StudentLife Study

Assessing Mental Health, Academic Performance and Behavioral Trends of College Students using Smartphones
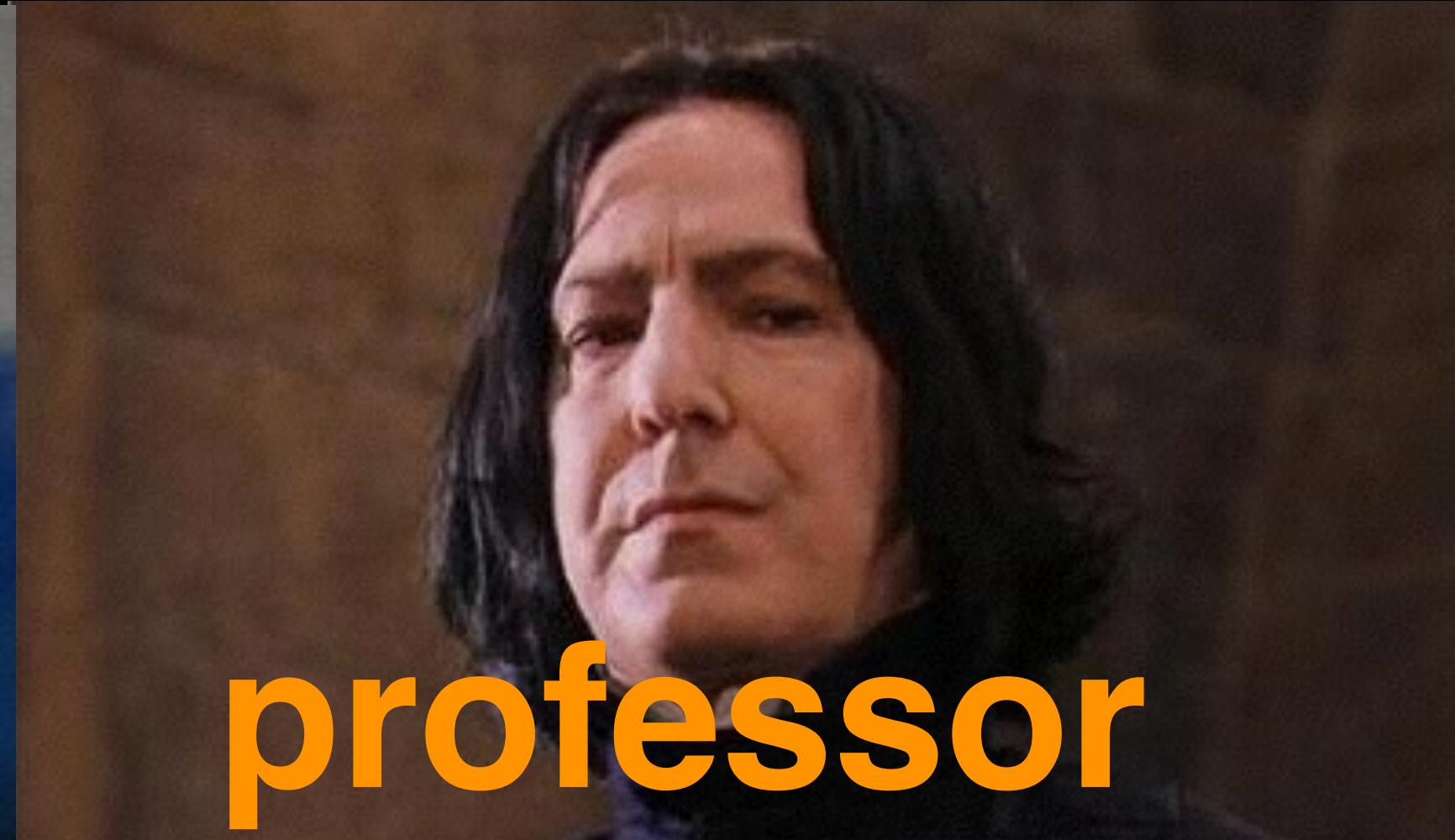
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Gabriella Harari (University of Texas at Austin), Stefanie Tignor (Northeastern)

the stakeholders

much of the stress and strain of student life remains hidden

why do students burnout, drop classes, do poorly, even drop out of college when others excel?

what is the impact of stress, mood, workload, sociability, sleep and mental health on academic performance?

