


**LIFESAVERS
CONFERENCE
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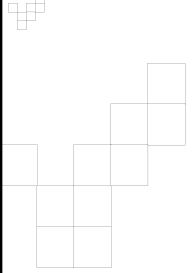
**Technology Applications
to Reduce Impaired
Driving**

Moderator
James C. Fell, Senior Research Scientist
Pacific Institute for Research & Evaluation



Speakers

- ❖ Officer Jayme Derbyshire, Montgomery County (MD) Police Department
- ❖ Kate Lavery, Assistant District Attorney, Hamilton County (TN)
- ❖ David Kelly, Executive Director, Coalition of Ignition Interlock Manufacturers

 **Underutilized
Current
Technology**

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 **How Can We Increase the
Detection of Alcohol
Impaired Drivers?**

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 **Passive Alcohol Sensor**



What are Passive Alcohol Sensors?

- Tool to detect alcohol
- Extension of police officer's nose
- Quick, objective, passive
- Legal, constitutional
- Not PBT or evidential test
- Can detect low levels of alcohol





Passive sensor in use at Fairfax county sobriety checkpoint


Police Detection of High BAC Drivers, With and Without Passive Alcohol Sensors (PAS)

	Percent detected	
	W/O PAS	With PAS
<u>Sobriety checkpoints</u>		
Charlottesville, VA	45	68
Fairfax, VA	55	71
<u>Routine patrol</u>		
Columbus, OH	69	77
<u>Special DUI patrol</u>		
Chattanooga, TN	88	94




Technology for Convicted DWI Offenders


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Alcohol Ignition Interlocks



- Reduces DWI recidivism by about 65% for offenders with interlocks (who sometimes use alternative vehicles) compared to similar offenders who did not get the interlock.
- Reduces recidivism by 70% for first time DWI offenders (on, then off).
- Reduces recidivism by 55% for multiple DWI offenders (on, then off).
- If installed on all vehicles of offenders, would probably prevent 95% of DWI behavior during installation period.



Alcohol Ignition Interlocks: Current Penetration



- about 305,000 installed in vehicles today in the United States.
- 1,400,000 drivers arrested for DWI each year.
- 1,000,000 – 1,200,000 drivers convicted of DWI each year.
- 25% – 30% penetration on DWI offenders.
- 300,000 – 400,000 convicted offenders are repeat offenders
- possible 75% penetration of repeat offenders

Factors Limiting the Penetration and Effectiveness of Interlocks

- Offender claims no car
- Offender drives non-interlock-equipped car
- Offender drives while license is suspended (invisible offense)
- Reluctance of some courts to mandate the interlock
- Limited DMV resources to monitor installation of interlock and to follow up

How Can We Monitor Offenders Who Are Court Ordered to Remain Abstinent?

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Transdermal Alcohol Monitoring (TAM)



Product of Alcohol Monitoring Systems Inc.

SMART START IN-HOM™



**Future
Technology**

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**How can we monitor
driving with a
suspended license?**

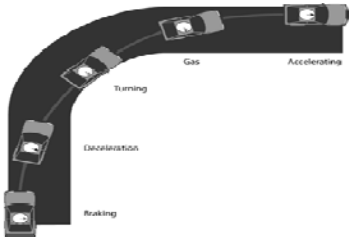
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NO-DRIV Solution




- Sensing and surveillance technology consisting of ankle mounted sensors which monitor individuals with suspended, revoked or restricted licenses
- Uses motion technological developments (gyros, accelerometers) in electronic offender monitoring
- Sensors detect unique driving motions and the system records driving activity
- Data is periodically downloaded and provided to law enforcement agencies to ensure that individuals comply with license sanctions and restrictions

Sample of Driving Detection Algorithm



Driver Alcohol Detection System for Safety [DADSS]

- Funding from the government and auto industry

Two Prototypes being developed:

- Tissue Spectrometry – touch-based system using near infrared to identify BAC in the dermis
- Breath-Based – Infrared spectroscopy sensors measure BAC in driver's breath only (not passenger)

- Objective: Reliable system to be standard in all vehicles in the future (~10 years). Vehicle will not start if driver BAC is over the illegal limit



In the Future.....

- DWI convicted offenders offered the Interlock (prevents drinking and driving)
- If offender claims no car, they are offered a TAM ankle bracelet (e.g. SCRAM) or in-home breath testing (e.g. IN-HOM) as an alternative (prevents drinking)
- If offender promises not to drive while license is suspended, offender is required to wear the ankle bracelet (e.g. NO-DRIV) (prevents driving)



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