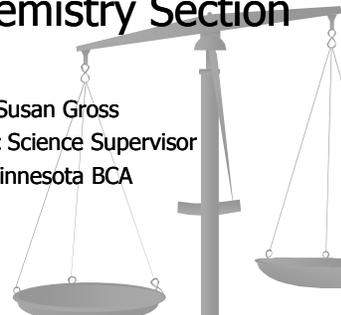


Drug Chemistry Section

Susan Gross
Forensic Science Supervisor
Minnesota BCA



Drug Chemistry Section

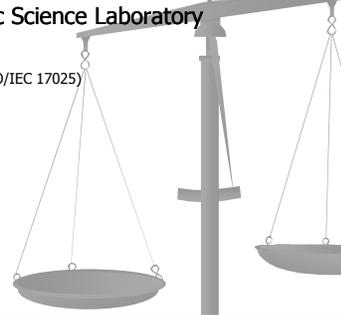
- Who we are
- What we do
- Goals of section
- Statistics
- Trends

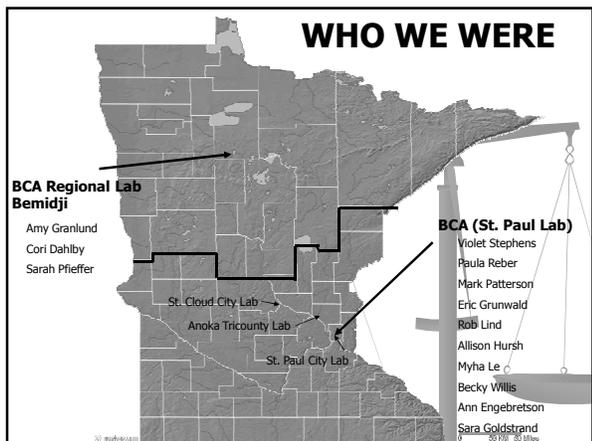


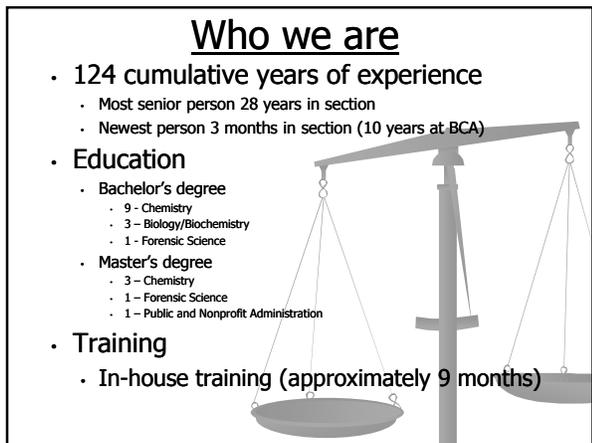
Who we are

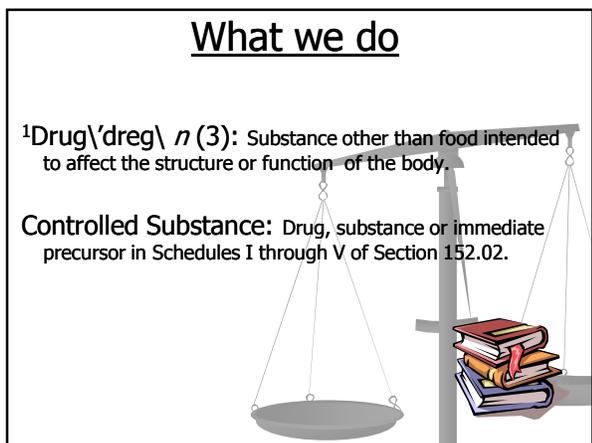
MN Bureau of Criminal Apprehension
Forensic Science Laboratory

- Accredited by ASCLD/LAB
 - International Standard (ISO/IEC 17025)
 - ASCLD/LAB Supplemental
- Quality Systems Manual
- SWGDRUG
- Section Methods/SOPs



