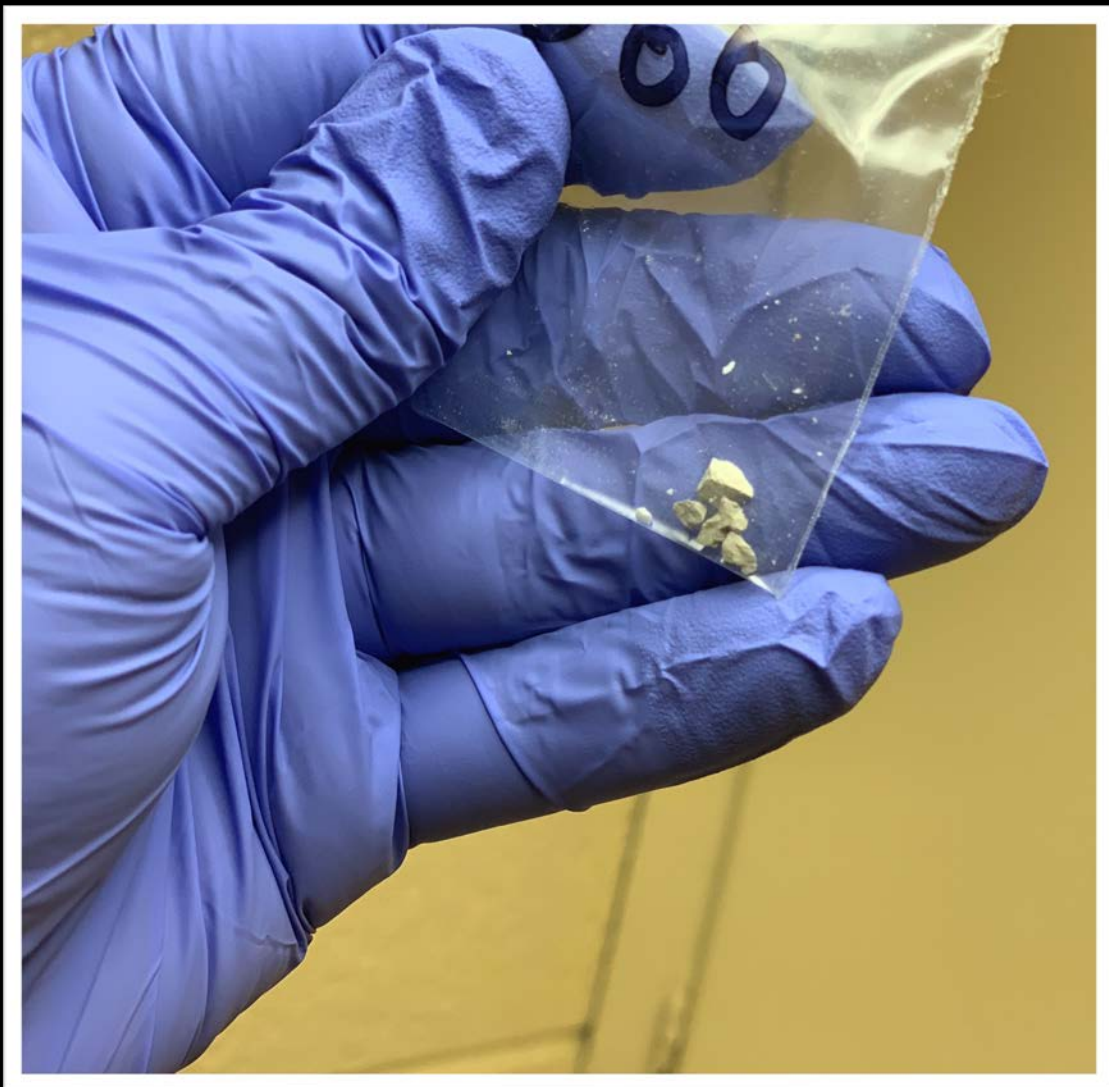
Drug checking
Sociology (qualitative)
Evidence-making interventions
History of asylums

Our Approach is Different

Science

in

Service



Street drugs change constantly.



4 Characteristics of Current Drug Supply

1. Polysubstance mixtures
2. Fluctuating potency
3. Adulterants and contaminants
4. (Regrettable) Innovation

What is “heroin” anymore?

Heroin
Raleigh, NC

October 11, 2021

- Xylazine
- Heroin
- Fentanyl
- Caffeine
- 4-ANPP
- Lidocaine
- Quinine
- Flurofentanyl
- 6-MAM
- Acetaminophen

Heroin
High Point, NC

September 11, 2021

- Heroin
- 6-MAM
- Fentanyl
- ANPP
- Dimethylsulfone
- Tramadol
- Cocaine

Heroin
High Point, NC

September 17, 2021

- Fentanyl
- ANPP

Fake blue Roxi 30
Myrtle Beach, SC

September 8, 2021

- Fentanyl
- 4-ANPP

Polysubstance exposure is common,
even if unknown to the person using it.



NEWS

Mini-bottles of Fireball Cinnamon don't actually contain whisky and it's led to a lawsuit

Surprise! Those mini-bottles of Fireball Cinnamon at gas stations don't actually have any whisky in them.



A mini bottle of Fireball Cinnamon which does not contain any whisky.

TODAY illustration / Fireball



Jan. 24, 2023, 5:58 PM EST

By Joseph Lamour

A class-action lawsuit has been filed in Cook County, Illinois against the makers of Fireball Cinnamon over



Lead and Cadmium Could Be in Your Dark Chocolate

Consumer Reports found dangerous heavy metals in chocolate from Hershey's, Theo, Trader Joe's, and other popular brands. Here are the ones that had the most, and some that are safer.



Photo Illustration: Melissa Paterno Plonchak/Consumer Reports, Getty Images

December 15, 2022

By Kevin Loria

Data visualizations by Andy Bergmann

High in Both Lead & Cadmium



Theo
Organic Pure Dark
70% Cocoa

LEAD
120%

CADMIUM
142%



Trader Joe's
The Dark Chocolate
Lover's Chocolate
85% Cacao

LEAD
127%

CADMIUM
229%



Theo
Organic Extra Dark
Pure Dark
Chocolate
85% Cocoa

LEAD
140%

CADMIUM
189%



Lily's
Extremely Dark
Chocolate
85% Cocoa

LEAD
143%

CADMIUM
101%



Green & Black's
Organic Dark
Chocolate
70% Cacao

LEAD
143%

CADMIUM
181%

300731

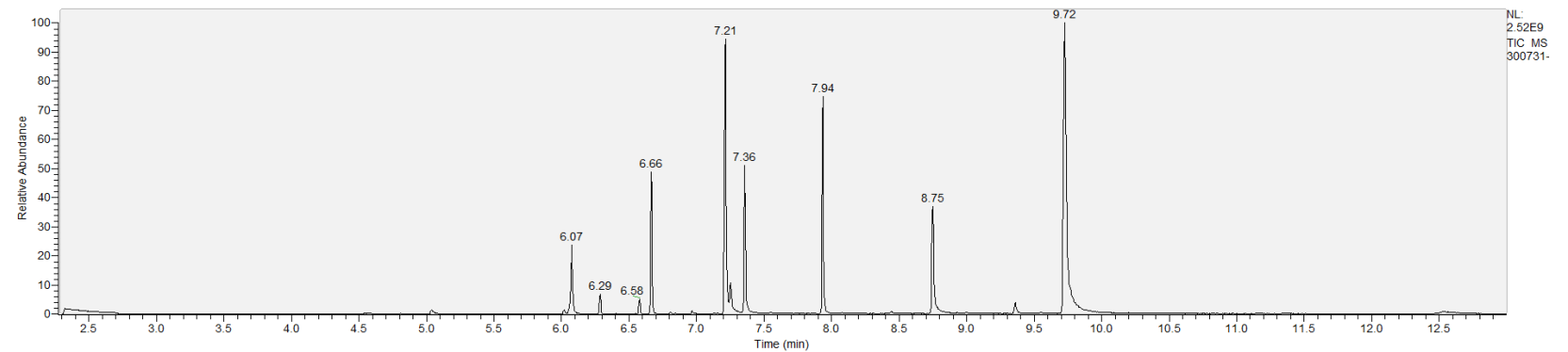
From Asheboro, North Carolina on
11/2/2022
Assumed to be heroin

