The First Decade of Responsible Conduct of Research (RCR) Education in Taiwan:
Reflections from an Early-Career Scholar

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Agenda

RCR community in Taiwan
▸ Before 2009: A group of senior researchers initiated the first effort
▸ 2009 – now: AREE key personnel and supporting units

AREE Center and Achievement (2009 – 2019)
▸ Transition to a physical/online training center
▸ The approach taken
▸ Outcomes

Implementing RCR Education Sustainably (2020 –)
▸ Customize RCR education to be more Taiwan-based
▸ Take a culture-bound authorship study as an example

RCR Community in Taiwan

Before **2009** Had almost nothing
- No clear research integrity policies and mandates of RCR training
- People unknowingly engaged in questionable practices

In **2009** A group of senior researchers: "do something"
- Hope: fix existing problems; reform research cultures to be more **responsible & transparent**
- Tasks: translated a book of ORI, recruited people (built a network of like-mined), and sought supports from government units

Since **2009 – present** A new and small group is there.
- Goals: change culture, meet global trends, and gain public trust

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Key Personnel

Director/Principal Investigator of AREE

Dr. Chien **Chou**: Supervise and oversee the function of the AREE

Co-Principal Investigator and their tasks

Dr. Fu-Chang **Tsai**: Rrecruit content writers

Dr. Chao-Hsiu **Chen**: Lead eLearning design

Dr. Chih-Yuan **Sun**: Develop and maintain AREE learning management system

Dr. Yuan-Hsuan **Lee**: Develop and support certificate exams

Fellow and Staff

Dr. Sophia J. **Pan**: Executive secretary, research fellow

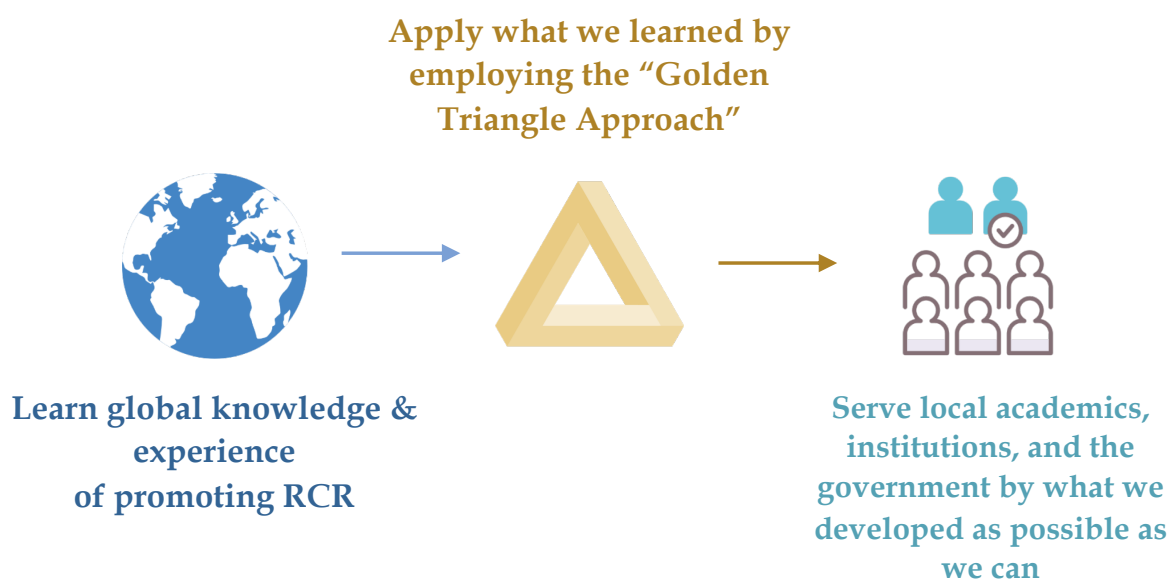Ms. Chun-Lin **Kao**: Senior project manager (administrative professional)

Mr. Tse-Wei **Chiang**: Project manager (eLearning professional)

Supporter (University System of Taiwan)

Dr. Ovid J. L. **Tzeng** (President); Dr. Cheng-Chen **Chen** (Vice Present)

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What did we do in the past 10 (2009-2019) years?

