



# **Questionnaire and Time-activity Diary (TAD)**

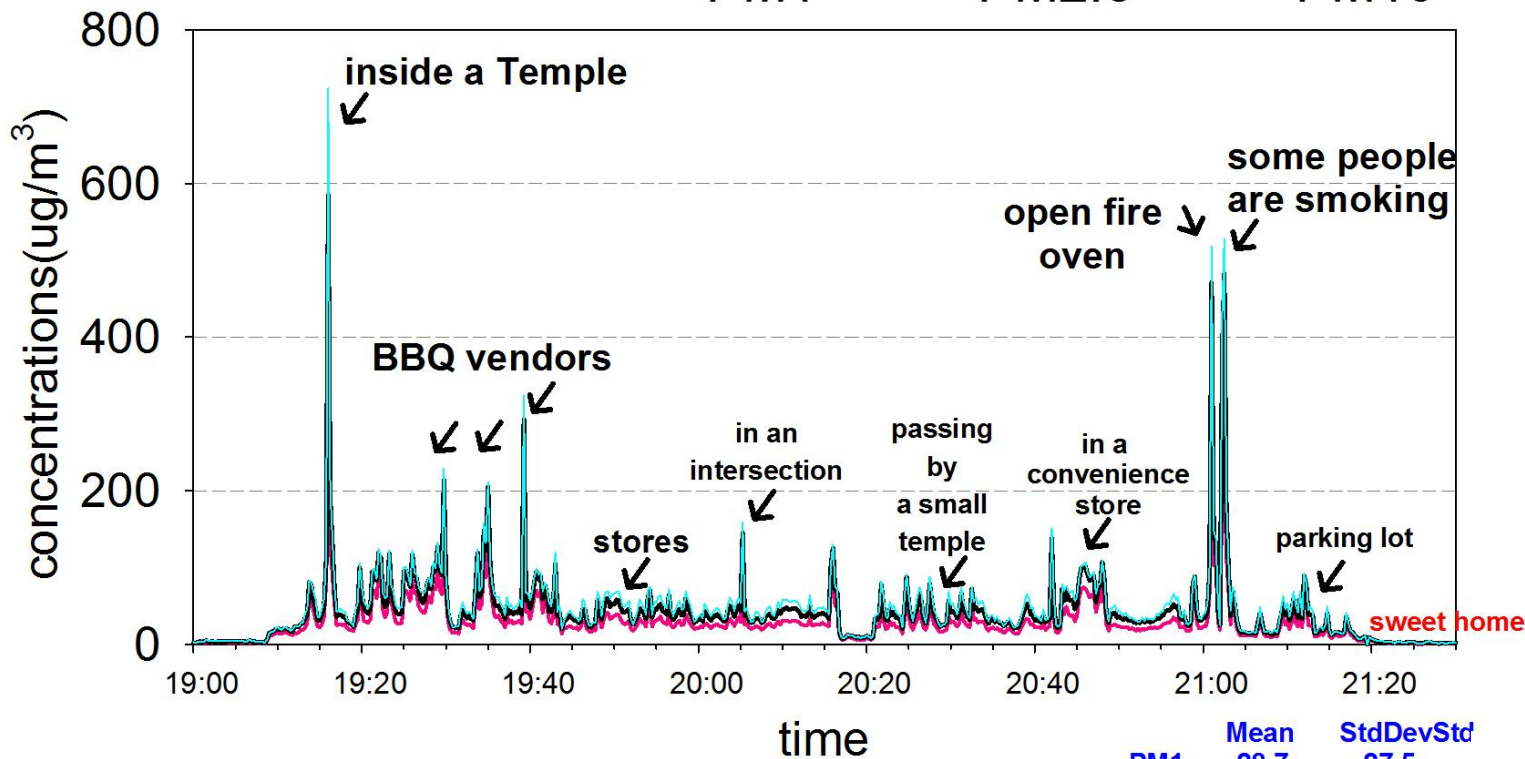
**SC Candice LUNG**

# The importance of Questionnaire and Time-activity Diary (TAD)

- Find out the **important factors** that influence subject's  $\text{PM}_{2.5}$  exposure concentrations
- **Truthfully record** what happened
- Find out some **factors** or truth **unveiled** in subject's exposure patterns