This is a messy brew of 10 major substances:

- **phenacetin**
- **caffeine**
- **procaine**
- **meconin**
- **hydrocotarnine**
- **fentanyl**
- **levamisole**
- **4-ANPP**
- **xylazine**
- **cocaine**

But we found lots of contaminants too, with traces of acetaminophen + N-phenylpropanamide + melatonin + noscapine + heroin + dimethyl sulfone (methylsulfonylmethane MSM). Trace substances in small quantities can sometimes be harmless, but other times can cause health problems. If you have unexpected sensations, it may be due to these.

16 substance mixture





**“What
Fresh Hell
Is This?”**

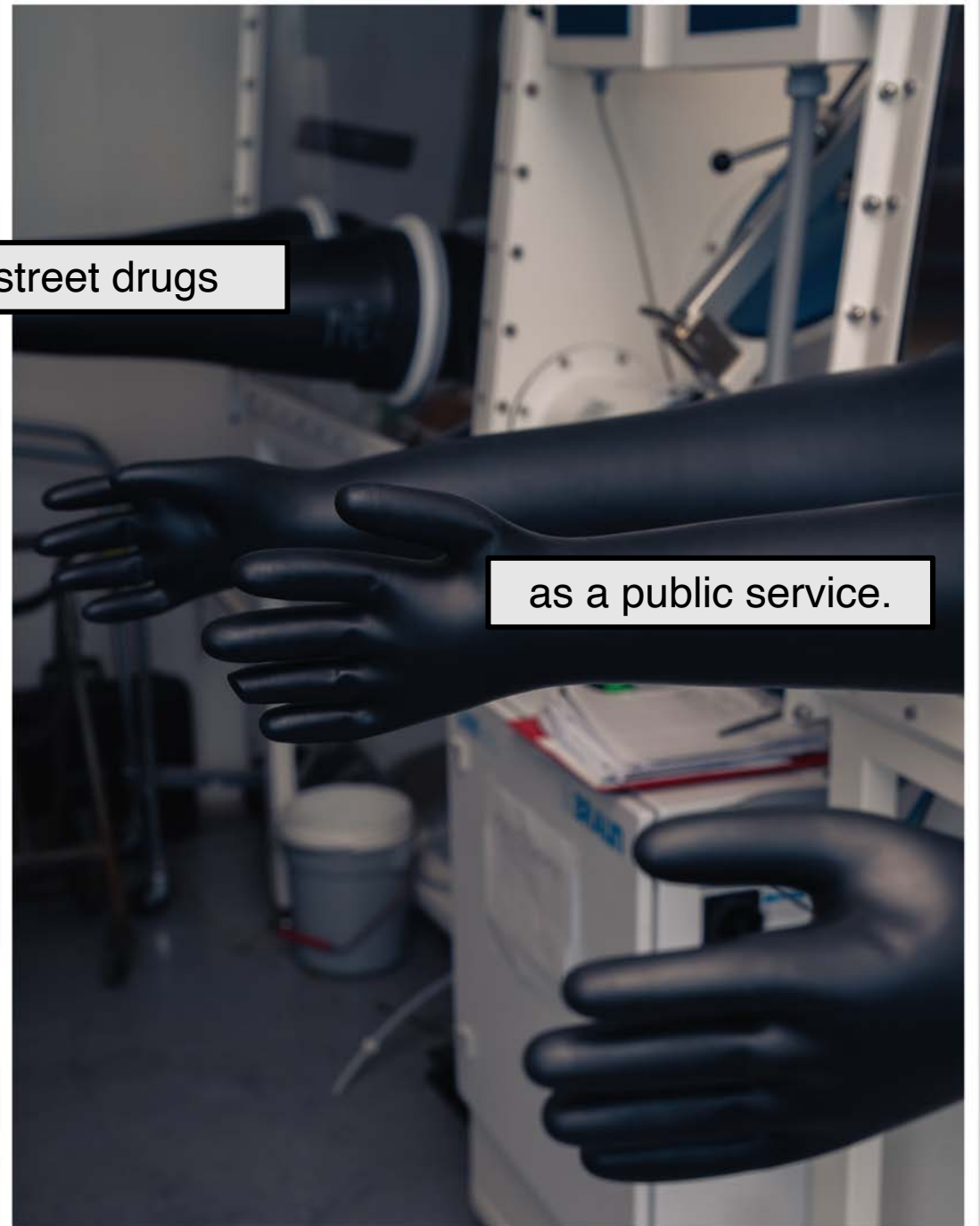
Understanding
the illicit drug
supply for
better health

Quote from the International Network of Health and Hepatitis in Substance Users conference, October 2022, describing the ever-changing drug supply.