▦ Three Tasks (2009 - present)

Apply what we learned by employing the "Golden Triangle Approach"

Learn global knowledge & experience
of promoting RCR

Serve local academics, institutions, and the government by what we developed as possible as we can

Adopt Global Experience

2013 Canada: 3rd World Conference on Research Integrity

2014 USA: HHS OHRP, ORI, NIH, NSF, and John Hopkins Univ.

2015 Brazil: 4th World Conference on Research Integrity

2016 USA: Asia Pacific Research Integrity Network Meeting (Planning)

2017 Hong Kong: 1st Asia Pacific Research Integrity Network Meeting

2017 Netherlands: 5th World Conference on Research Integrity

2017 Japan: Tokyo Tech, Tokyo Univ., Waseda Univ., RIKEN, and AMED

2018 Taiwan: 2nd Asia Pacific Rim Research Integrity Network Meeting

2018 Hong Kong: Chinese University of Hong Kong

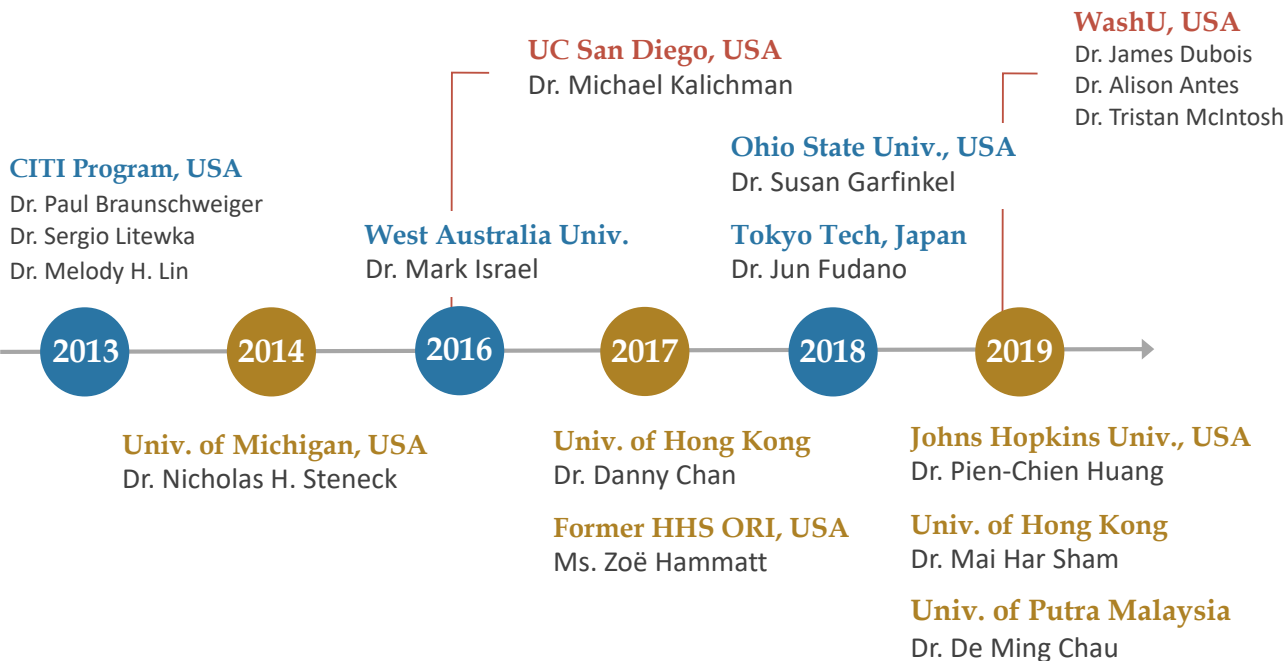**2018 Singapore:** National Univ. of Singapore and Nanyang Technological Univ.

2019 Hong Kong: 5th World Conference on Research Integrity

2019 South Korea: Center for Research Ethics Information

- ■ We visited
- ■ We attended
- ■ We organized

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Adopt Global Experience

WashU, USA
Dr. James Dubois
Dr. Alison Antes
Dr. Tristan McIntosh

UC San Diego, USA
Dr. Michael Kalichman

Ohio State Univ., USA
Dr. Susan Garfinkel

CITI Program, USA
Dr. Paul Braunschweiger
Dr. Sergio Litewka
Dr. Melody H. Lin

West Australia Univ.
Dr. Mark Israel

Tokyo Tech, Japan
Dr. Jun Fudano

Timeline: 2013 — 2014 — 2016 — 2017 — 2018 — 2019

Univ. of Michigan, USA
Dr. Nicholas H. Steneck

Univ. of Hong Kong
Dr. Danny Chan

Former HHS ORI, USA
Ms. Zoë Hammatt

Johns Hopkins Univ., USA
Dr. Pien-Chien Huang

Univ. of Hong Kong
Dr. Mai Har Sham

Univ. of Putra Malaysia
Dr. De Ming Chau

■■ Speakers we invited to TW   ■ I work(ed) with

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The Golden Triangle Approach

