

1145-R1-1026      **Albert W Schueller\*** ([schuelaw@whitman.edu](mailto:schuelaw@whitman.edu)), 345 Boyer Ave, Walla Walla, WA 99362. *Using Smartphone Sensors in Applied Math.*

Smartphones are ubiquitous. They are also a rich source of real data that can be used as motivating examples for students in applied math subject areas. We discuss two examples and invite others to suggest their own ideas for how to incorporate GPS, accelerometer, g-Force, gyroscope and other smartphone data into their curricula. In both examples, we will demonstrate the use of python to analyze and extract information from raw phone sensor data. The first example involves finding the fastest one-mile segment in a GPS recording of one of the author's exercise runs. The second example involves analyzing accelerometer data using discrete Fourier transforms to determine whether an unknown exercise activity is running or walking.

Through these examples, we illustrate the importance of the interplay between theoretical and numerical mathematics. That interplay is an essential component of the process of bringing programming and computing into the mathematics major. (Received September 18, 2018)