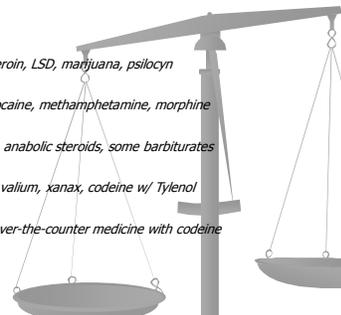






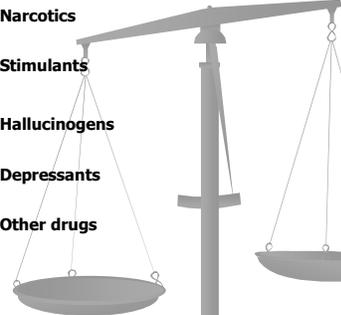
Controlled Substance Act

MN State Statute Chapter 152



- * *Schedule I* - heroin, LSD, marijuana, psilocybin
- * *Schedule II* - cocaine, methamphetamine, morphine
- * *Schedule III* - anabolic steroids, some barbiturates
- * *Schedule IV* - valium, xanax, codeine w/ Tylenol
- * *Schedule V* - over-the-counter medicine with codeine

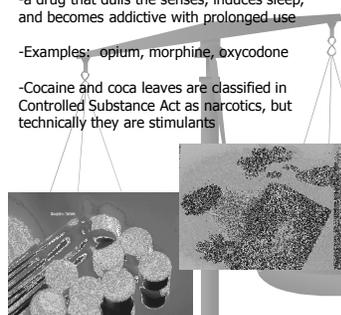
Types of Drugs



- * **Narcotics**
- * **Stimulants**
- * **Hallucinogens**
- * **Depressants**
- * **Other drugs**

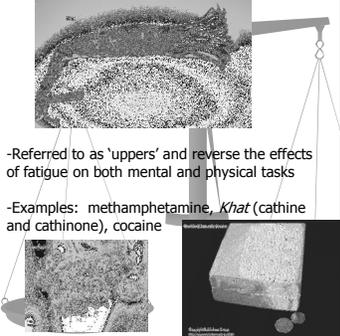
Types of Drugs

- * **Narcotics** -a drug that dulls the senses, induces sleep, and becomes addictive with prolonged use
- * **Stimulants** -Examples: opium, morphine, oxycodone
- * **Hallucinogens** -Cocaine and coca leaves are classified in Controlled Substance Act as narcotics, but technically they are stimulants
- * **Depressants**
- * **Other drugs**



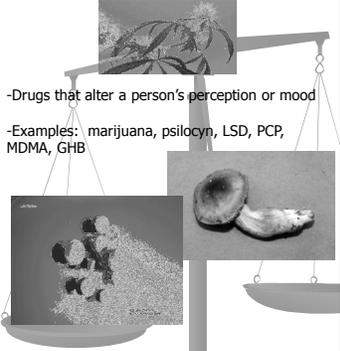
Types of Drugs

- * **Narcotics**
- * **Stimulants**
- * **Hallucinogens** -Referred to as 'uppers' and reverse the effects of fatigue on both mental and physical tasks
-Examples: methamphetamine, *Khat* (cathine and cathinone), cocaine
- * **Depressants**
- * **Other drugs**



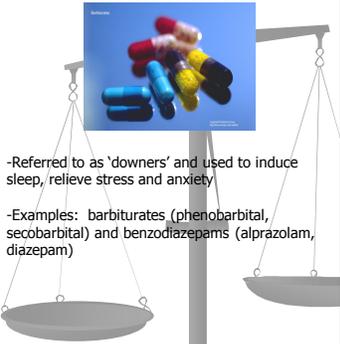
Types of Drugs

- * **Narcotics**
- * **Stimulants** -Drugs that alter a person's perception or mood
-Examples: marijuana, psilocyn, LSD, PCP, MDMA, GHB
- * **Hallucinogens**
- * **Depressants**
- * **Other drugs**