National: Support Taiwan's government (MOE & MOST) to promote RI and RCR (e.g., making policies, briefing announcements of new law/policies to the public, facilitating case investigation as needed)

Institutional: Help and oversee Taiwan research units (universities and institutions) establish mechanisms of (a) managing RI & research misconduct and (b) implementing institutional RCR training

Individual: Help local researchers practice RCR in their day-to-day professional activities through online and face-to-face RCR training and consulting

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Milestone: The AREE Center

AREE
臺灣學術倫理教育資源中心
Center for Taiwan Academic Research Ethics Education

Since 2014

The leading RCR online education program in Chinese-speaking areas

MOE + MOST: ≈ **$4.16 Million USD**

More than **120** RCR online learning units have been developed (Chinese & English).

Currently have **570,000+** registered users (students, PIs, research fellows).

More than **51,000,000** visits in 2019.

258 (85%) universities and research institutions require **ALL** of their faculty, researchers, or grad students across all fields to take RCR training.

Updated: October 2019

MINISTRY OF EDUCATION
教育部

MOST 科技部
Ministry of Science and Technology

AREE Services

Offer
online (▲) and
face-to-face (▲)
RCR training program

Develop ▲
dynamic materials for
teaching and learning RCR
in institutions

▲ **Announce**
newly-released legal &
government documents
to the public

Consult ▲
on ethical issues in RCR
for local PIs, researchers,
and students

▲ Open and Free for all   ▲ Instructor fee is needed (paid by institutions)

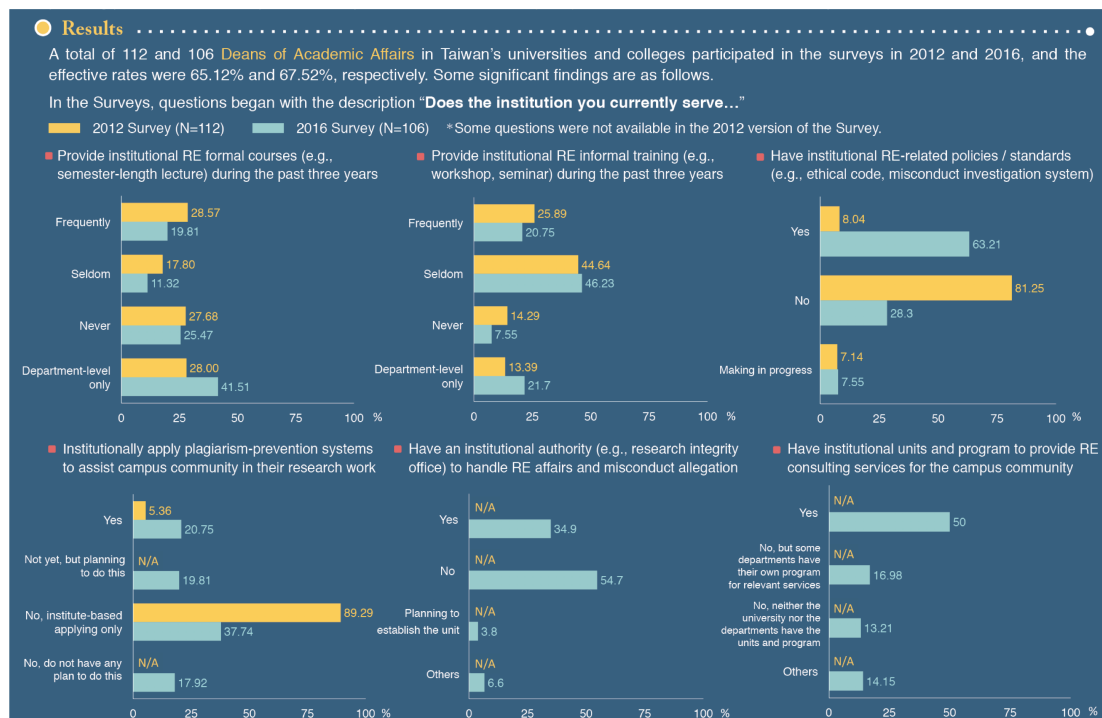# Are our first-decade goals achieved?
— The improvement of local research culture