is there a set of behavioral trends or signature to the Dartmouth term

StudentLife study

48 students over 10 week Spring 2013 term
- 10 female, 38 male
- 30 undergraduates, 18 graduates
- 8 seniors, 14 juniors, 6 sophomores, 2 freshmen, 3 Ph.D students, 1 second-year Masters student, and 13 first-year Masters students
- 23 Caucasians, 23 Asians and 2 African-Americans.
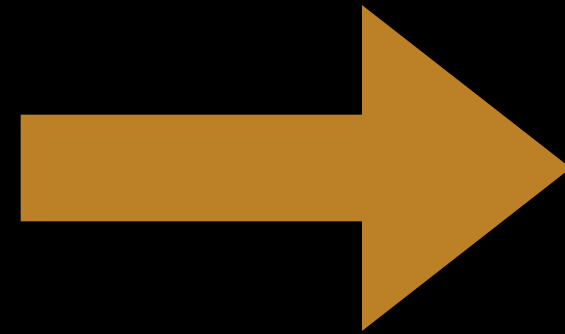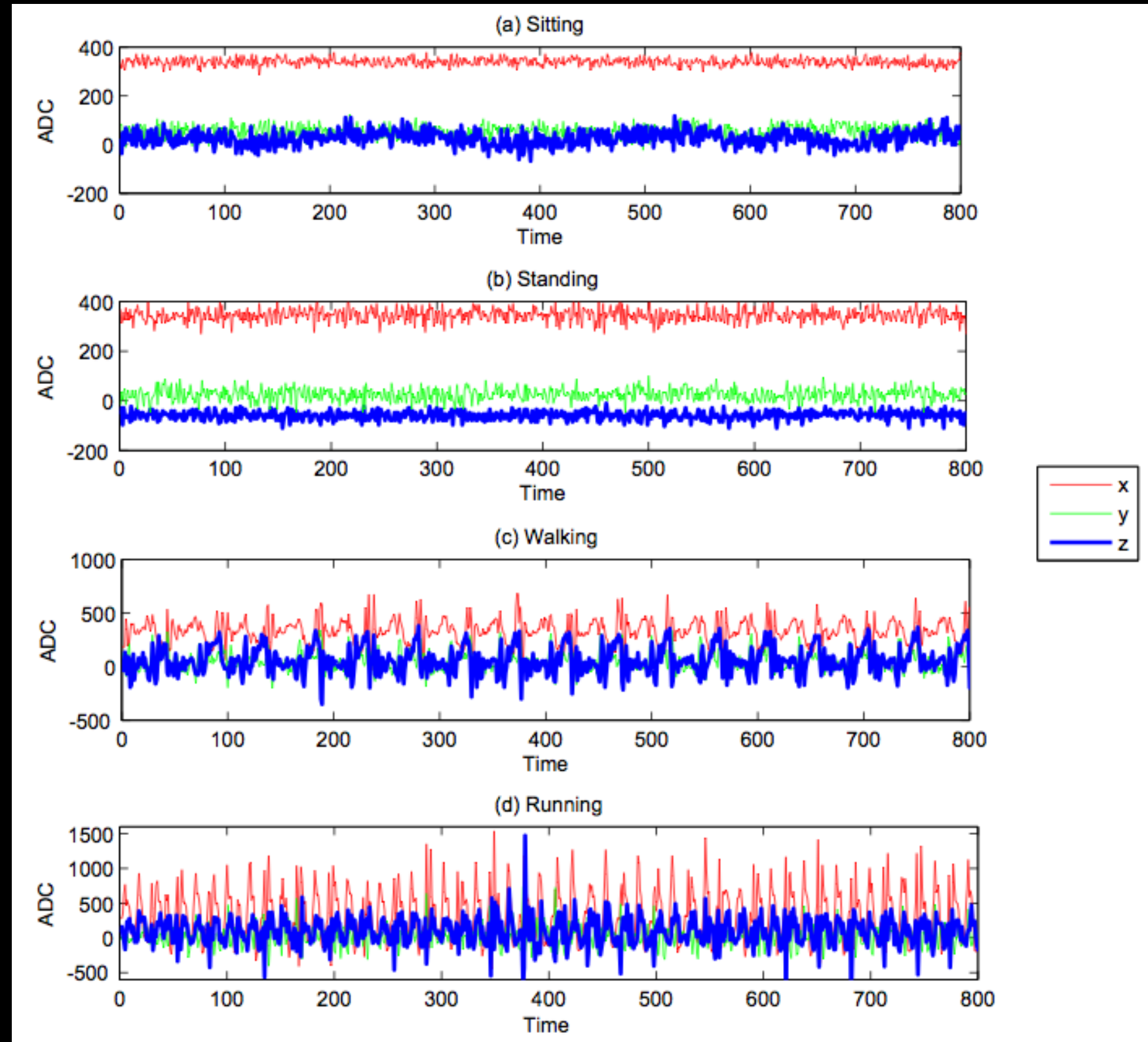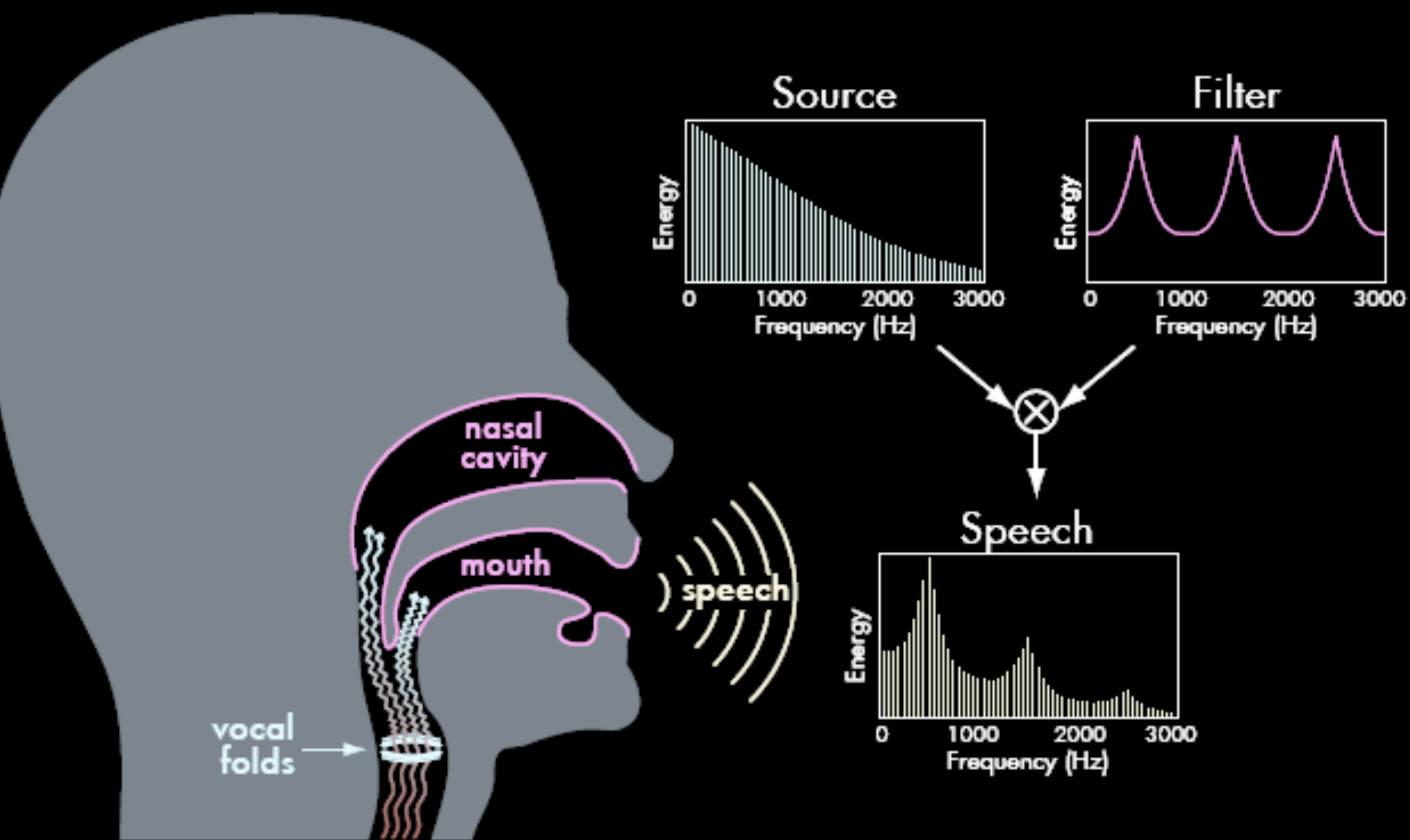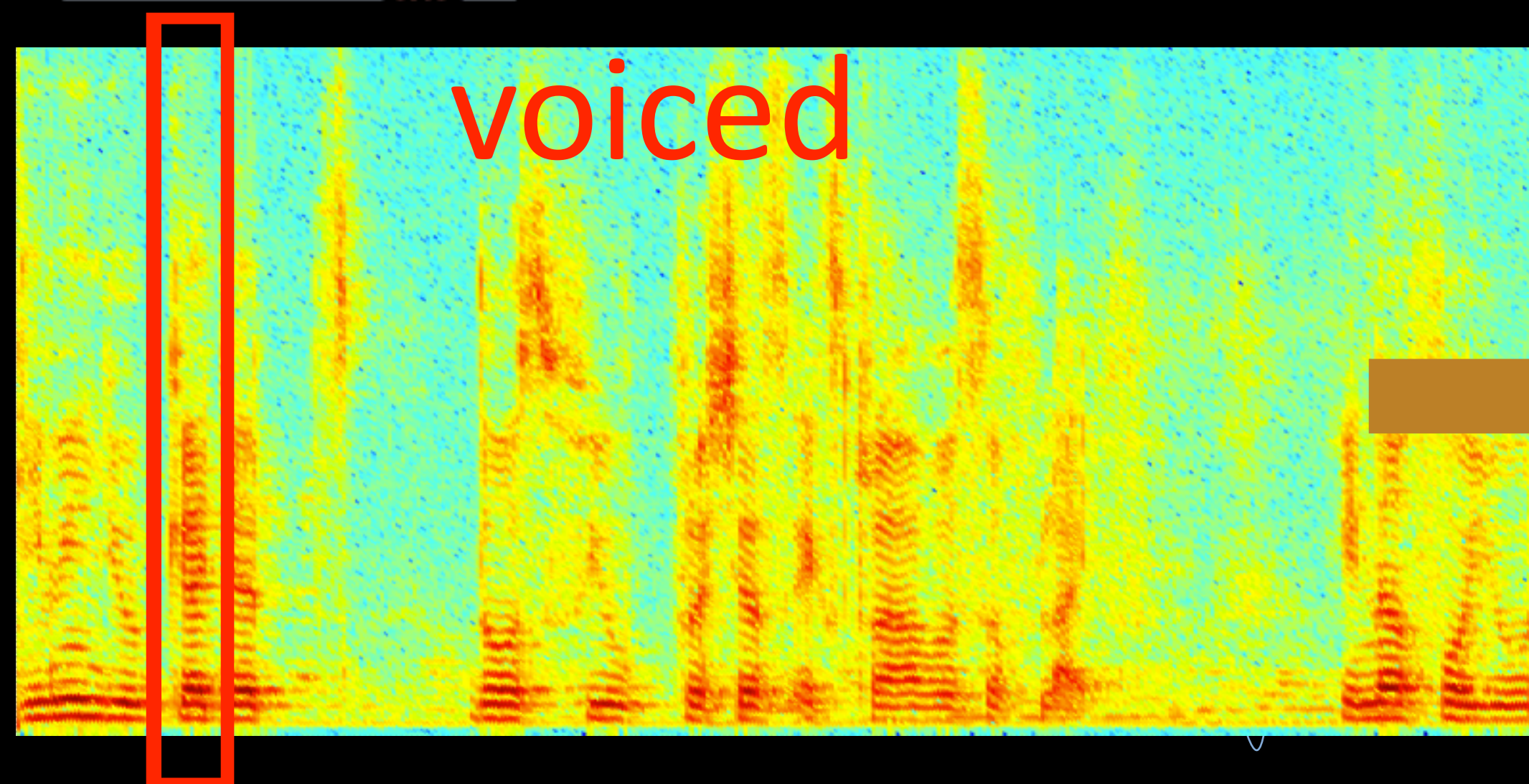
sensing system
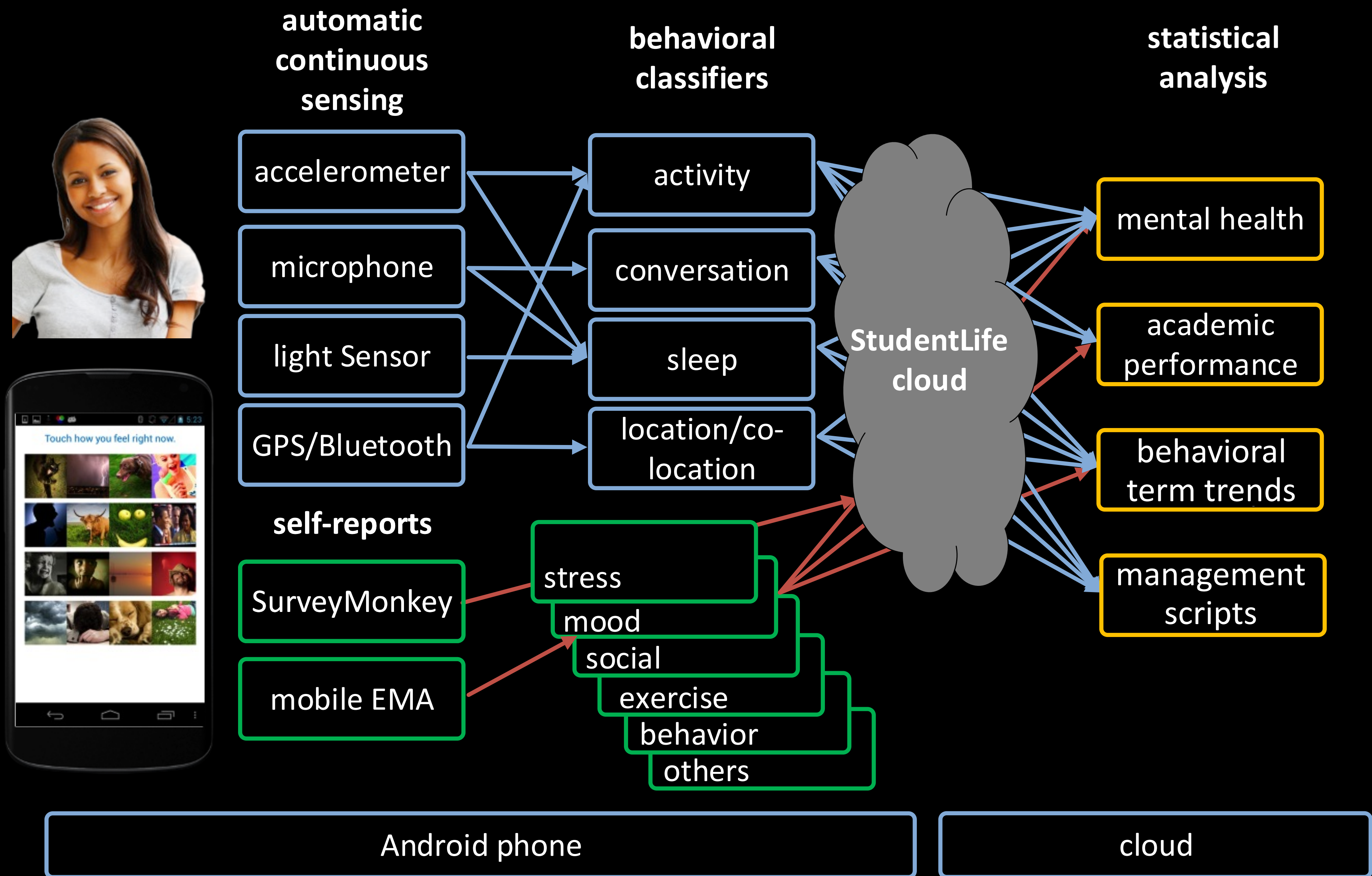
classifiers

