**Problem:** Breathalyzers are not ubiquitous and are primarily used by law enforcement only after a drunk individual is caught behind the wheel.

**Goal:** We are developing a smartphone app that can estimate a person’s blood alcohol level (BAL), which can be used to prevent drunk driving or incent good behavior. The app includes the challenging human performance tasks listed below.

**Protocol**

The study is a 5 day procedure. Each day, participants perform the tests twice: once while sober and once at an increasing BAL

<table>
<thead>
<tr>
<th>Day</th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAL</td>
<td>0.00</td>
<td>0.02</td>
<td>0.04</td>
<td>0.06</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Our protocol helps us control the three variable factors that affect human performance on our tasks:

- Fatigue
- Learning
- Inebriation

![Graph showing performance drop due to alcohol](image)

**Tests**

- Typing
- Speech
- Swiping
- Coordination
- Simple Reaction
- Choice Reaction