Achievement of the First Decade
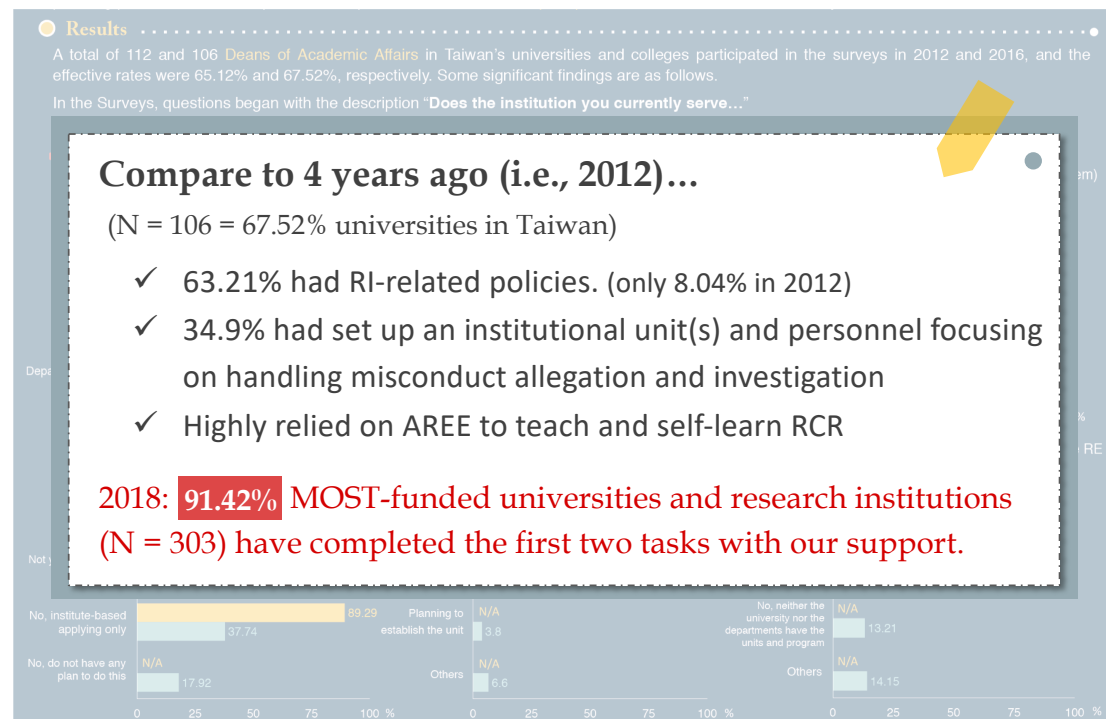
2009 – present : Individual understanding of RCR

(Photo credit: Shin-Chun Wu)   13

2012 – 2016: Institution readiness to engage in RCR

Results

A total of 112 and 106 Deans of Academic Affairs in Taiwan's universities and colleges participated in the surveys in 2012 and 2016, and the effective rates were 65.12% and 67.52%, respectively. Some significant findings are as follows.

In the Surveys, questions began with the description "**Does the institution you currently serve…**"

2012 Survey (N=112)   2016 Survey (N=106)   *Some questions were not available in the 2012 version of the Survey.

Provide institutional RE formal courses (e.g., semester-length lecture) during the past three years

	2012	2016
Frequently	28.57	19.81
Seldom	17.80	11.32
Never	27.68	25.47
Department-level only	28.00	41.51

Provide institutional RE informal training (e.g., workshop, seminar) during the past three years

	2012	2016
Frequently	25.89	20.75
Seldom	44.64	46.23
Never	14.29	7.55
Department-level only	13.39	21.7

Have institutional RE-related policies / standards (e.g., ethical code, misconduct investigation system)

	2012	2016
Yes	8.04	63.21
No	81.25	28.3
Making in progress	7.14	7.55

Institutionally apply plagiarism-prevention systems to assist campus community in their research work

	2012	2016
Yes	5.36	20.75
Not yet, but planning to do this	N/A	19.81
No, institute-based applying only	89.29	37.74
No, do not have any plan to do this	N/A	17.92

Have an institutional authority (e.g., research integrity office) to handle RE affairs and misconduct allegation