activity

sitting

standing

walking

running

around conversation

voiced
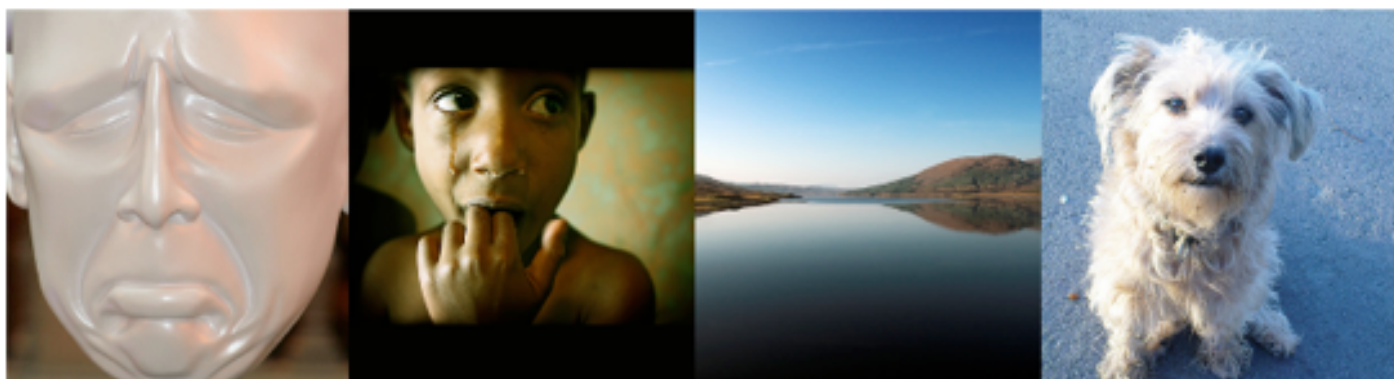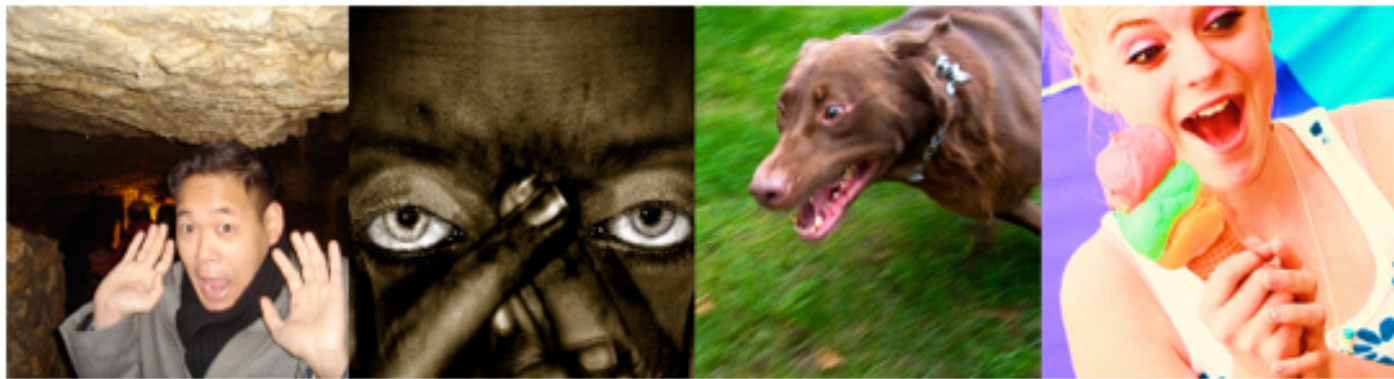
conservation duration and frequency

we also computed

- activity duration
- outdoor mobility
- indoor mobility
- location and co-location

ecological momentary
assessment (ema)

Touch how you feel right now.