Types of Drugs

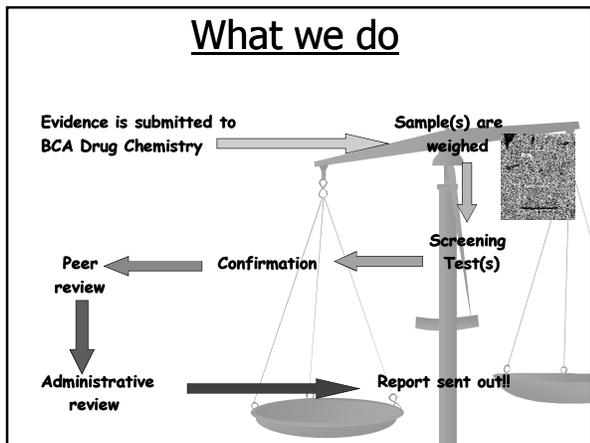
- * **Narcotics**
- * **Stimulants**
- * **Hallucinogens** -Referred to as 'downers' and used to induce sleep, relieve stress and anxiety
-Examples: barbiturates (phenobarbital, secobarbital) and benzodiazepams (alprazolam, diazepam)
- * **Depressants**
- * **Other drugs**



Types of Drugs

- * Narcotics
- * Stimulants
- * Hallucinogens
- * Depressants
- * Other drugs
 - Anabolic steroids
 - Non-controlled substance





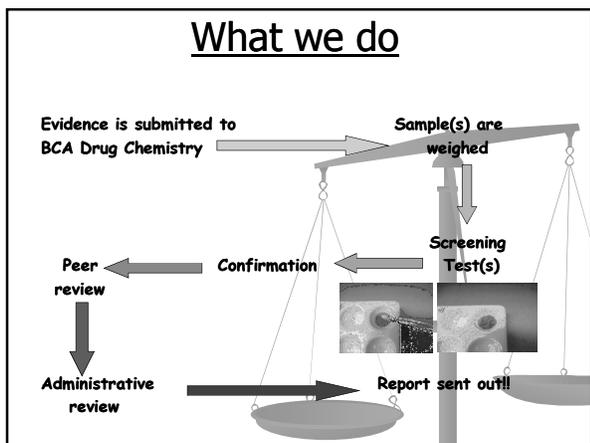
Common thresholds

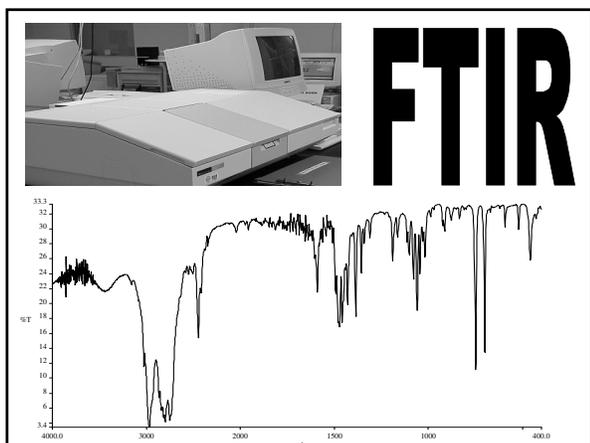
(cocaine, heroin, methamphetamine)

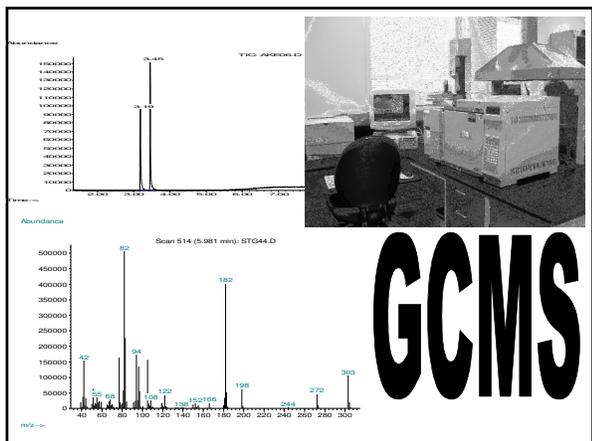
Level of charge	Possession	Sale
1 st Degree	25 g	10 g
2 nd Degree	6 g	3 g
3 rd Degree	3 g	any
4 th Degree	Phencyclidine or Hallucinogen	Any amt sch I,II or III
5 th Degree	Any amt sch I,II, III or IV	MJ or THC except small amount