In our lab on campus



we monitor street drugs

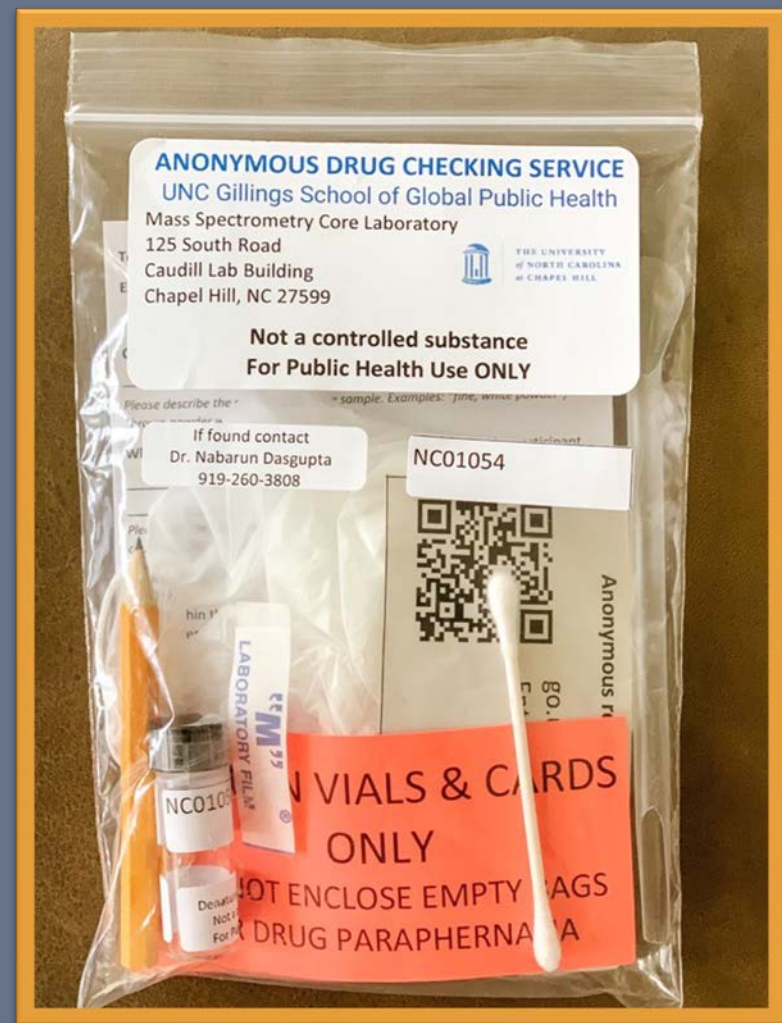
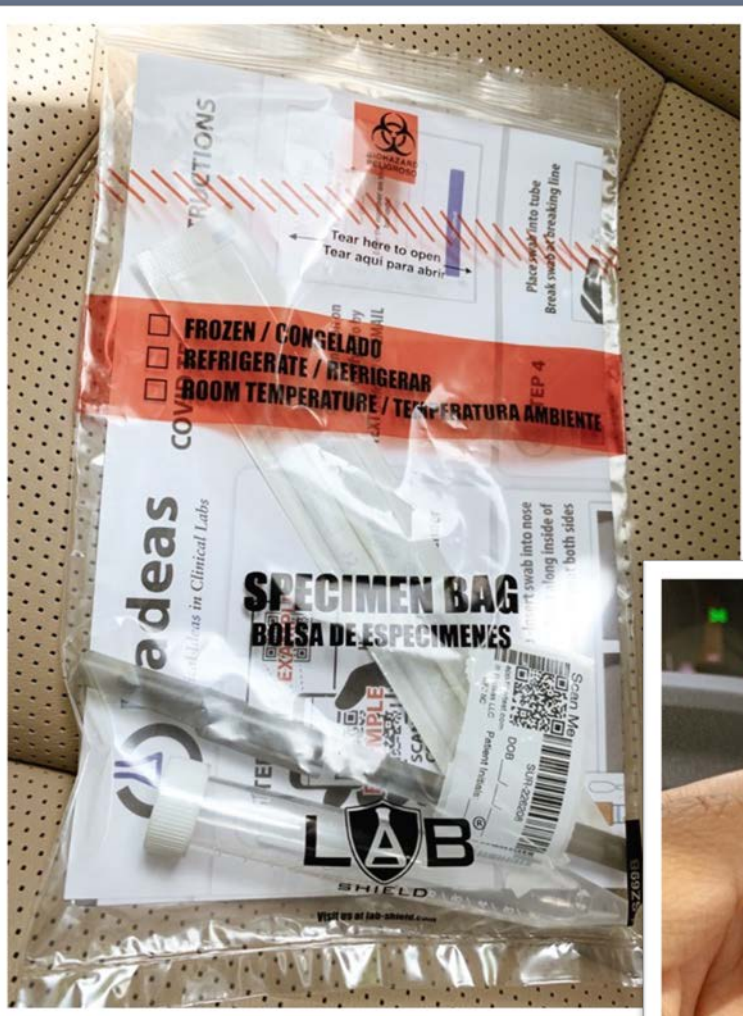


as a public service.



Harm reduction programs, health departments, clinics, hospitals, user unions, and EMS send us samples from around the country

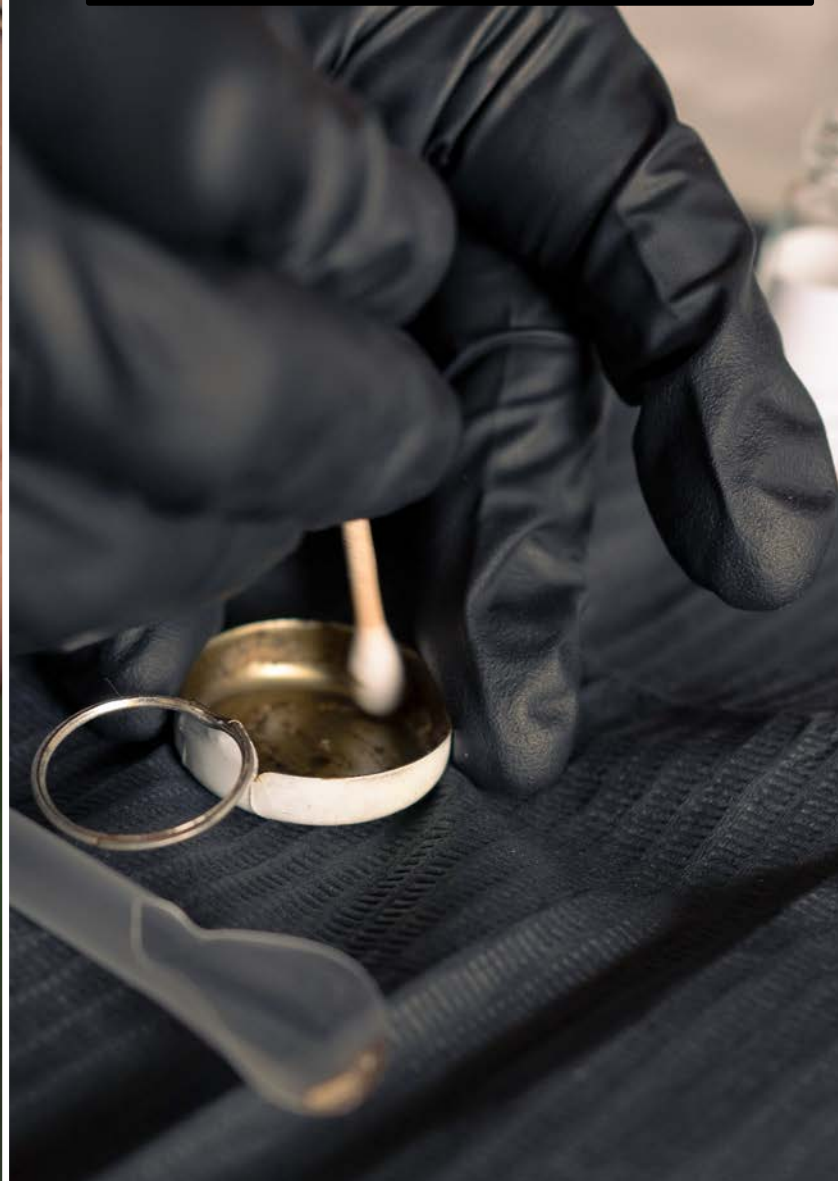
...using this innovative kit.