Stress

Right now, I am...

A little stressed ▼

A little stressed
Definitely stressed
Stressed out
Feeling good
Feeling great

Save Response

mental health surveys

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME:_____ DATE:_____

Over the last 2 weeks, how often have you been bothered by any of the following problems?
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0			
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0			
7. Trouble concentrating on things, such as reading the newspaper or watching television	0			
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so figety or restless that you have been moving around a lot more than usual	0			
9. Thoughts that you would be better off dead, or of hurting yourself	0			

add colum   TOT

(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card)

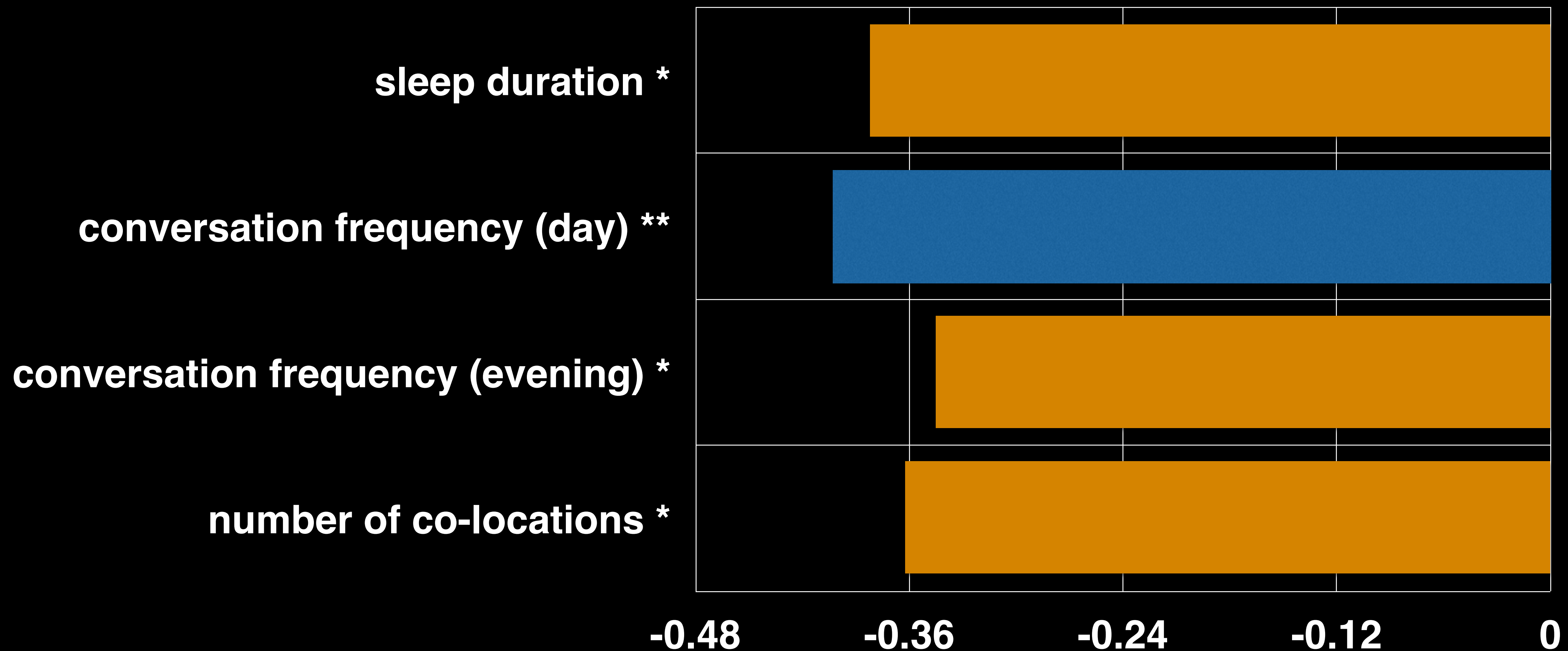| depression severity	minimal	minor	moderate	moderately severe	severe
	1-4	5-9	10-14	15-19	20-27
number of students (pre-survey)	17	15	6	1	1
number of students (post-survey)	19	12	3	2	2

pre-post questionnaires

- depression scale
- perceived stress scale
- loneliness scale
- flourishing scale

