

Dr. Cheok Chit Fang and  
Dr. Guo Huili

# Scientists Leading the Way

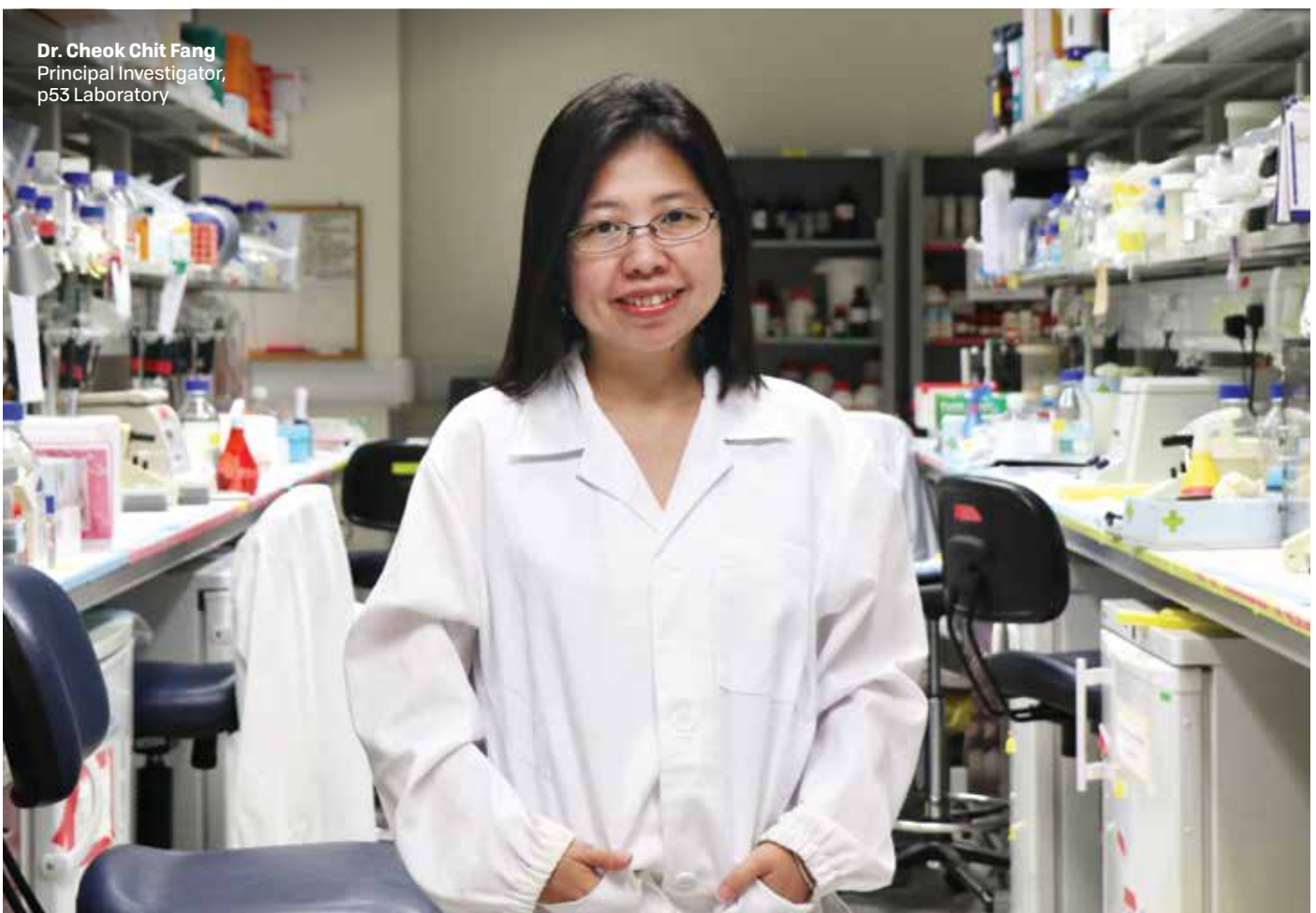
The human body is a beautiful and intricate masterpiece. It is the subject of fascination for two A\*STAR scholars: Dr. Cheok Chit Fang, a Principal Investigator at p53 Laboratory, and Dr. Guo Huili, a Junior Investigator at Institute of Molecular and Cellular Biology (IMCB). Read how their personal encounters have impelled them to push ahead and soar.