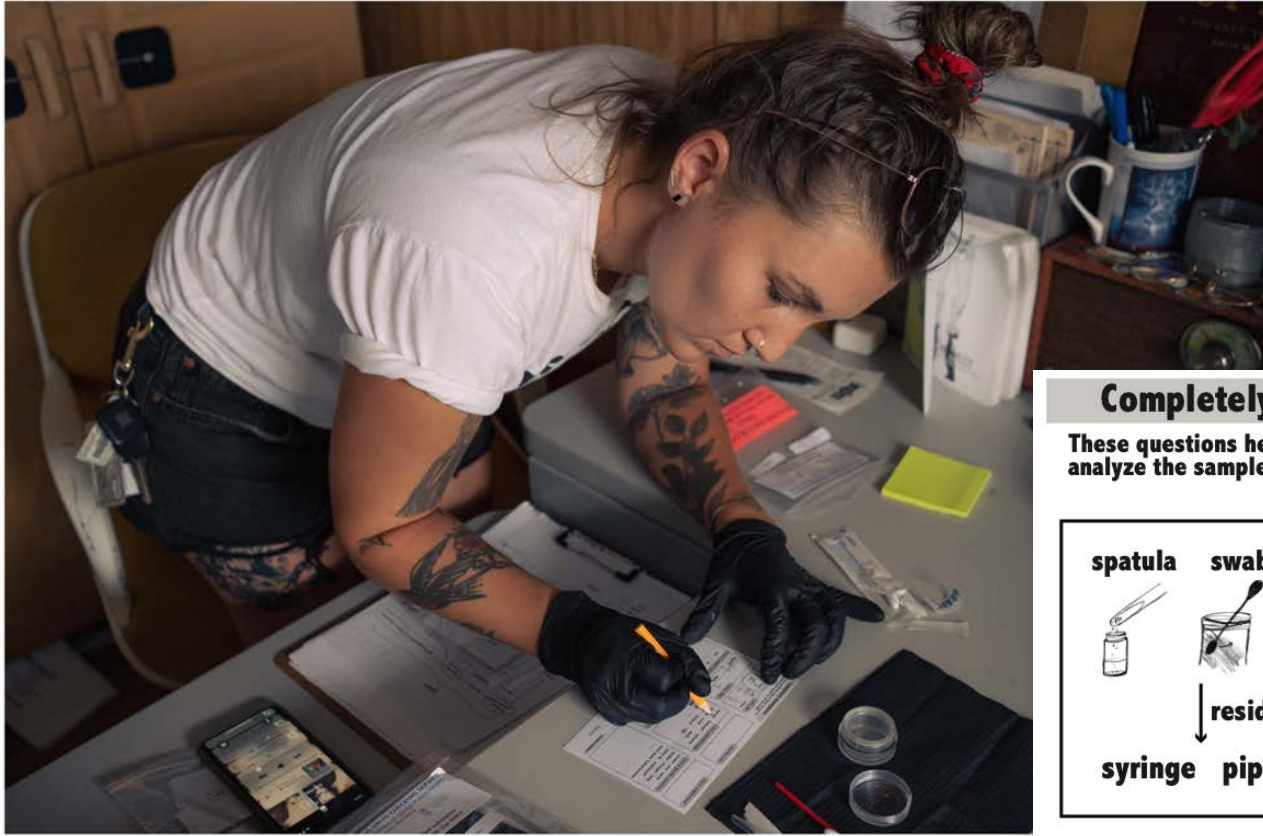


Samples are given voluntarily.



The tests are anonymous.









Programs share health information with us

Completely Anonymous

These questions help us figure out how to analyze the sample in our lab at UNC.

circle

| | | | |
|---|---|---|---|
| spatula | swab | pill | cotton |
|  |  |  |  |
| ↓ residue? | | | |
| syringe | pipe | foil | |

describe color and markings

city or neighborhood

circle expected drugs

| | | |
|----------|----------|----------|
| heroin | fentanyl | xylozine |
| cocaine | crack | meth |
| ketamine | weed | M30 |
| benzo | other: | |
| MDMA | | |
| unknown | | |

circle & describe sensations

normal nice weird
 weaker stronger long
 more up unpleasant
 more down hallucinations
 sedating unusual taste

describe:

today's date

month **date**

circle textures

| | | |
|----------|------------|-----------|
| crystals | pill | fake pill |
| powder | edibles | oil/wax |
| ↓ | plant/leaf | tar |
| chunky | other: | |
| shiny | | |
| flaky | | |
| dull | | |

circle if involved in overdose

yes no don't know

describe the overdose to warn others:

overdose

sensations

sample number

to give human context beyond molecules.

Packages arrive on campus



in compliance with drug and postal laws.



We record the information, and



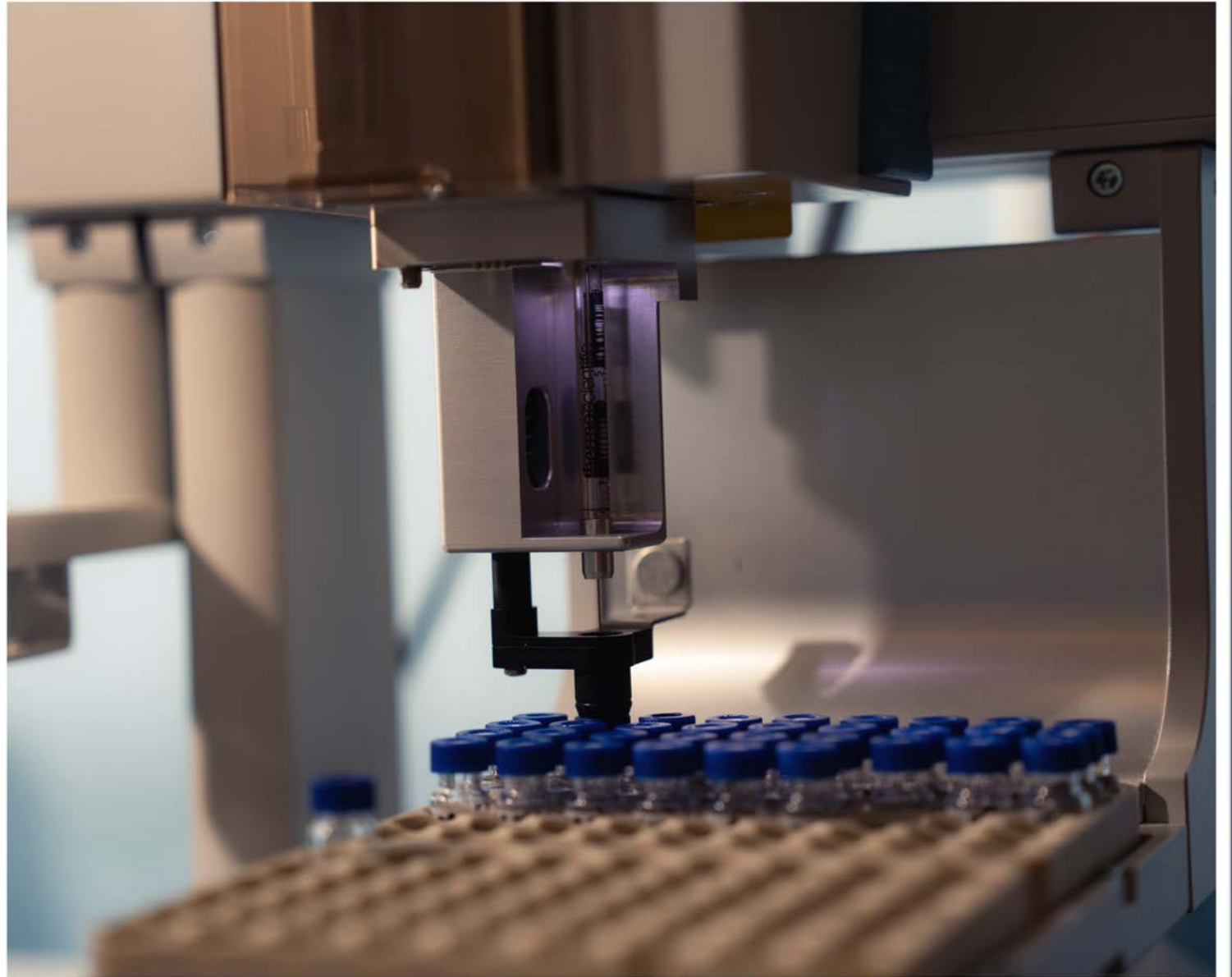
catalog the samples.



We prep the samples, and



load them on a GCMS (mass spec).