mental health
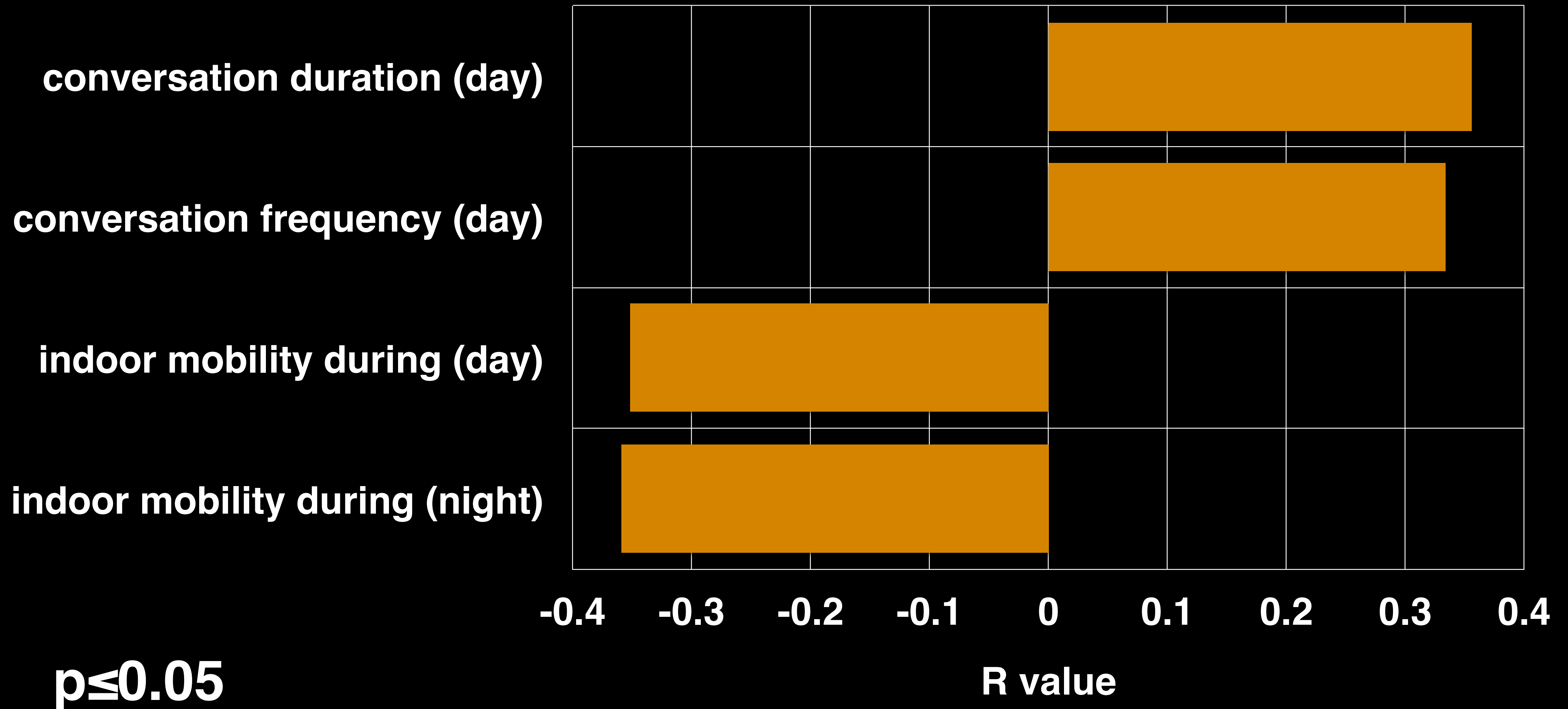
academic performance
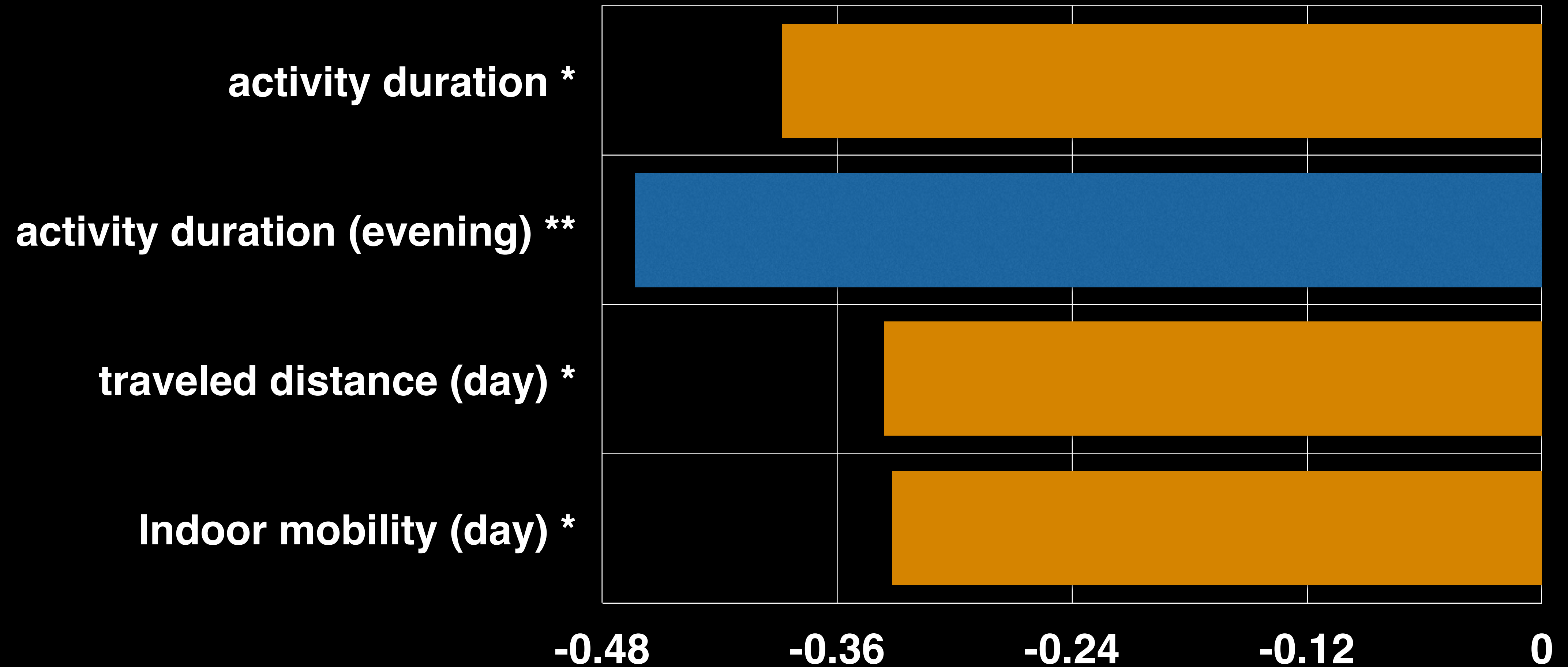
behavioral trends
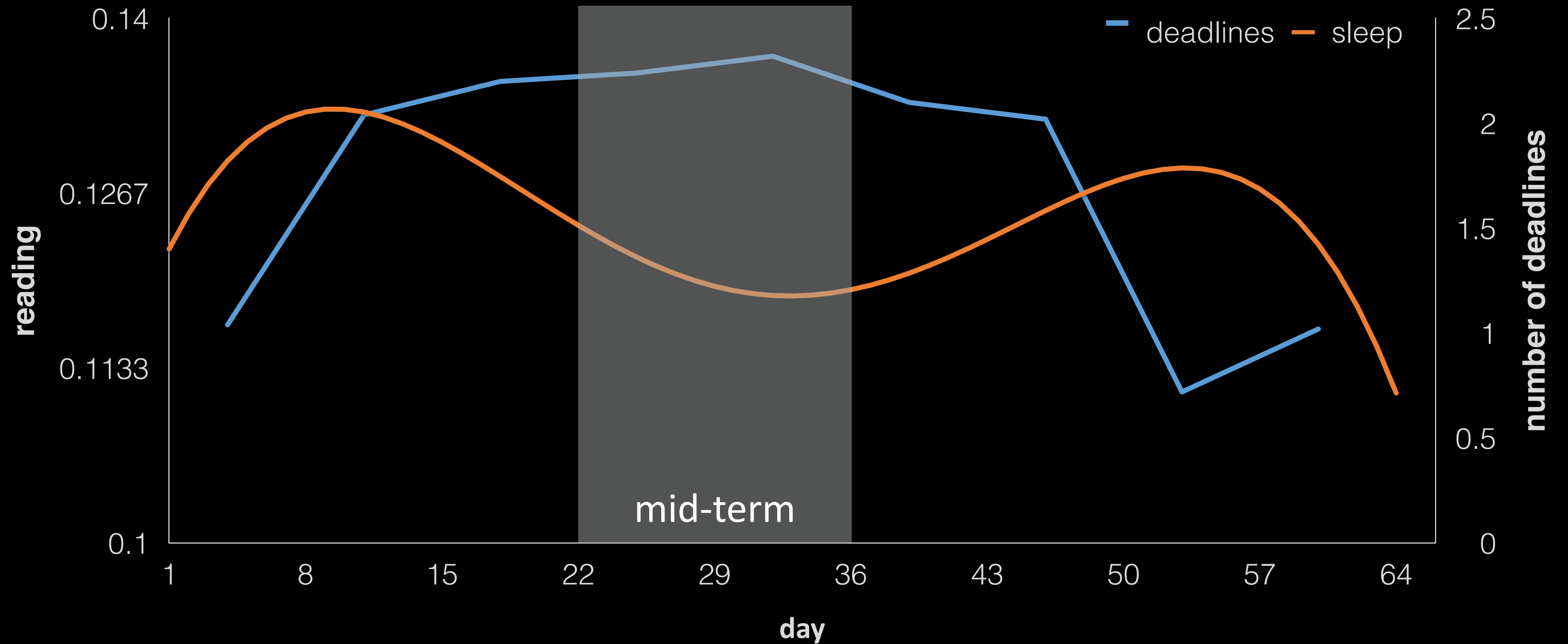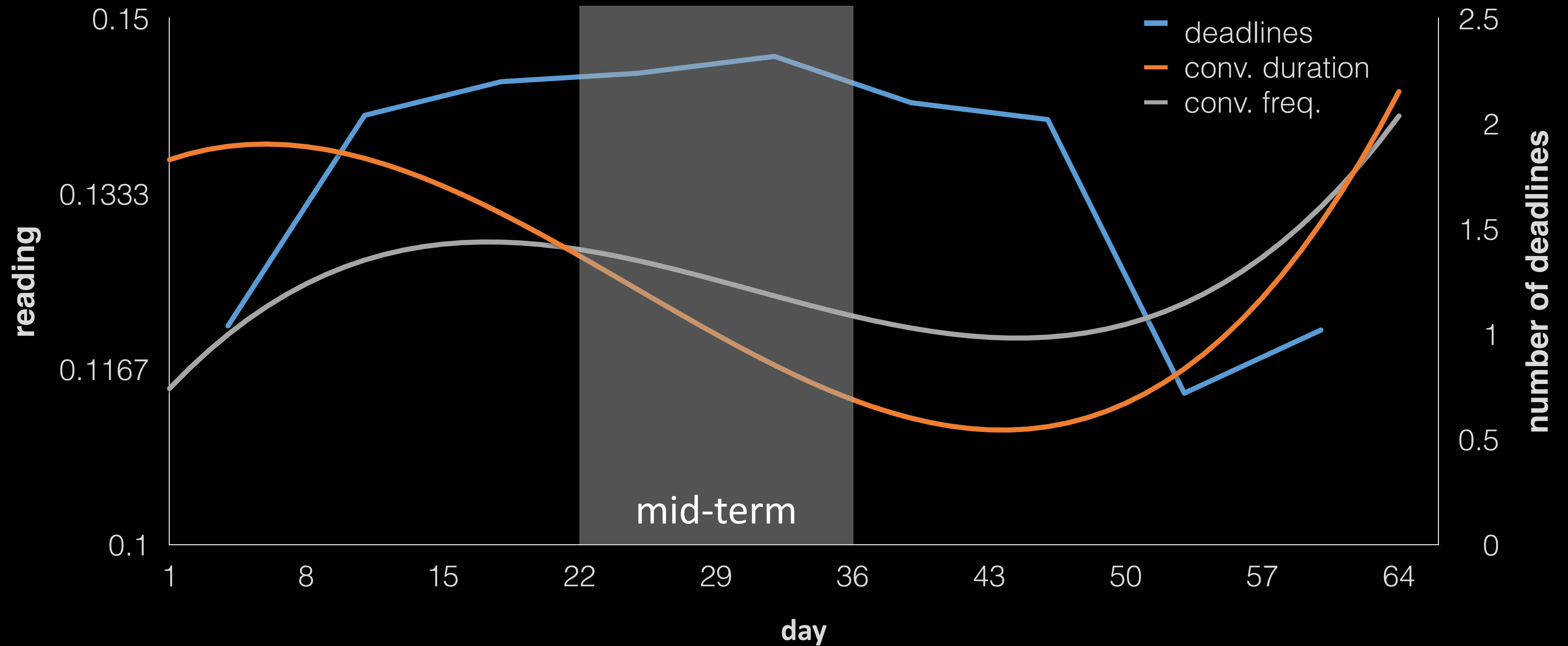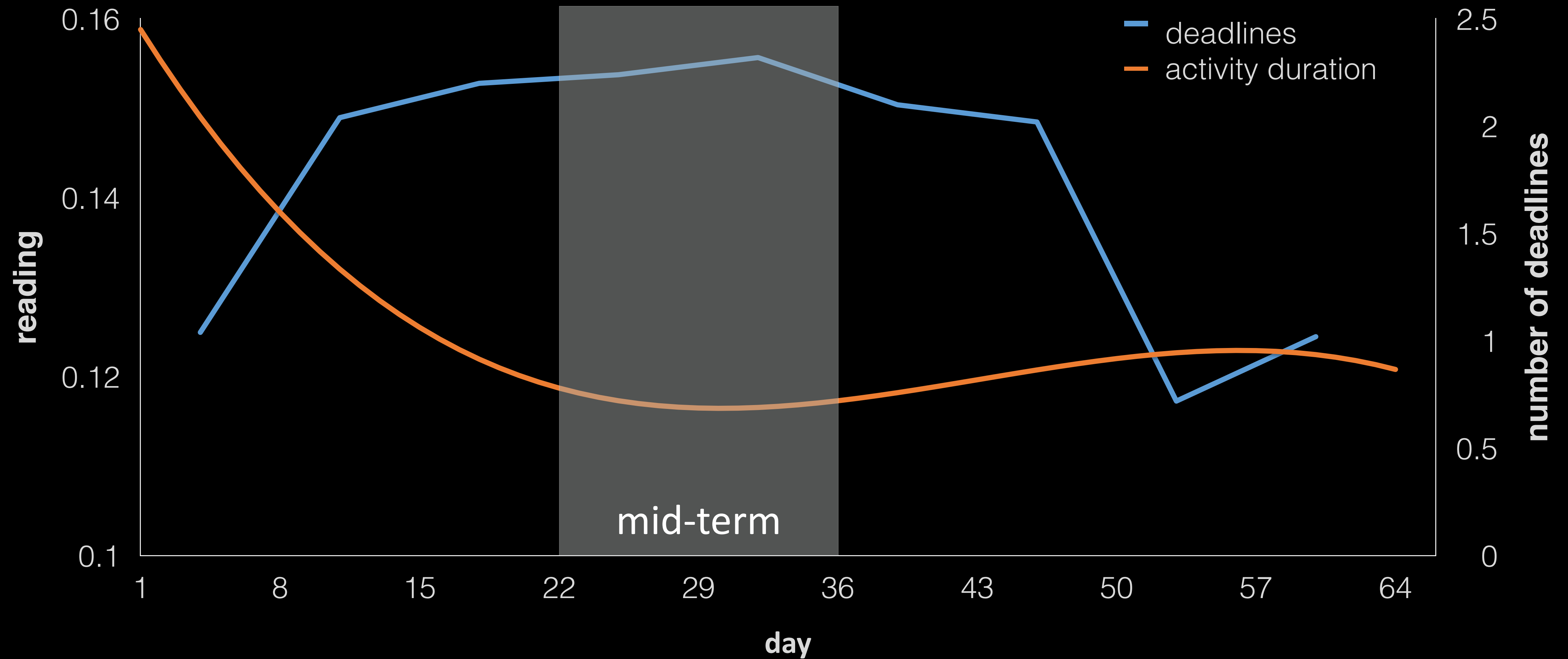
time spent in dorms