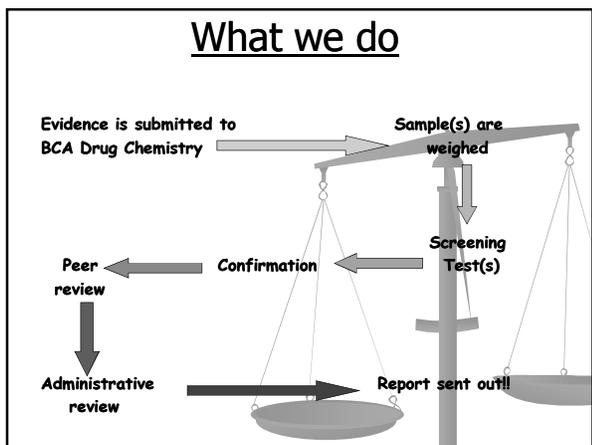
Marijuana thresholds

Level of charge	Possession	Sale
1 st Degree	100 kg	50 kg
2 nd Degree	50 kg	25 kg
3 rd Degree	10 kg	5 kg
4 th Degree		Any amount in school zone/housing zone/drug treatment facility
5 th Degree	> 42.5 grams	> 42.5 grams





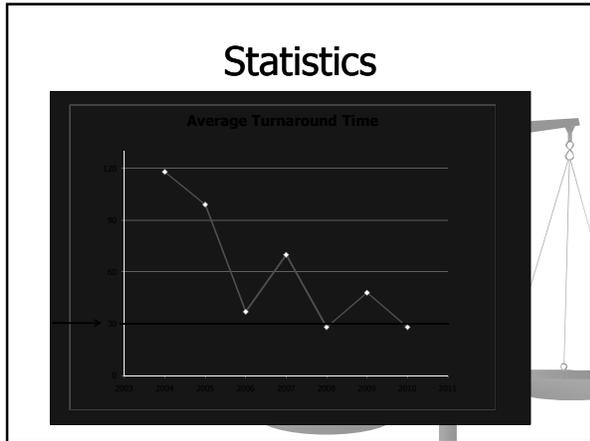




Goal – 30 day turnaround time

Past

- Policy changes
- Section ideas (time savers, semantics, testimony via teleconferencing)
- Grant money for overtime, hire retired scientists
- Pilot project
- MAPPING