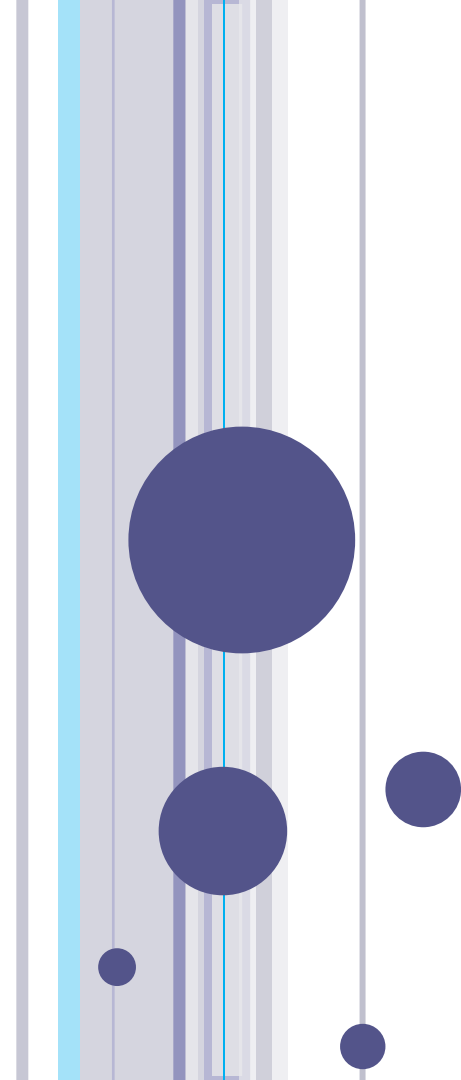
# July 4, 2017, Taipei night market AS-LUNG sampling rate: every 15 seconds

— PM1 — PM2.5 — PM10



■ Unadjusted PM concentrations

	Mean	StdDevStd
PM1	28.7	27.5
PM2.5	42.4	48.1
PM10	47.9	54.1



**Questionnaire with core  
questions will be provided later.  
Here are some examples.**

# Questionnaire-cover



2013

## Impact of Heat Wave on Individual and Community

↓

↓

↓

↓

↓

All responses given will be used for academic research only.

↓

Any personal information provided will be kept strictly confidential.

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↓

↓

↓

..... @ Interviewer No.: .....

..... @ Subject No.: .....

.....

Interview time and date at: → → → →

(00:00-24:00) → (DAY) → (MONTH) → (YEAR)

# Questionnaire-section A



## A → Demographic questions

↵

A1.→ Sex : ☐ (01) Male · ☐ (02) Female · ↵

↵

A2.→ In which year were you born? ? ..... ↵

..... ↵

A3.→ What is your ethnicity? → ↵

☐ (01) Taiwanese Hokkien ↵

☐ (02) Taiwanese Hakka ↵

☐ (03) Mainland Chinese ↵

☐ (04) Taiwanese Aborigines ↵

☐ (05) Other (Please specify) ..... ↵

↵

A4.→ What is the highest degree or level of education you have completed? · ↵

☐ (01) None/illiterate ↵

☐ (02) Elementary school ↵

☐ (03) Junior/Vocational junior high school ↵

☐ (04) Senior/Vocational senior high or Army academy ↵

☐ (05) Junior college ↵

☐ (06) University or Institute of Technology ↵

☐ (07) Graduate school ↵

☐ (08) Other (Please specify) ..... ↵

↵

A5.→ What is your present marital status? ·· **(Cue card 1)** ↵

☐ (01) Single and never married ↵

☐ (02) Cohabiting ↵

# Questionnaire-section B



## B → Questions of your condition from June this summer ↵

↵

B1. → On hot days outdoors, how often do you use sunshades (umbrella or hats)? ↵

- ☐ (01) Always ↵
- ☐ (02) Often ↵
- ☐ (03) Sometimes ↵
- ☐ (04) Seldom ↵
- ☐ (05) Never ↵