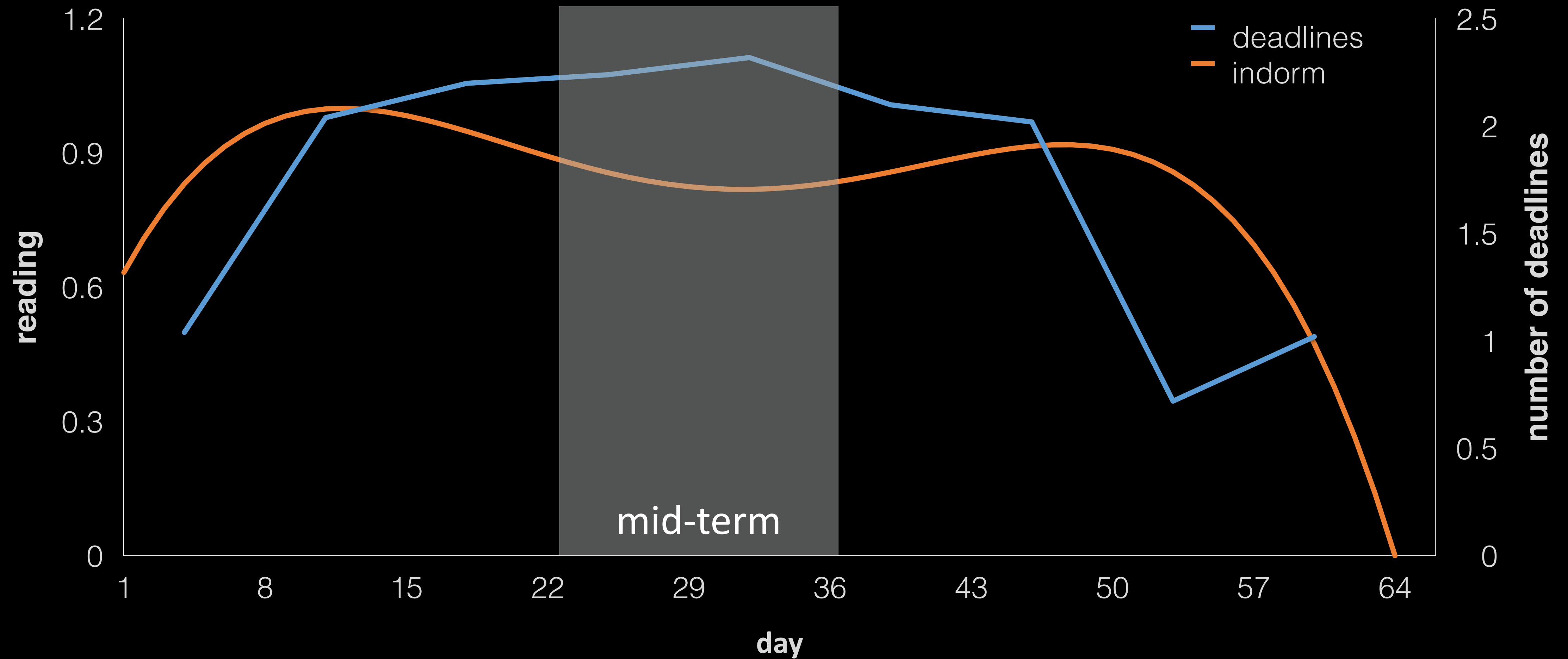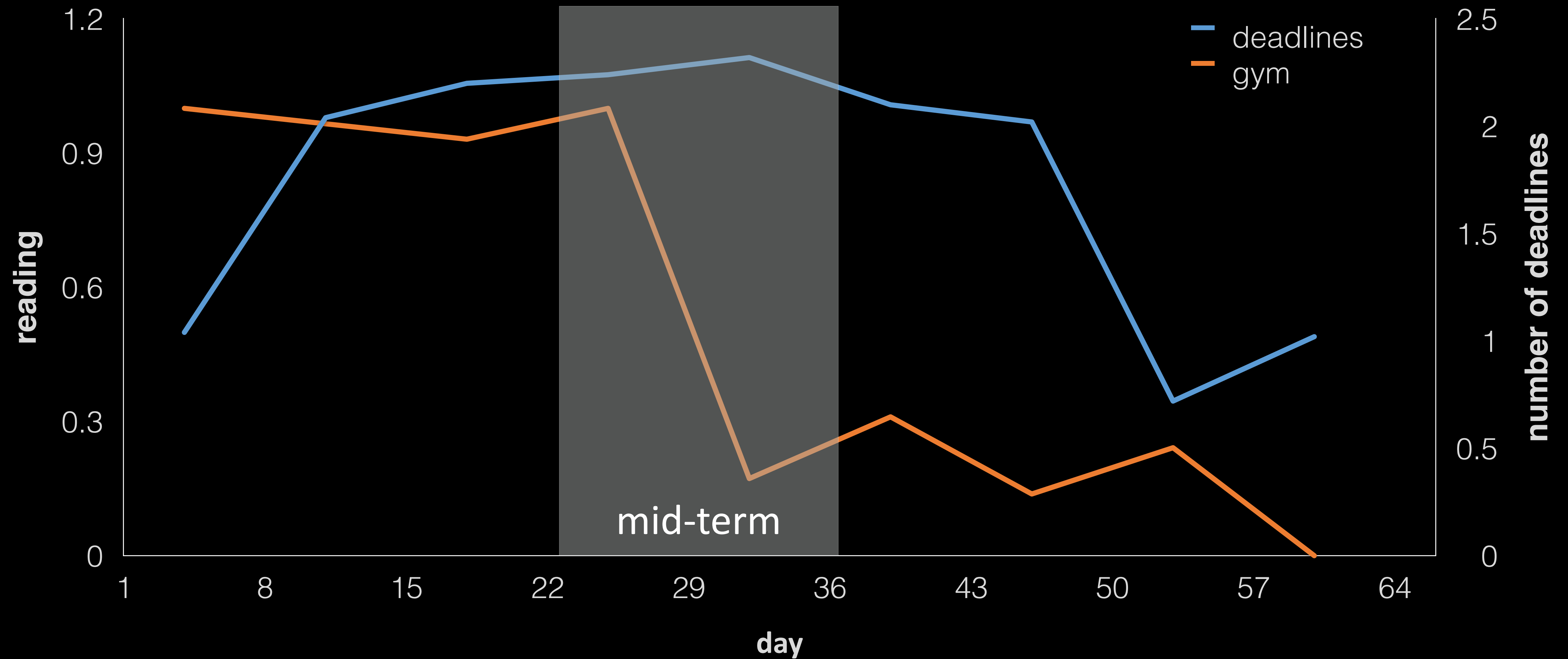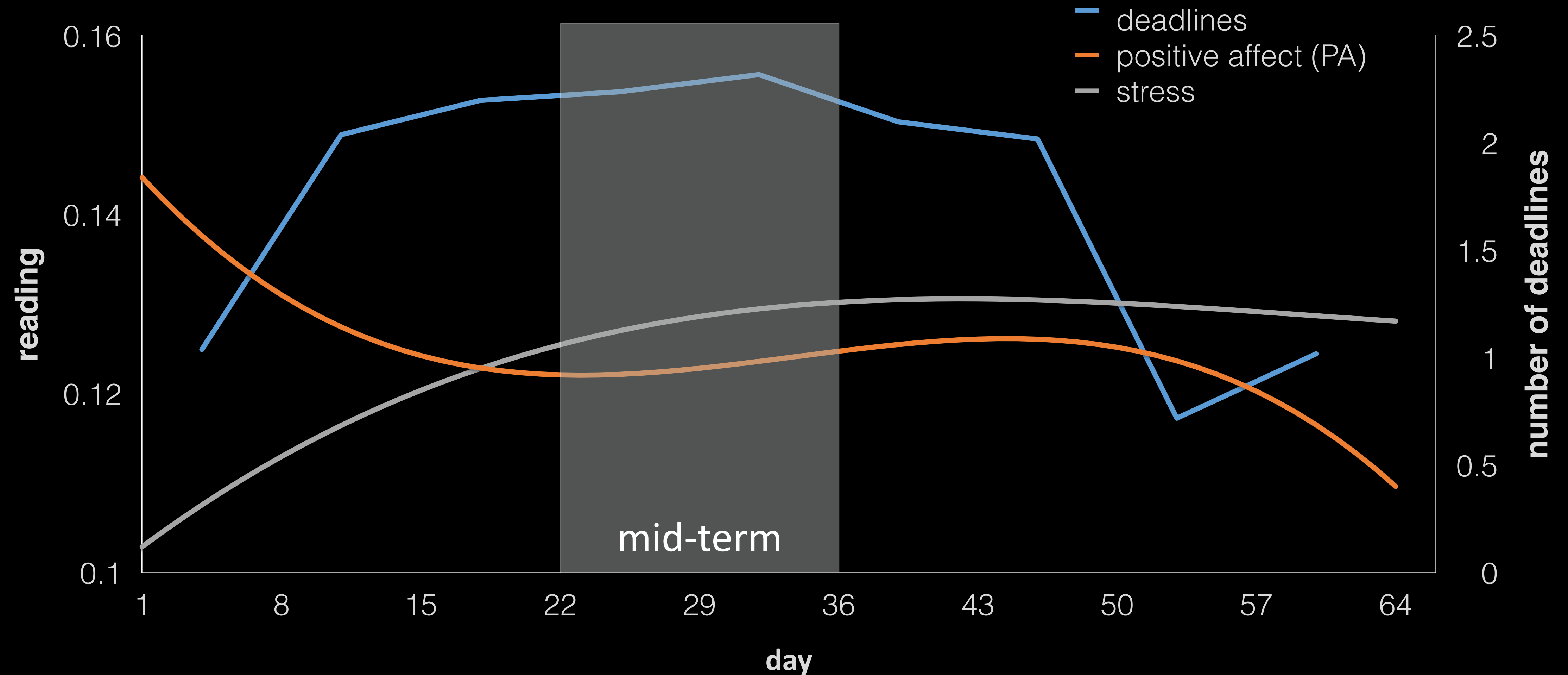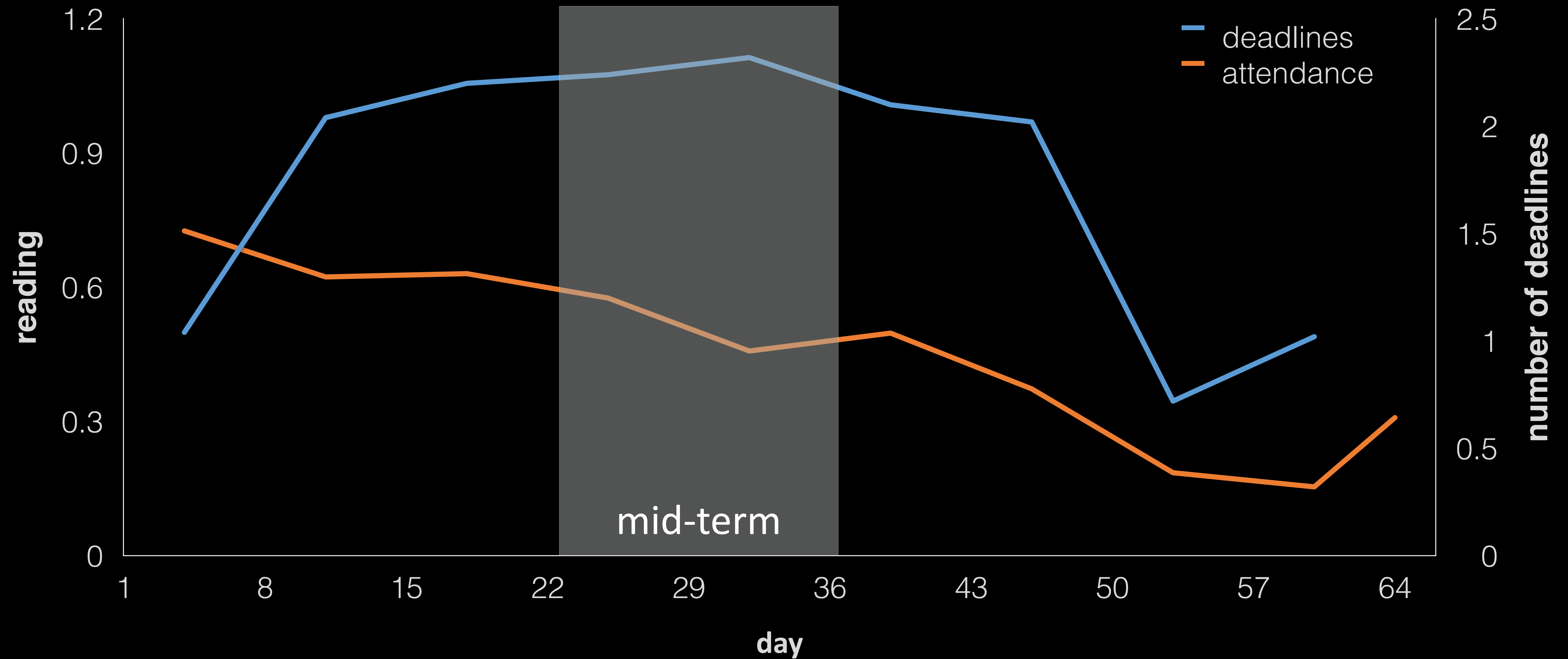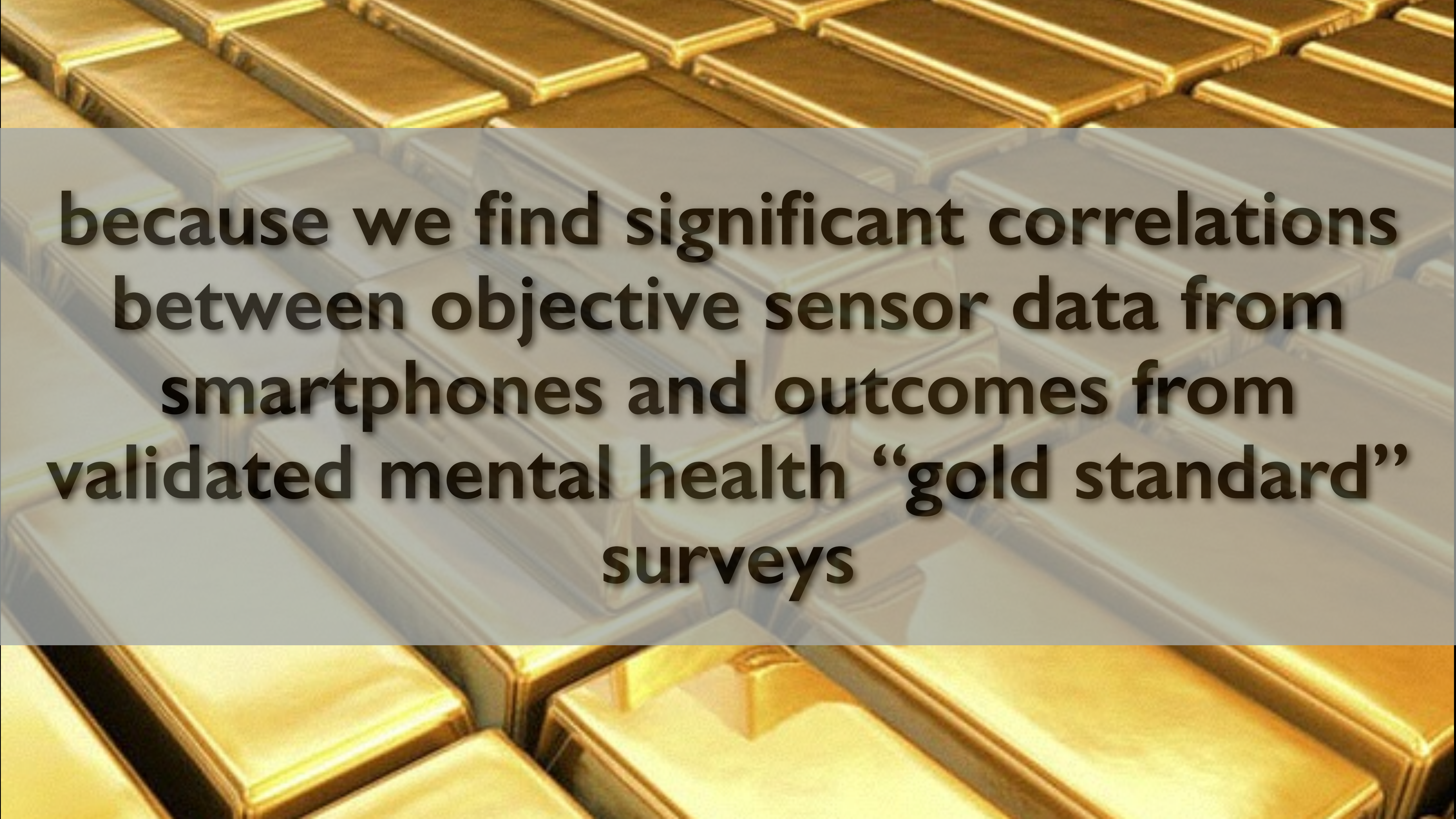
why are these results important?

because we find significant correlations between objective sensor data from smartphones and outcomes from validated mental health "gold standard" surveys

back to the stakeholders

studentlife.cs.dartmouth.edu

StudentLife

StudentLife is the first study that uses passive and automatic sensing data from the phones of a class of 48 Dartmou term to assess their mental health (e.g., depression, loneliness, stress), academic performance (grades across all th cumulative GPA) and behavioral trends (e.g., how stress, sleep, visits to the gym, etc. change in response to colleg

Big thanks

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Catherine Norris (Swarthmore)

The End