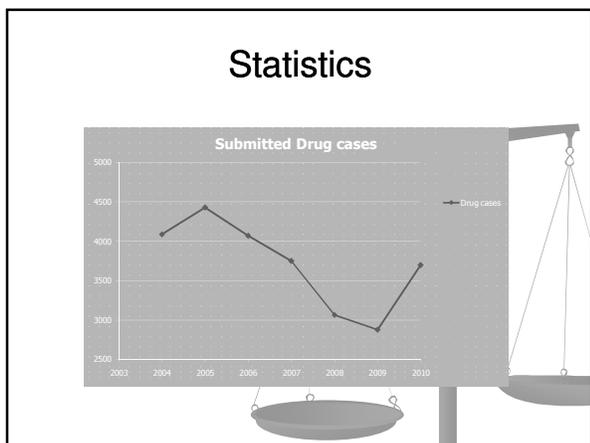


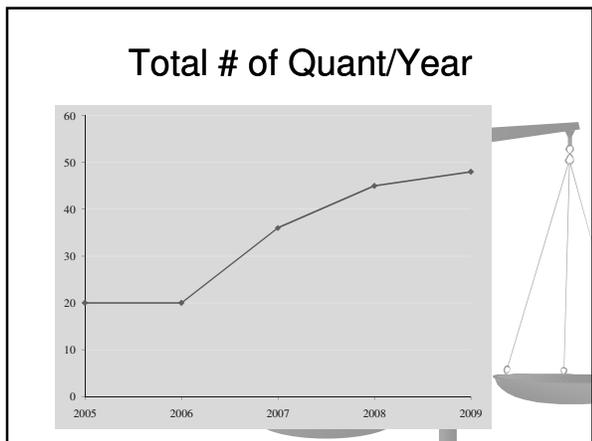
Goal – maintain 30 day TOT

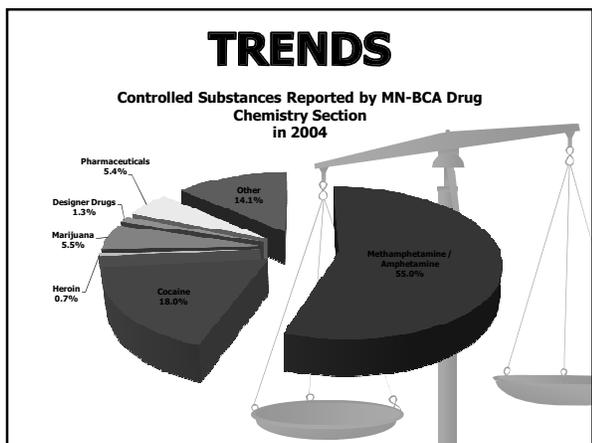
Present

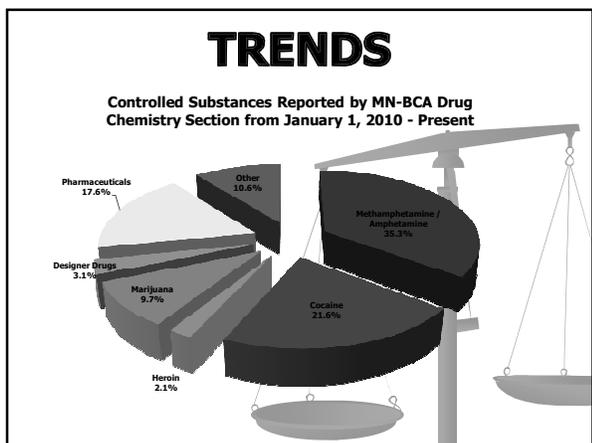
- continue to work on MAPPING ideas
- Raman project through Grant
- going paperless

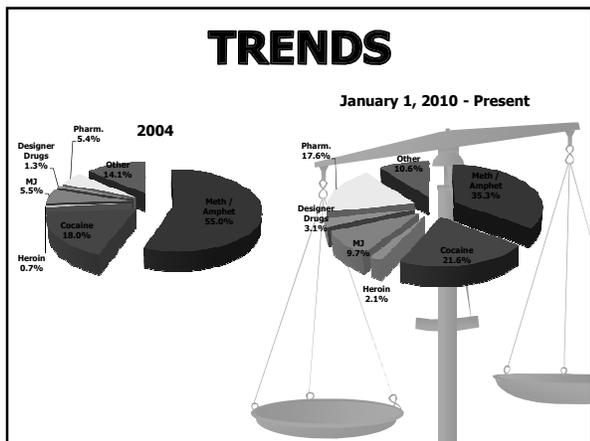
A grayscale illustration of a balance scale is positioned to the right of the text. The scale is tilted, with the right pan being lower than the left pan.











Salvia Divinorum (salvinorin-A)

- Plant material with active drug known as salvinorin-A
- Recently controlled in MN
- Subd. 5. (a) A person who unlawfully sells any amount of salvia divinorum or salvinorin A is guilty of a gross misdemeanor; (b) A person who unlawfully possesses any amount of salvia divinorum or salvinorin A is guilty of a misdemeanor.
- Commonly smoked or chewed
- Causes hallucinations similar to LSD or PCP

Synthetic Cannabis: *K2* and *Spice*

- Herbal product that contains synthetic cannabis
- Hallucinogenic effects
- Different drugs include:
 - JWH-018 (1-naphthalenyl(1-pentyl-1H-indol-3-yl)methanone)
 - JWH-073 (1-naphthalenyl(1-butyl-1H-indol-3-yl)methanone)
- City of Duluth has banned the sale, purchase or possession of synthetic mj
- North Dakota and 6 other states have controlled it
- MN Board of Pharmacy is looking into it