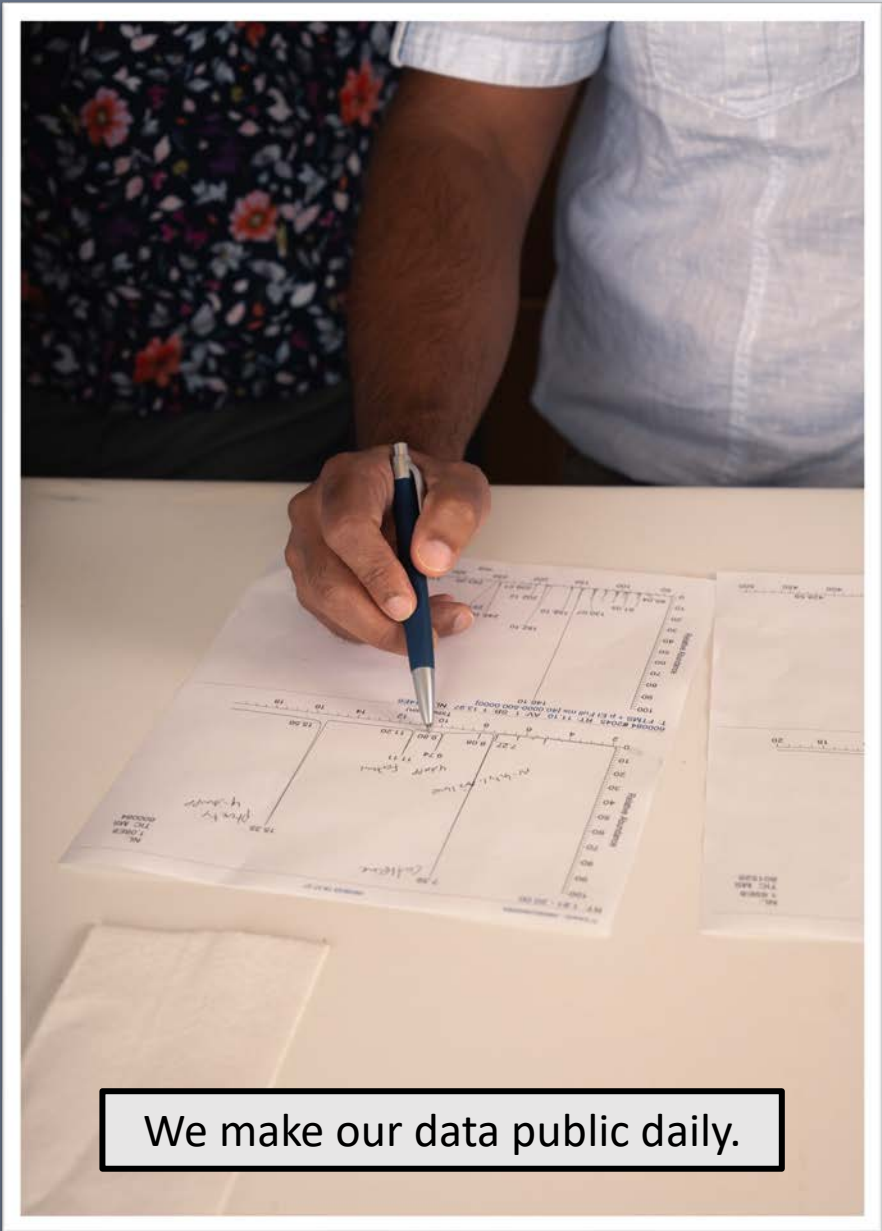
We interpret the high resolution results,



to determine exactly what's in the sample.



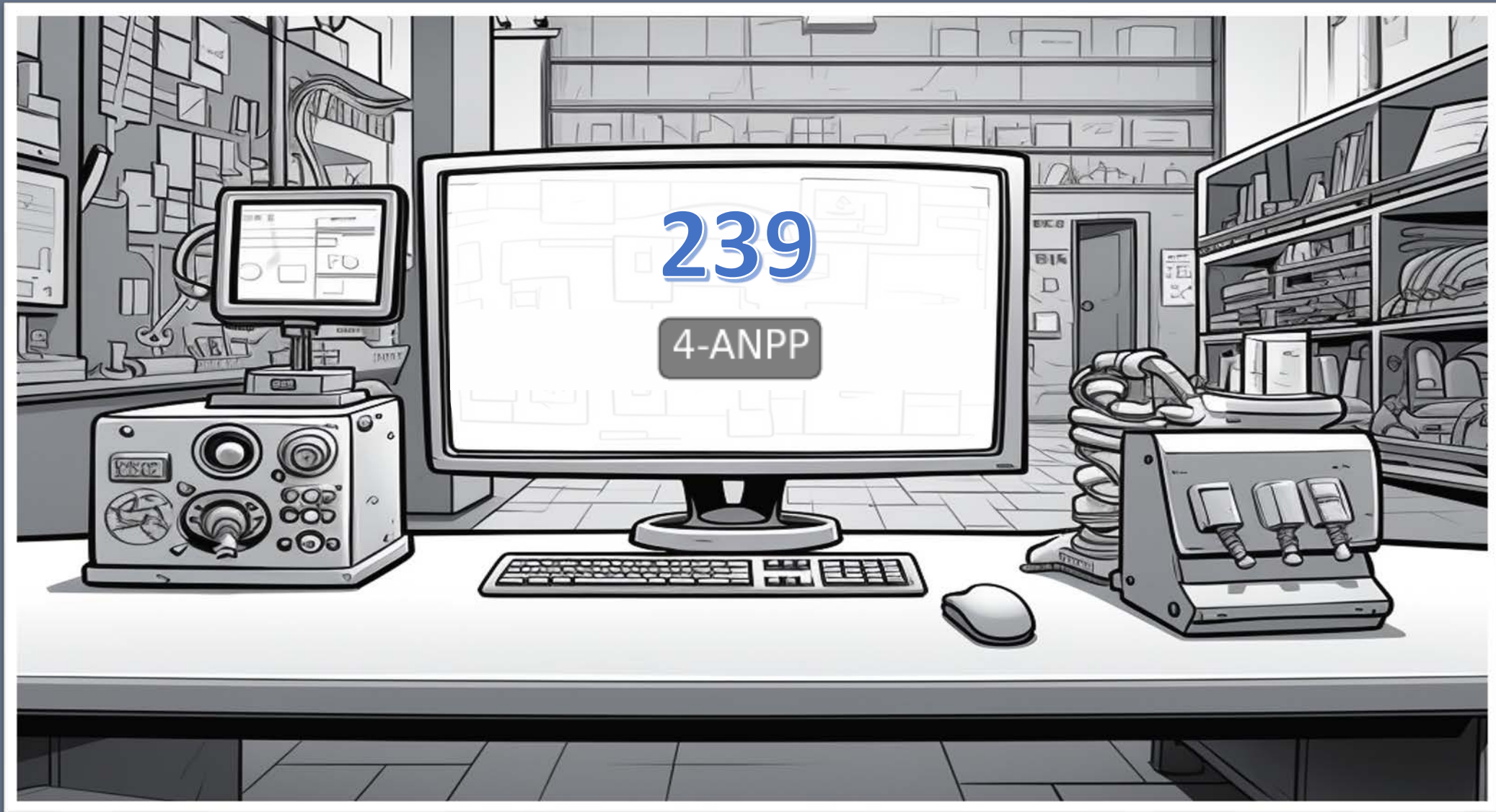
Advanced statistics help detect hidden patterns.



We make our data public daily.



We've detected a multitude of substances in drug supply.



Location, date Sold as Physical description

From Winston-Salem, North Carolina on 5/18/2022 Assumed to be fentanyl

Primary substances detected

This is a messy brew of 7 major substances:

- xylazine
- mannitol
- 4-ANPP
- p-fluorofentanyl
- non-specific sugars
- fentanyl
- heroin

Traces

And we also found traces of dimethyl sulfone (methylsulfonylmethane MSM) + acetylcodeine + 6-monoacetylmorphine (6-MAM). Trace substances in small quantities can sometimes be harmless, but other times can cause health problems. If you have unexpected sensations, it may be due to these.