↵

B2. → On hot days outdoors, how often do you apply sunscreen for skin protection? ↵

- ☐ (01) Always ↵
- ☐ (02) Often ↵
- ☐ (03) Sometimes ↵
- ☐ (04) Seldom ↵
- ☐ (05) Never ↵

↵

B3. → How often is your mood affected by hot weather? · (Cue card 3) ↵

- ☐ (01) More than 3 times a week ↵
- ☐ (02) 1-2 times a week (or 4-11 times a month) ↵
- ☐ (03) 1-3 times a month ↵
- ☐ (04) Less than once a month ↵
- ☐ (05) Never ↵

↵

B4. → How often is your work efficiency affected by hot weather? · (Cue card 3) ↵

- ☐ (01) 3 times or more a week ↵
- ☐ (02) 1-2 times a week (or 4-11 times a month) ↵

# Questionnaire-section C



## C → Neighborhood environment

C1. → Which of the following is found within a radius of 15 m from your residence?

- ☐ (01) Roads, elevated highways or freeways with heavy traffic
- ☐ (02) Restaurants or street food vendors that produce smoke and grease (Go to C5)
- ☐ (03) Both of the above
- ☐ (04) None of the above (Go to C5)

C2. → How often does traffic jam occur on roads, elevated highways/freeways with heavy traffic during rush hours?

- ☐ (01) Always
- ☐ (02) Often
- ☐ (03) Sometimes
- ☐ (04) Seldom
- ☐ (05) Never

C3. → Which of the following is found within a radius of 50 m (1-min walking distance) from your residence?

(Multiple choices allowed) (Cue card 9)

- ☐ (01) Temples with incense burning during worship
- ☐ (02) Traditional/wet market
- ☐ (03) Night market (with at least 10 vendors or stores) open daily or at least once a week
- ☐ (04) Stores or factories that produce unpleasant (peculiar) smell or dust  
(e.g., laundromat or vehicle repair shop)
- ☐ (05) None of the above



# Questionnaire-section D

## D → Personal daily habits or activities

D1. → How often do you clean your residence yourself? (Cue card 11)

- ☐ (01) 3 times or more every day
- ☐ (02) 2 times every day
- ☐ (03) Once a day
- ☐ (04) 3-6 times a week
- ☐ (05) 1-2 times a week
- ☐ (06) 1-3 times a month
- ☐ (07) Less than once a month
- ☐ (08) Never (Go to D4)

D2. → How long on average each time? ..... hr. .... min.

D3. → How do you usually clean your residence? (Refer mainly to the living room or the place of activity)

- ☐ (01) Mop first and then sweep
- ☐ (02) Just sweep, no mopping
- ☐ (03) Use dry vacuum cleaner
- ☐ (04) Use wet and dry vacuum cleaner
- ☐ (05) Sweep first and then mop
- ☐ (06) Other (Please specify) .....

D4. → Are you the one mainly responsible for cooking?

- ☐ (01) No
- ☐ (02) Yes (Go to D5)
- ☐ (03) Never cook at home (Go to D6)

# Questionnaire-section E (optional)

## E → Interpersonal interaction

E1. → How many people do you come into contact with throughout an ordinary day?

(including people you talk with, phone, write letters to or communicate with via the internet whether you know them or not.)

☐ (01) 0-4 → . . . . .

☐ (02) 5-9

☐ (03) 10-19

☐ (04) 20-49

☐ (05) 50-99

☐ (06) 100 or more

E2. → Among these people, roughly how many live in your neighborhood?