## Trying to Understand Cells

**Chit Fang (CF):** Cells are the world's cleverest engines. We invent cars and robots but we cannot replicate a single living cell. I seek to understand the biological complexities of how these trillions of cells work in our body.

**“Know what you’re good at, and believe in your capabilities.”**

**- Dr. Cheok Chit Fang**



**Dr. Cheok Chit Fang**  
Principal Investigator,  
p53 Laboratory



## FROM LAB TO REALITY – TRANSLATING RESEARCH INTO REAL-WORLD BENEFITS

Huili is interested in RNA translation. She studies ribosomes, which are cellular machines that translate information in mRNA templates into functional proteins. Here's an example of how her research could be applied.

### Problem

Male infertility

### What it is

When ribosome translation in the cells goes awry, the sperm lose their abilities to fertilise the eggs.

### Current assessment

Clinicians can only evaluate the quality of sperm samples by their appearances. Such assessments are not precise.

### Eventual goal

To come up with a diagnostic kit that can evaluate the quality of sperm cells by their molecular signatures. In turn, this can likely increase the success rate of certain assisted reproduction procedures.

“My ultimate hope is for our research to be translated into something tangible, be it an anti-viral drug or diagnostic kit.”

- Dr. Guo Huili

### Drawing Strength from Pain

**Huili (H):** Four years ago, I had a miscarriage. During recovery, I came across a paper about sperm and RNA translation. My project on male infertility was borne out of this. My miscarriage has also put things into perspective.

I can soldier on when my experiments don't go the way I intend them to.

### Instincts and Life Experiences

**CF:** Your instincts are shaped by your knowledge, experiences and interactions with different people. Trust them. Having been in the research field for 15 years, I rely on them to tell me what works and what doesn't. They also allow me to assess published papers critically.

**H:** When I was growing up, I experienced constant eczema flare-ups. I simply cannot believe there is no cure for this common condition. Finding a cure for eczema remains one of my lifelong goals.



**Dr. Guo Huili**  
Junior Investigator,  
Institute of Molecular and  
Cell Biology (IMCB)

### Between Family and Work

**CF:** When I travel for work, I keep in touch with my family via Skype. My son would sometimes cry during the chat sessions. It's difficult, but it's also part and parcel of my work. It makes me cherish the moments I have with him whenever I'm back in Singapore.

**H:** That's why it's important to find a good husband, someone who can pick up the slack when you need to be away! (laughs)

### Precious Advice to the Youth

**CF:** Embrace the opportunities to present



at conferences. Your confidence will grow when you realise the significance and potential impact of your work.

**H:** Students need not be discouraged if they only have average grades. Don't let that stop you from taking that first step of trying.

**CF:** I always say: "When brainstorming new project ideas, keep an open mind; and be very focused once you've decided on one."

**H:** Write to scientists and ask for attachment opportunities. Job shadowing allows you to learn more about their daily routines and research efforts.




## BREAKING NEW GROUND IN CANCER RESEARCH

Chit Fang's ultimate goal is to improve cancer treatments and patients' quality of life. Chit Fang and her team have discovered molecules that will change the face of cancer therapies, and they are in the process of obtaining patents for their work.



### FACTS ABOUT CANCER



Tumour suppressor proteins prevent the formation of cancer cells.



Oncogenes mutate and cause tumours to form.



DNA replication can be a driver of tumour formations.

## TRAILBLAZERS!

Leading the way in R&D



### Dr. Cheok Chit Fang

- Appointed Lead Investigator at FIRC Institute of Molecular Oncology Foundation, Milan

- Invited to key international meetings to present her team's work



### Dr. Guo Huili

- Recipient of Young Scientist Award 2016, and L'Oreal Singapore for Women In Science National Fellowship 2014

- Ambassador for Girls2Pioneers, a programme run by Singapore Committee for UN Women