Fentanyl is potent and the amount changes by batch. If you weren't expecting it, consider getting test strips online or from a harm reduction program. Carry naloxone (Narcan) to reverse overdoses. Don't use alone so someone can help if you go out.

Xylazine causes serious skin problems. These can happen anywhere on the body and don't heal quickly. And, xylazine can come on stronger than traditional dope and knock you out, so be mindful of your surroundings. It's best to avoid dope with xylazine. You might need medical attention to prevent long-term damage.

There are a lot of different substances in this sample. We don't know the harms that some of these can cause. Be careful and be prepared for unexpected reactions.

Fluorofentanyl is showing up recently. It's the result of different raw materials being used to make fentanyl. We don't know yet if it causes any specific problems.

Looks = white powder, chunky

Need free supplies and advice to keep you safe? Find your nearest harm reduction program at harmreduction.org

Major substances in graph:

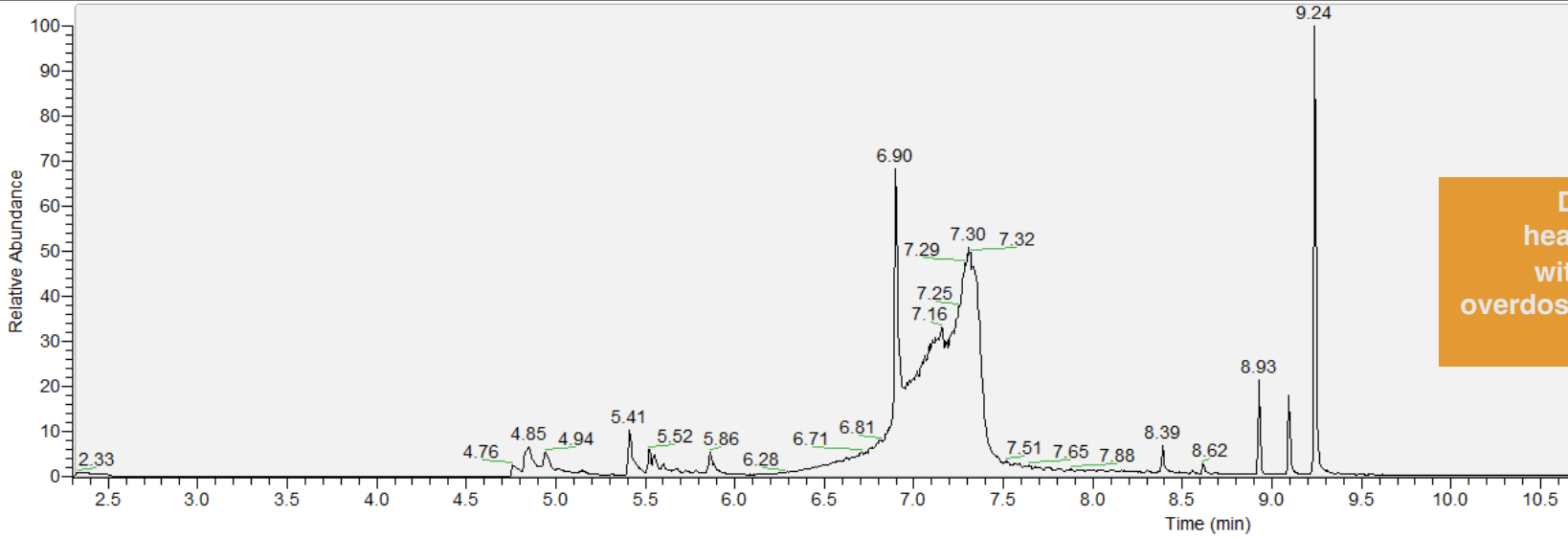
- Peak 6.9 = xylazine
- Peak 7.3 = mannitol
- Peak 8.39 = 4-ANPP
- Peak 8.93 = heroin
- Peak 9.1 = p-fluorofentanyl
- Peak 9.24 = fentanyl

Drug-specific health warnings with actionable overdose prevention advice

New drugs

Getting help locally

Scientific accountability



NL: 2.53E9 TIC MS 300298-a

Method(s): GCMS + Derivatized GCMS Peaks that don't appear on the graph were detected using other advanced methods. If a peak appears on the graph but isn't listed above, then we reviewed it and determined it's unimportant. Contact us if you want details.



Since March 2022

N = 4,145 samples

160+ programs

35+ US states

North Carolina Street Drug Samples

Mar 22, 2021-
Jan 19, 2023

N=896 samples

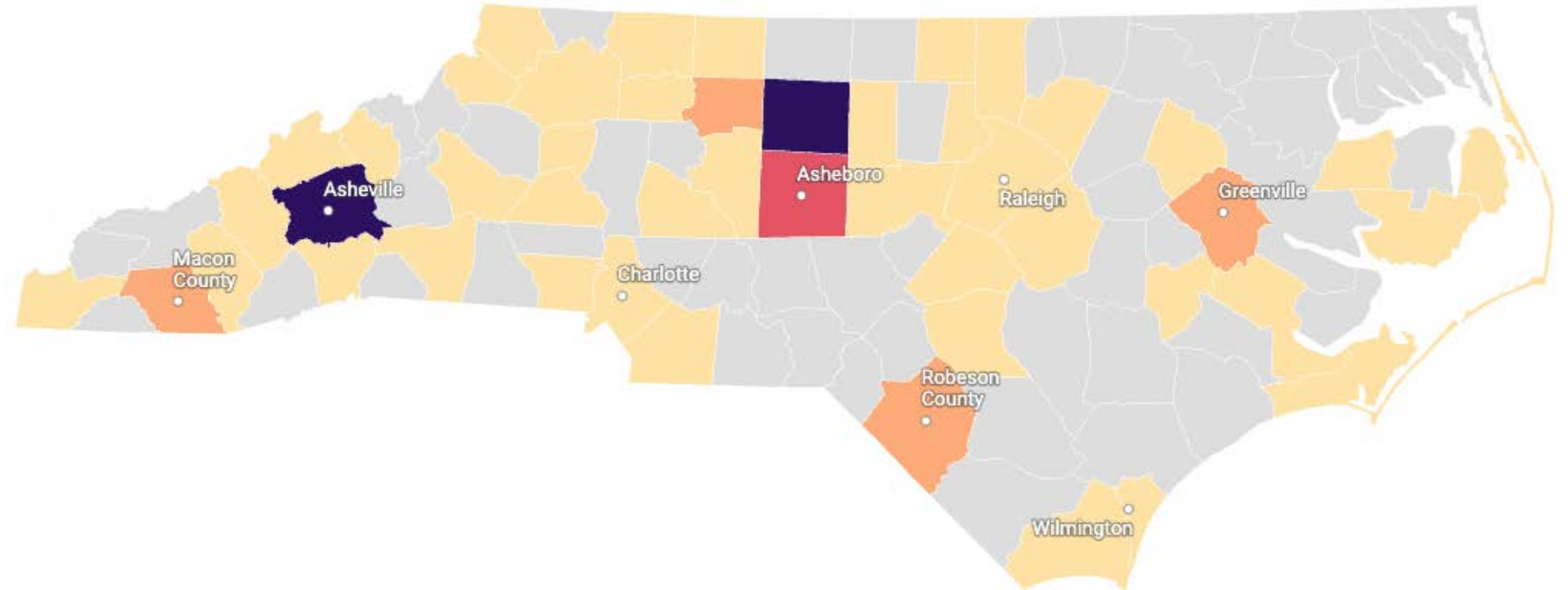
from 29 programs

harm reduction, clinics, EMS,
health departments

in 47 counties

Drug Samples Received

< 37 37-73 73-109 109-145 ≥ 145



Randolph County Summary

- N=86 samples
- Colors: **white, brown, purple**, clear, tan, blue, gray, red
- Overdose reported: 24%
- Fentanyl positive: 68.6%
- Xylazine positive: 23.3%
- Nitazene positive: 1 sample