☐ (01) Almost all

☐ (02) Most of them

☐ (03) Around half

☐ (04) Few of them

☐ (05) Almost none

E3. → Among all your neighbors, roughly how many are you more familiar with? . . . . .

(If the response is '0', go to E5)

E4. → Among those you are more familiar with, roughly how often would you get together for a chat in the past year?

☐ (01) Almost every day

☐ (02) At least once a week

# Questionnaire-section F (optional)



## F → Community involvement

F1. → Are you currently a member of the following community organizations or local associations?

Are you actively or rarely involved? (Cue card 15)

	Yes, actively involved	Yes, but rarely involved	No, but actively involved	No, never involved
a. → Social service/charity (incl. environment-related)	<input type="checkbox"/> 01	<input type="checkbox"/> 02	<input type="checkbox"/> 03	<input type="checkbox"/> 04
b. → Travel & Leisure, Sports & Games	<input type="checkbox"/> 01	<input type="checkbox"/> 02	<input type="checkbox"/> 03	<input type="checkbox"/> 04
c. → Religious groups	<input type="checkbox"/> 01	<input type="checkbox"/> 02	<input type="checkbox"/> 03	<input type="checkbox"/> 04
d. → Arts & Culture	<input type="checkbox"/> 01	<input type="checkbox"/> 02	<input type="checkbox"/> 03	<input type="checkbox"/> 04
e. → Recreational/Fraternal (incl. clan or alumni groups)	<input type="checkbox"/> 01	<input type="checkbox"/> 02	<input type="checkbox"/> 03	<input type="checkbox"/> 04

F2. → Apart from those listed above, are you currently a member of any other community organizations or local associations? Are you actively or rarely involved?

- ☐ (01) Yes, actively involved
- ☐ (02) Yes, but rarely involved
- ☐ (03) No, but actively involved
- ☐ (04) No, almost never involved

# Questionnaire-section G (optional)



## G → Access to information ↵

↵

G1. → On average, how many days in a week would you read newspapers (hardcopy, including those distributed at MRT station) ↵

..... day(s) ↵

↵

G2. → On average, how many days in a week would listen to radio broadcast? ↵

..... day(s) ↵

↵

G3. → On average, how many days in a week would you watch TV ↵

..... day(s) (If the answer is '0', go to G4) ↵

(What about listing the choices?) ↵

G3\_1. How long each day? ..... hr ..... min ↵

↵

G4. → On average, how many days in a week would you go on the internet? (including using various devices such as smart phone, laptop and the like.) ↵

# Questionnaire-section H



## H → Personal health and social status ↵

↵

H1. → What is your height? ..... cm ↵

What is your weight? ..... kg ↵

↵

H2. → On the whole, how do you consider your physical health? ↵

☐ (01) Very good ↵

☐ (02) Good ↵

☐ (03) Fair ↵

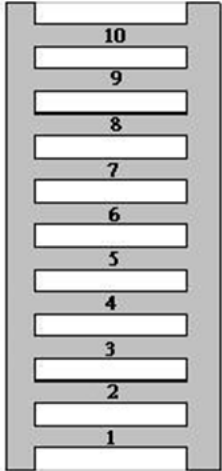
☐ (04) Poor ↵

☐ (05) Very poor ↵

↵

# Questionnaire-section H

H17. On a scale of 1 to 10 with 1 being the bottom and 10, the top, which level would you rank your social status? (Cue card 26)

	TOP	<input type="checkbox"/> (10)	TOP
		<input type="checkbox"/> (09)	
		<input type="checkbox"/> (08)	
		<input type="checkbox"/> (07)	
		<input type="checkbox"/> (06)	
		<input type="checkbox"/> (05)	
		<input type="checkbox"/> (04)	
		<input type="checkbox"/> (03)	
		<input type="checkbox"/> (02)	
	BOTTOM	<input type="checkbox"/> (01)	BOTTOM