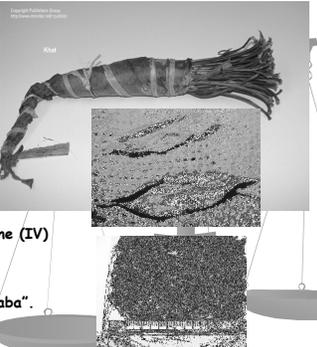
KHAT; *Catha Edulis F.*

Plant Material "KHAT" is grown in the Middle East and South America and imported into the US

Eastern cultures chew the shoots to increase alertness

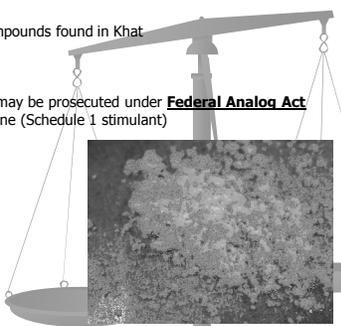
Cathinone (I) degrades to Cathine (IV) in ambient conditions.

Dried leaves referred to as "Graba".



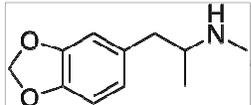
Mephedrone

- 4-Methylmethcathinone
- Synthetic stimulant based on compounds found in Khat
- Illegal in North Dakota
- Not scheduled in the US though may be prosecuted under **Federal Analog Act** due to its similarity to Methcathinone (Schedule I stimulant)

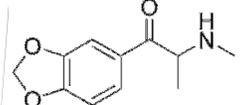


Federal Analog Law

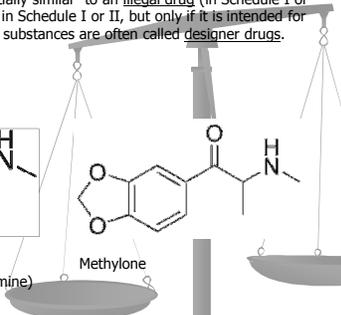
- allowing any chemical "substantially similar" to an illegal drug (in Schedule I or II) to be treated as if it were also in Schedule I or II, but only if it is intended for human consumption. The banned substances are often called designer drugs.



MDMA
(Methylenedioxymethamphetamine)
Schedule I Hallucinogen

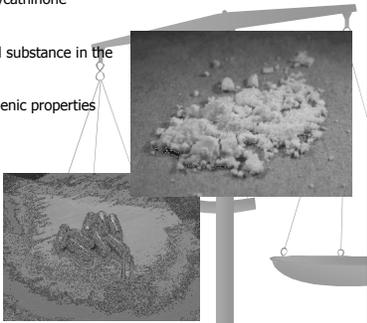


Mephedrone



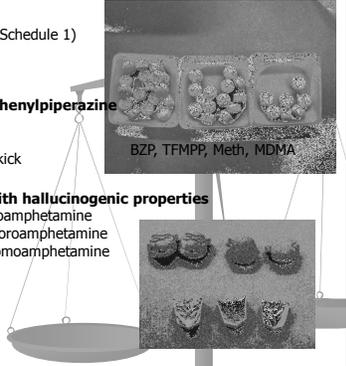
Methylone

- N-Methyl-3,4-methylenedioxycathinone
- Methylone is not a scheduled substance in the United States.
- Has stimulant and hallucinogenic properties



Others...

- **BZP – Benzylpiperazine**
 - recently scheduled in MN (Schedule 1)
 - stimulant
 - often found with MDMA
- **TFMPP – 3-Trifluoromethylphenylpiperazine**
 - not controlled
 - often occurs with BZP
 - believed to give an extra kick
- **Analogues of amphetamine with hallucinogenic properties**
 - DOI – 2,5-dimethoxy-4-iodoamphetamine
 - DOC – 2,5-dimethoxy-4-chloroamphetamine
 - DOB – 2,5-dimethoxy-4-bromoamphetamine



Questions?

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