400199

From Randleman, North Carolina on 4/10/2023
Assumed to be heroin, fentanyl, xylazine

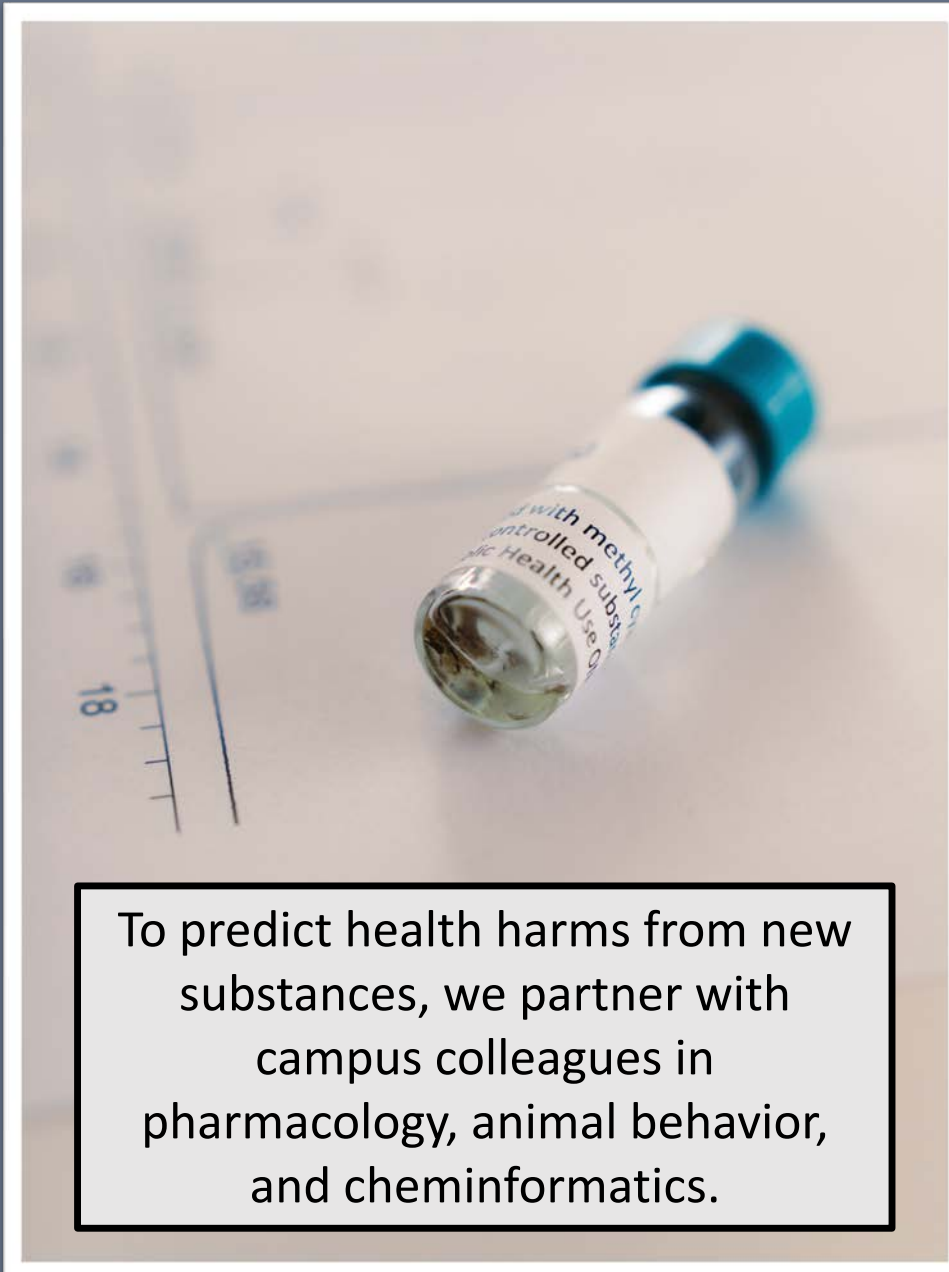
4 major substances detected:

- **4-ANPP**
- **xylazine**
- **1,3-Diacetin**
- **fentanyl**

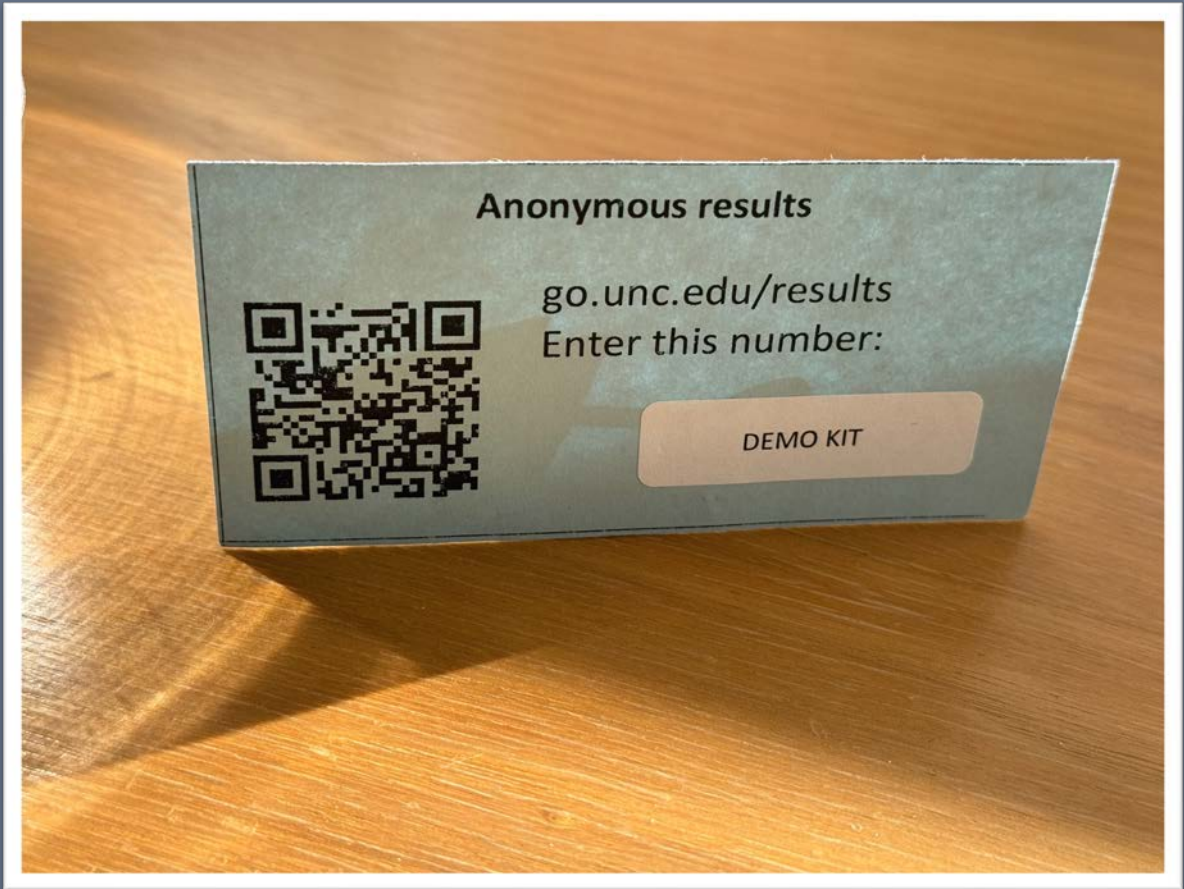
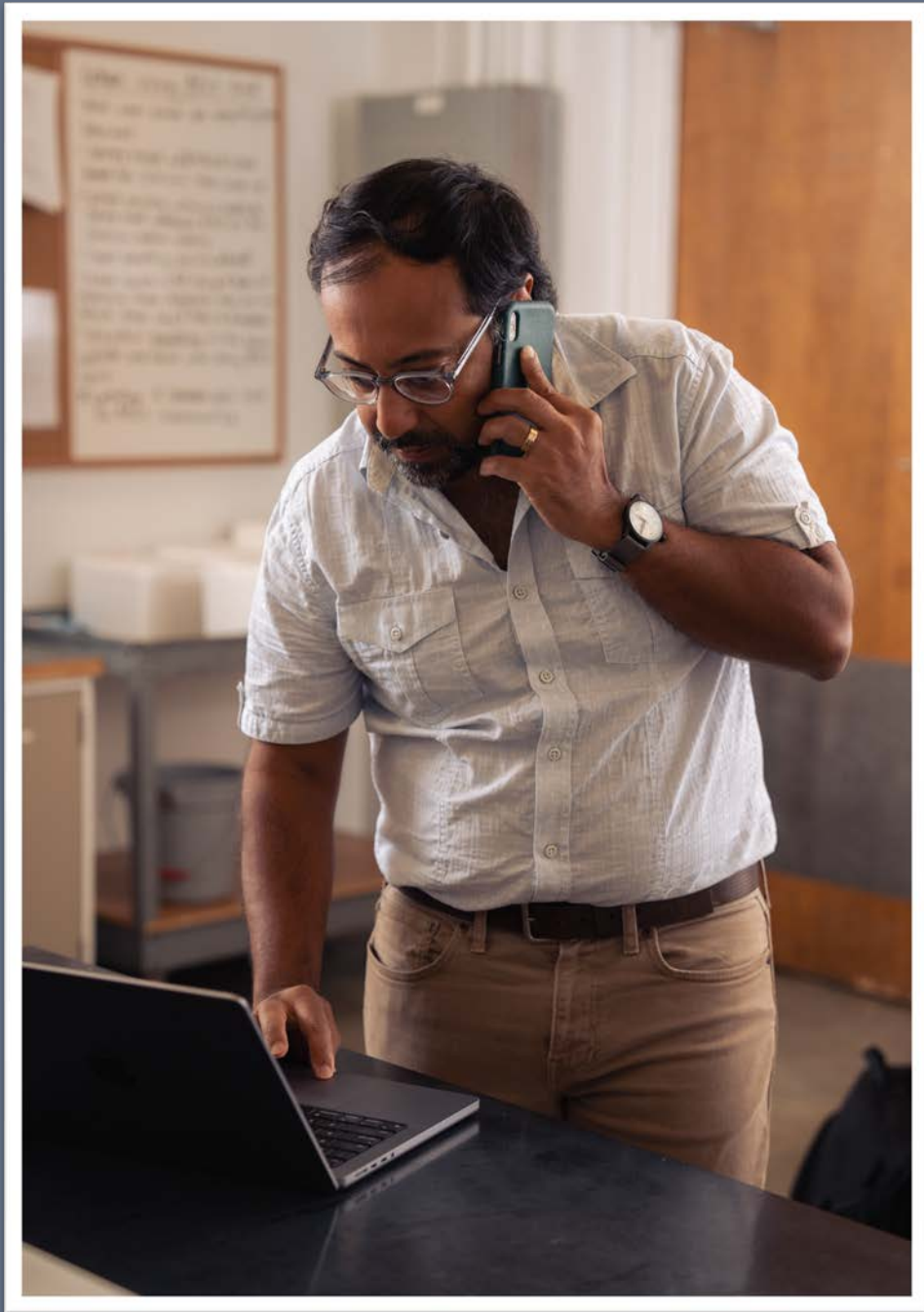
And we also found traces of **metonitazene**. Trace substances in small quantities are usually harmless, but can sometimes cause health problems. Unexpected sensations may be due to these.

Current watch list

1. Nitazenes – Novel opioids of varying potency
2. Potent benzodiazepines – Here to stay in fake pills?
3. Colored drugs – Hype versus reality
4. Fentanyl in stimulants – More in powder forms
5. (dex)medetomidine – Xylazine replacement
6. Tianeptine – Odd withdrawal syndromes
7. Fentanyl analogues – Predictably diversifying
8. Ketamine mixtures – Unexpected combos with stimulants
9. K2/Spice contaminants – Could opioids appear?
10. Substituted cathinones – Will they diversify?



To predict health harms from new substances, we partner with campus colleagues in pharmacology, animal behavior, and cheminformatics.



Most importantly, we provide timely results back to the individual.

We help people
make better
decisions about
what to put in their
bodies.



Our information empowers people to answer questions of local relevance.



Questions we have helped answer

Is there fentanyl in black tar heroin?

Are nitazenes causing these overdoses?

What is causing a patient's atypical withdrawal?

Can xylazine explain these skin wounds?

How accurate are these test strips?

Can black lights identify xylazine and fentanyl?

Free Service!

Any of these entities can request free mail-in drug checking in NC

- Harm reduction program
- Drug user union
- EMS
- Clinic or hospital
- Health department

We cannot provide services to *individuals*.

Results must be provided back to donor or community

Thanks to the NC Collaboratory for supporting this free service.

Request kits at <https://streetsafe.supply>

Thanks from and to our team!



Tory



Illyana



Allison



Don



Louise

Shelby
Bridgette
Shay
Tushar
William



Drew



Brandie



Maryalice



LaMonda

Rachel Clark @ DanceSafe



Hand drawn by

**BRITAIN
PECK**



Zoë



Nabarun



Colin



Erin

Table 1. Adulterant substances detected in methamphetamine and cocaine, by stimulant type.

Descubrimos que la metanfetamina era en su momento mientras que la metanfetamina contenía más adulterantes. Igualmente co

Metanfetamina

Fentanilo prevalencia:

6.2%

95% CI: 1.1%, 11.2%

Cocaína

Fentanilo prevalencia:

12.6%

95% CI: 2.4%, 22.8%

Pero, cada estado tiene diferente prevalencia.

| Stimulant | Average Number of Substances Detected by GCMS (95% CI) | Difference (t-test) |
|---------------------|--|------------------------|
| Methamphetamine (5) | 2.01 (1.74, 2.28) | t=8.1, df 456, p<0.001 |
| Cocaine (2) | 1.07 (1.03, 1.11) | |
| Methamphetamine (5) | 2.39 (2.08, 2.71) | t=4.1, df 258, p<0.001 |
| Cocaine (5) | 1.07 (1.00, 1.23) | |



ELSEVIER
journal home

Prevalence of fentanyl in methamphetamine and cocaine by community-based drug checking services

Karla D. Wagner^a, Phillip Fiuty^b, Kimberly Page^c, Erin C. Tracy^d, Maryalice Nocera^d, Colin W. Miller^d, Lina J. Tarhuni^{c,e}, Nabarun Dasgupta^{d,*}

* Top 10 or occurring at least 5 times

** Dimethyl sulfone is also known as methylsulfonylmethane (MSM)

Abbreviations: 1-ANPP= 4-anilino-N-phenethylpiperidine; CI=confidence interval; df=degrees of freedom;

GCMS=gas chromatography-mass spectrometry