# Questionnaire-section H

H20 What is your **personal gross income** per month on average (including your full-time and part-time salary, bonus and allowances, overtime compensation, commission, income from personal business or investments, rent, pension, financial support from parents/children and the like)? **(Cue card 28)**

H21 What is your **family gross income** per month on average (including your full-time and part-time salary, bonus and allowances, commission, interests/dividends, government subsidies, rent, pension and other incomes)? **(Cue card 29)**

- ☐ (01) None
- ☐ (02) NT\$1- NT\$9,999
- ☐ (03) NT\$10,000 - NT\$19,999

# Time-activity Diary (TAD)

## Time-activity Diary (TAD)

Date: [continental time]:20 / / (yyyy/mm/dd)

Subject No.:

Interviewer No.:

Weather code: Sunny, Cloudy, Rainy, Windy

Time (hhmin)	A.		B. Ventil- ation status	C. Activity type		D. Air quality and weather		
	Location			Activity 1	Activity 2	Quality 1	Quality 2	Weather
1900 - 1910	18	16	9	8	6	3	65.sticky tofu	S, W
Set your watch first and write down your environment information below ! Make sure that each blank has been filled with only one right code.								

- Make sure that each blank has been filled with only one code.



# Time-activity Diary (TAD)- Part A codes

## 【Part A:】 Location

### A. Location: Please select where you stay most of the time in this specific period.

#### [Indoor] Space with ceiling, wall or door

- 1. Home
- 2. Office, classroom, cram school, etc.
- 3. Factory (repair car garage, furnishing manufacture, etc.)
- 4. Restaurant (barbecue restaurant, café, fast food restaurant, underground food court, etc.)
- 5. Buddhist Temple, Taoist temple or place in that people worship the god by burning incense
- 6. Hospital or clinic
- 7. Beauty salon, barber shop or massage store
- 8. Other public places (bank, convenience store, etc.)
- 61. None of the above, please write down other indoor locations.

#### [Outdoor] hall, road, outdoors, open ground

- 16. On the road (walking on the road, waiting for bus or traffic light)
- 17. Traditional market
- 18. Night market, fairgrounds, school carnival
- 19. Small market under ten vendors
- 20. Sports field (playgrounds, golf course, etc.)
- 21. Parks, Scenery spot, farm and other outdoor places
- 22. Home exteriors (balcony or loft)
- 23. Outdoor workplace
- 63. None of the above, please write down other outdoor locations.

#### [Vehicles]

- 11. Car, truck, taxi
- 12. Bus
- 13. Underground, tube, subway
- 14. Train
- 16. Walking, wheelchair
- 9. Bike, electric scooter
- 10. Motorcycle, electric locomotive
- 15. Farm, livestock-oriented machine car, engineering train
- 62. Other vehicles, please write down

# Time-activity Diary (TAD)- Part B codes

## 【Part B:】 Ventilation status

### Reminder:

If you choose the indoor selections (marked in green) in part A, please log 1 to 5 in part B.

If you choose the outdoor selections in part A, please only log 9 in part B.

### B. Ventilation status

1. No air-condition, with the doors/windows tightly closed.
2. No air-condition, with the doors/windows partly open.
3. No air-condition, with the doors/windows fully open.
4. Air-conditioned, with the doors/windows tightly closed.
5. Air-conditioned, with the doors/windows partly/fully open.
9. Outdoor, not applicable under the situation.

