**Hints for Crime Solvers**

(High School Science Teachers)

**Crime Scene # 1 Hotel Jumper**

1. Take your measurements of the model (height of floors) and distance of body and pool from the bottom of the building.
2. Convert to units of meters.
3. Calculate the velocities Einstein would have acquired, jumping from a range of floors. With the information given to you by the medical examiner, which floor did Einstein leave from?
4. How long was Einstein actually in free fall?
5. With that information and the location of the body, what would Einstein’s horizontal velocity be? Was he pushed or did he run?

**Crime Scene # 2 Gangster Shooting**

You will need the shoulder exit velocities of each bullet, the time in flight to the wall and then the distance each “fell” while in flight. Who shot him? Good luck!

**Crime Scene # 3 Road Rage**

To determine if Evelyn is telling the truth you need to determine if she applied her brakes and slowed down before the car left the bridge. You need to calculate:

1. her original speed in m/s;
2. the speed at which she hit the guard rail, with and without braking;
3. the speed after going through the guard rails (with and without braking);
4. how long she was in the air (time of free fall);
5. distance she would have landed from the bridge which depends on her speed and time of free fall;
6. compare to actual distance by measurement of model.