	2012	2016
Yes	N/A	34.9
No	N/A	54.7
Planning to establish the unit	N/A	3.8
Others	N/A	6.6

Have institutional units and program to provide RE consulting services for the campus community

	2012	2016
Yes	N/A	50
No, but some departments have their own program for relevant services	N/A	16.98
No, neither the university nor the departments have the units and program	N/A	13.21
Others	N/A	14.15

Pan, S. J.-A., Chou, C., & Kao, C.-L. (2017, May). The changes to the institutional research climate before and after the implementation of a nationwide research ethics education project in Taiwan. Poster presented at the 5th World Conference on Research Integrity (WCRI), Amsterdam, Netherlands. May 28-31, 2017.
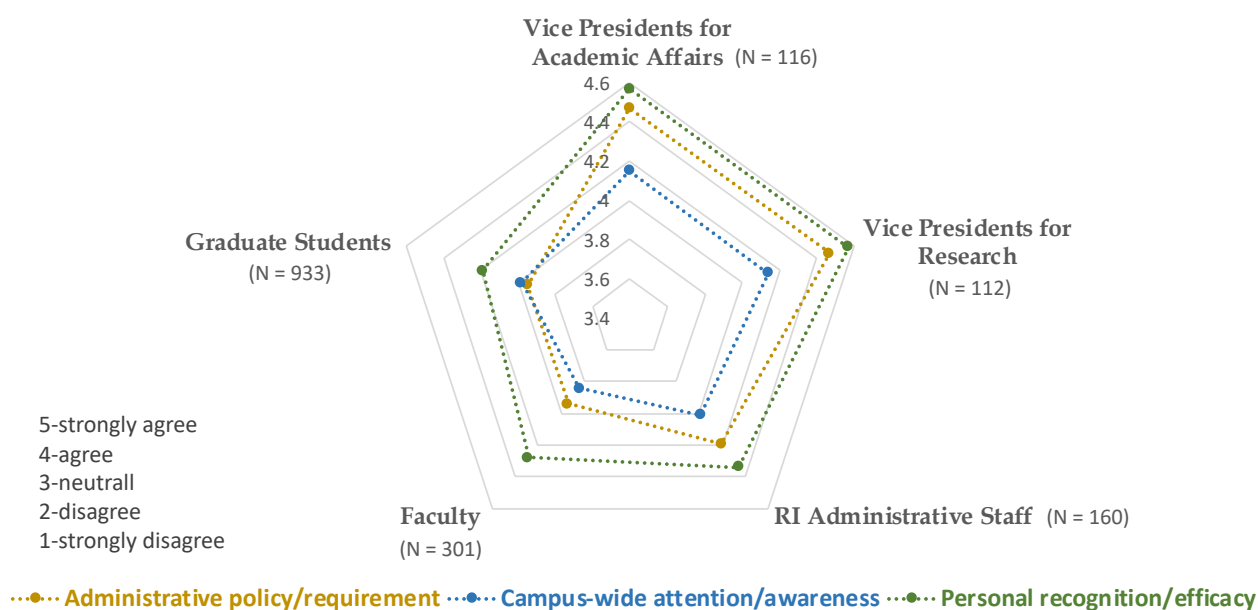
2012 – 2016: Institution **readiness** to engage in RCR

Compare to 4 years ago (i.e., 2012)…

(N = 106 = 67.52% universities in Taiwan)

✓ 63.21% had RI-related policies. (only 8.04% in 2012)

✓ 34.9% had set up an institutional unit(s) and personnel focusing on handling misconduct allegation and investigation

✓ Highly relied on AREE to teach and self-learn RCR

2018: **91.42%** MOST-funded universities and research institutions (N = 303) have completed the first two tasks with our support.

No, institute-based applying only	89.29	
	37.74	
No, do not have any plan to do this	N/A	
	17.92	

Planning to establish the unit	N/A 3.8
Others	N/A 6.6

No, neither the university nor the departments have the units and program	N/A 13.21
Others	N/A 14.15

Pan, S. J.-A., Chou, C., & Kao, C.-L. (2017, May). The changes to the institutional research climate before and after the implementation of a nationwide research ethics education project in Taiwan. Poster presented at the 5th World Conference on Research Integrity (WCRI), Amsterdam, Netherlands. May 28-31, 2017.