# Time-activity Diary (TAD)- Part C codes

## 【Part C:】 Activity type

C. Character of Activity: Please choose at most two items as your main activities.

- 1. Sleep, rest, meditation.
- 2. Ways to office, school or destinations.
- 3. At work or in class.
- 4. Cooking or preparing foods.
- 5. Worshipping or chanting.
- 6. Shopping.
- 7. Exercise (physical exercise, athletic video games, outdoors activities, mountain-climbing, bicycle-riding, etc.)
- 8. Eating (meal, dessert)
- 9. Bathing or showering.
- 10. Watching TV, reading, doing homework, playing computer or video games, go to the movies (exhibition, show), party with friends, chatting or other static activities.
- 11. House-working (taking care children or pets, gardening, cleaning, etc.)
- 64. None of the above, please write down other activities.

# Time-activity Diary (TAD)- Part D codes

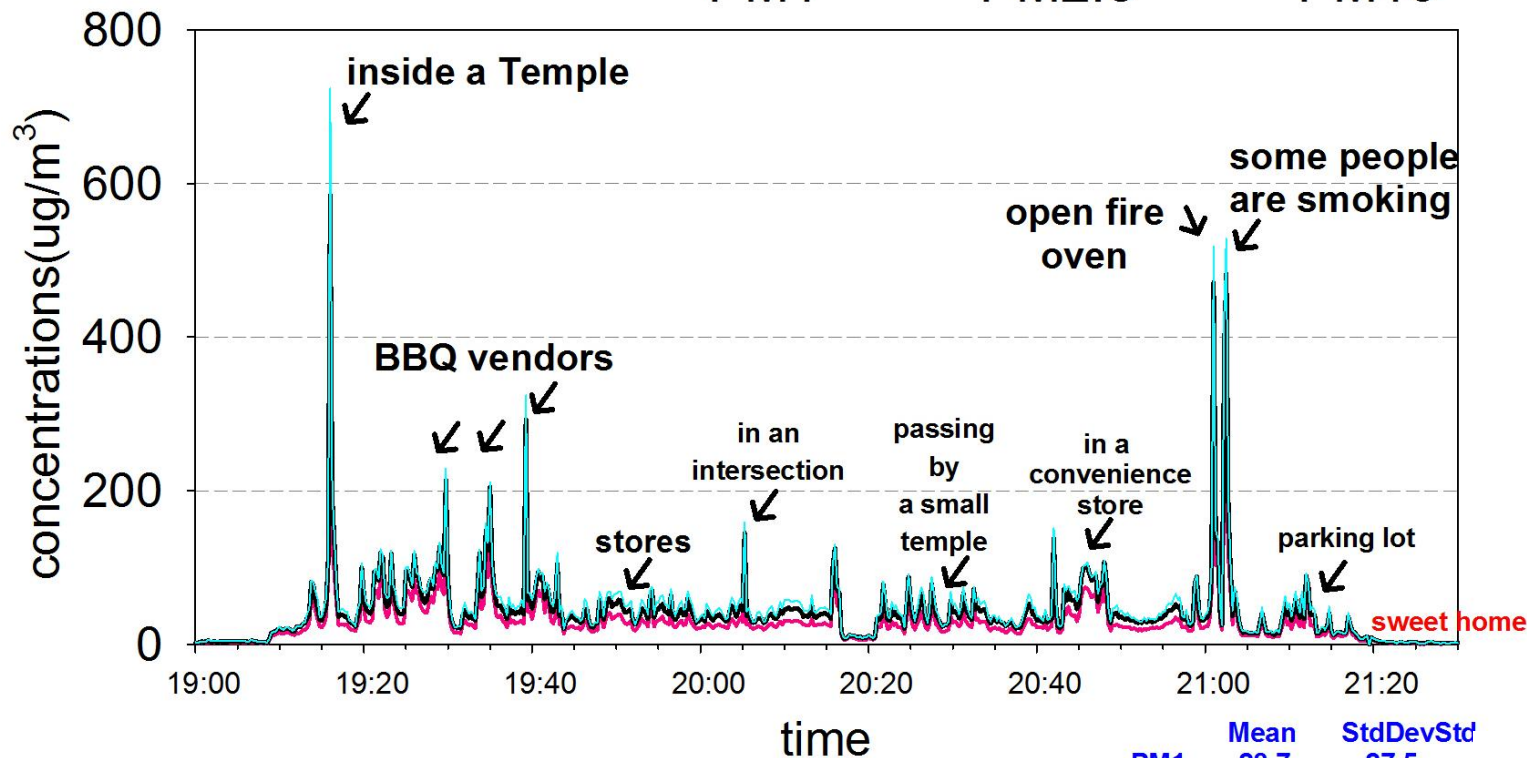
## 【Part D:】 Air quality

D. Air quality: Please choose at most two items you have smelled.

- 1. Exhaust gas from cars or motorcycles.
- 2. Smoke of lampblack from homes, restaurants and peddlers.
- 3. Smell from smoking or second-hand smoke.
- 4. Sweep dust.
- 5. Incense burning smoke (encircle incense, slender stick of incense, thick stick of incense, etc.)
- 6. Mosquito-repellent incense or coil.
- 7. Smell of fragrant products.
- 8. Paper offerings burning.
- 9. Burning wood, straw, bagasse, trash, etc.
- 10. Peculiar smells and dust emitted from factory or garbage incinerator.
- 11. Peculiar smells from garbage, kitchen waste and recycles or dust from livestock.
- 65. Please write down other peculiar smell in the space.

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— PM1 — PM2.5 — PM10



■ Unadjusted PM concentrations

	Mean	StdDevStd
PM1	28.7	27.5
PM2.5	42.4	48.1
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**Few items that **must** or  
**shouldn't** be shown in your  
questionnaires**



# Basic item or principle

## MUST

- Date should include **year**, month, day and time (if needed) in cohesive and standard format
  - eg. **2019**0905, 10:16
  - eg. In Japan 令和 元 年 5 月 1 日
- Subject's number
- Interviewer's name or number
- Project's contact information
- Questionnaire is well printed and bound

## Should NOT

- Subject's name
- Subject's address
- Subject's contact information (phone No, email address)
