Neuroforensics

Looking into the human brain
for judicial purposes

New capabilities

- Structure
  - MRI
  - DTI-MRI
- Biochemistry
  - PET
  - SPECT
- Neural activity
  - fMRI
  - EEG/ERP
  - MEG
- Genome sequence
  - SNPs
  - Whole exome
  - Whole genome ($1000)
- Datasets
  - GWAS studies
  - Human connectome project

New potential uses

- Assess veracity of testimony

Classical lie detectors monitor the peripheral nervous system

- Predict dangerousness (Bail? Monitor?)
- Assess competence to stand trial
- Assess volition
- Reveal mitigating factors in sentencing
- Optimize referrals to, e.g., counseling, addiction, anger management programs
- Predict the chance of recidivism
- Distinguish chronic pain from malingering
- Recover lost memories
- Verify intent

Enhanced capabilities from monitoring the central nervous system

Committee on Science, Technology, and Law (CSTL)

Explores areas where science can help the legal system. Can commission consensus reports

Members divided between science and law (academics, judges, lawyers in practice or in regulatory agencies)

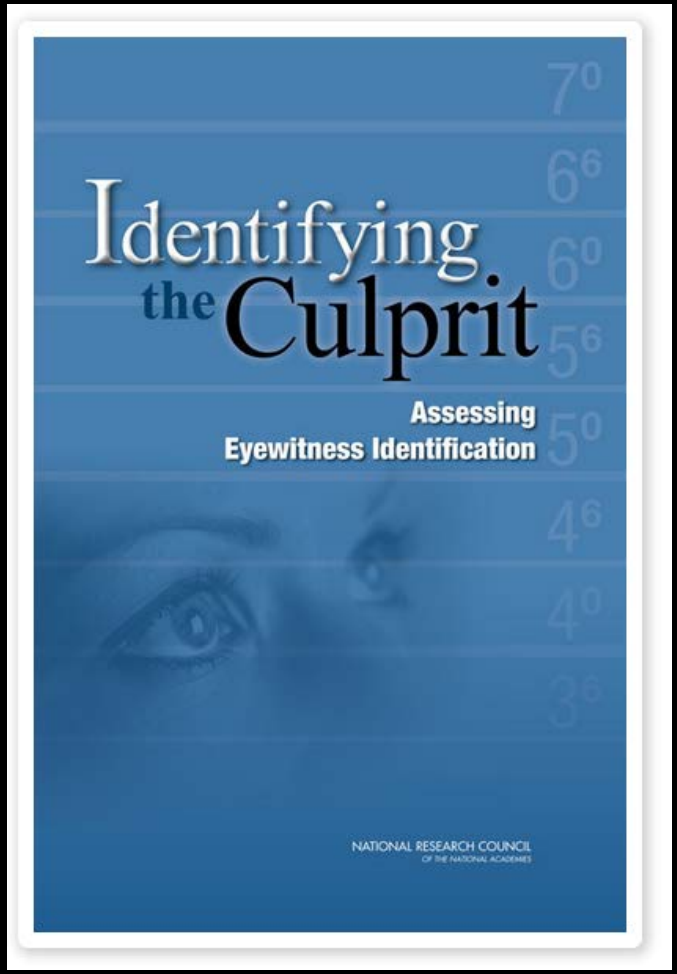
Can sponsor workshops and consensus reports

Committee on Science, Technology, and Law (CSTL)

A consensus report:

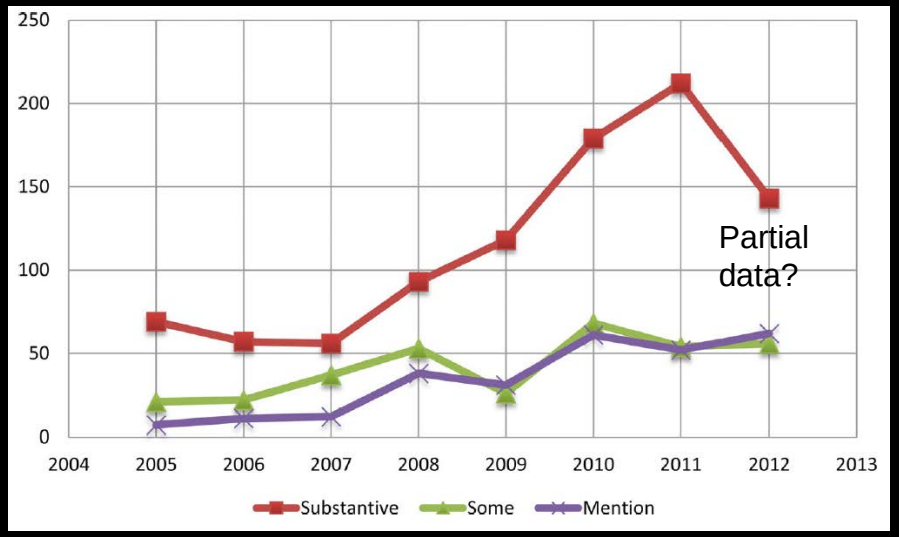
Reviewed factors that limit the validity of eyewitness identifications and recommended best practices for law enforcement agencies and courts.

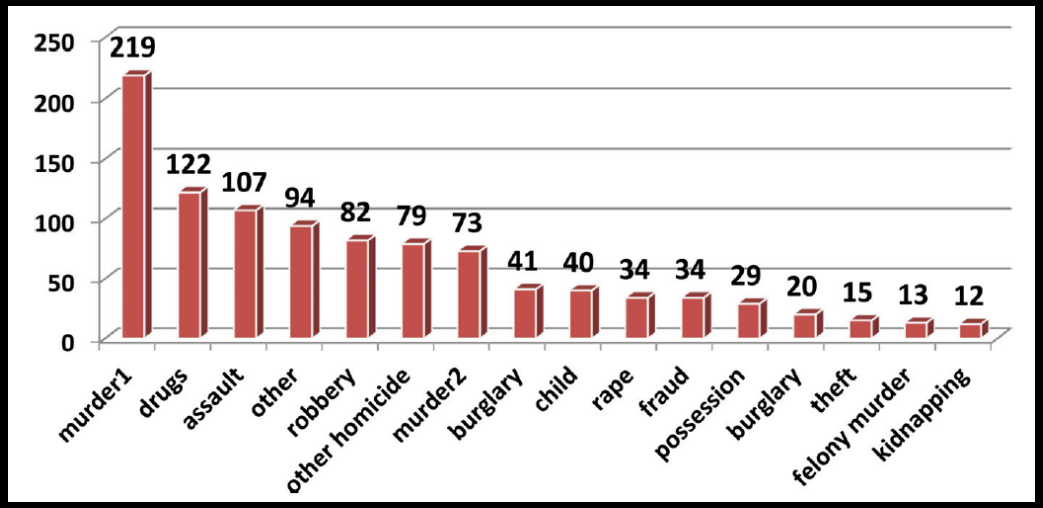
Report led to Department of Justice recommendations for conducting photo lineups



Why now?

Increasingly cited in court cases





Farahany, J Law Biosciences, 2016

A rare chance to get ahead of the curve

Proposal: a consensus report to provide policy makers, judges, prosecutors, and agencies with guidance on:

- The current status of neuroforensic methods
- Likely developments over the next decade
- Recommendations on standards to be met before neuroforensic evidence can be used in the judicial system