- These contact information should be protected as **confidential data** by using code, lock and seal.
- Staff should sign a **confidentiality agreement** before contacting these subjects.

# Characteristics of an excellent research assistant or questionnaire interviewer

- When he/she carries out projects
  - Carry out tasks precisely and follow standard operation procedures (**SOPs**)
  - Always **communicate, coordinate and cooperate** with team leader and coworkers
- When he/she faces subjects
  - **Protect subjects' privacy and data confidentiality**
  - Remain **neutral attitude**, calm and clear speak tones
  - Keep **proper manners**
  - **Keep proper distance** from subjects



# Take home messages

- Questionnaires should be included in your **IRB application** document
- Always protect **subject's privacy**. It is a basic common sense and foundation of trust.
- Make sure your interviewers or staff fully understand your questionnaire with **the same definitions**
- Use **general terms and language** in your question. Avoid jargon or dry and scientific wordings
- **Avoid complicated sentences** which would confuse your subjects
  - Bad question: Are you **not happy** when air quality **isn't good**, **especially when your kid is sneezing**?
  - better question: Do you feel sad when air quality is bad when you are outside?
- Set up your **data check points**

# Required tasks for Hi-ASAP

- For international comparison, core questions should be the same for all subjects across different areas. Core questions will be provided by our group which should be translated into local languages. Please translate the core questions based on faithfulness, expressiveness, and elegance.
- You may design more questions based on knowledge of local PM<sub>2.5</sub> sources or customs. But do keep the questionnaire not too long. Otherwise, your subjects will lose patience and give your random answers
- When designing questions, always think how I analyze these questions with environment data to fit our research purposes; be sure to use plain languages for your subjects
- Think about the possibility to collaborate with scientists in other fields using the same questions or combining other datasets
- Keep in mind the time-resolution of questionnaire and environment data

**Any questions?**

**Questionnaire and  
Time-activity Diary (TAD)**

**SC Candice LUNG**