2016 – 2019: Academia **awareness** of culture changes

PERCEPTION OF THE CHANGES
THE RAISING OF AWARENESS OF INSTITUTIONAL CULTURE CHANGES

Vice Presidents for Academic Affairs (N = 116)

Vice Presidents for Research (N = 112)

RI Administrative Staff (N = 160)

Faculty (N = 301)

Graduate Students (N = 933)

5-strongly agree
4-agree
3-neutrall
2-disagree
1-strongly disagree

···•··· **Administrative policy/requirement**   ···•··· **Campus-wide attention/awareness**   ···•··· **Personal recognition/efficacy**

Chou, C., Pan, S. J.-A., & Kao, C.-L. (2019, June). Perception of research integrity on Taiwan university campuses: A comparison of administrators, faculties, and students. Paper presented at the 6th World Conference on Research Integrity (WCRI), Hong Kong. June 2-5, 2019.

What's the next?

How to sustain and advance the effectiveness of RCR education?

Sustainable Implementation of RCR Education

Customize Education to be More Culturally Relevant & Inclusive

▶ The concept of RCR was conceptualized in response to historical events in **Western** society in scientific research.

▶ We found some unsolved issues caused by differences (even conflicts) between Eastern and Western cultures.

▶ Example: Western RCR norms about navigating **"relationships"** are actually very limited in their effectiveness in East Asian societies.

(Chen & Macfarlane, 2016; Macfarlane, 2017; Nho, 2016; Pan & Chou, 2020)

How to Decide Authorship?

In RCR Education

– Depends on each individual's contribution

– Decision collectively made by all team members

– Follow international guidelines (e.g., ICMJE)

In the Reality (East Asia)

– Made solely by the PIs (lack of transparency?)

– During the decision-making, social hierarchy and power relations override individual intellectual contributions.

– Sometimes it looks disrespectful and offensive when a junior student makes a request to negotiate senior faculty members' authorship decisions.

(Chen & Macfarlane, 2016; Macfarlane, 2017; Pan & Chou, 2020) 19

A Real Case in Taiwan – Honorary Authorship?

Science Contents ▾ News ▾ Careers ▾ Journals ▾

SHARE

Retraction notice

Abstract

The following article has been included in a multiple retraction:
Chen CY, Chen T-H, Chen Y-H, Yu S-E and Chung P-Y (2013) Information technology system modeling an integrated C-TAM-TPB model to the validation of ocean tidal analyses *Journal of Vibration and Control* Epub ahead of print 7 May 2013. doi: 10.1177/1077546312472924

JOURNAL OF VIBRATION AND CONTROL

Updated: Lax reviewing practice prompts 60 retractions at SAGE journal

By **John Bohannon** | Jul. 14, 2014 , 6:00 PM

The academic publishing industry has been rocked by scandals in recent years, **most of them uncovered by outsiders**. But the latest comes from an internal probe: A 14-month investigation by the publisher SAGE has uncovered a fake peer-review scam involving hundreds of fraudulent and assumed identities. **A total of 60 research articles published over the past 4 years in the Journal of Vibration and Control (JVC) are being retracted**. SAGE concludes that the scam was orchestrated—possibly alone—by one physicist, Peter Chen, at the National Pingtung

University World News
THE GLOBAL WINDOW ON HIGHER EDUCATION

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TAIWAN

Education minister resigns over research fraud scandal

Mimi Leung and Yojana Sharma 14 July 2014

Taiwan's Education Minister Chiang Wei-ling resigned on Monday 14 July over his links to a researcher whose papers were retracted from an international scientific journal because of alleged fraud.

The minister has said he will return to teaching at National Central University in Jongli in northern Taiwan. He was president of the university before joining the cabinet in February 2012, the state-run news agency CNA reported.

Sun Lih-chyun, spokesperson for the Executive Yuan – roughly equivalent to Taiwan's cabinet – confirmed that the minister's resignation had been accepted by Premier Jiang Yi-huah, and that Deputy Minister Chen Der-hwa would assume the role of acting education minister until a successor was formally announced.

Chiang said in a statement that the decision to resign was made to uphold his own reputation and avoid unnecessary disturbance of the work of the education ministry, after the incident ignited a wave of

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Why they take risks to engage in unethical authorship?

Satisfy traditional values of ethics used to handle mentor-mentee relationship: maintain social harmony, obey hierarchy & power relation, respect for authority

" **PhD Students**

| 'do favors (offer "renqin [人情]") for influential figures in academia'
| 'show some respect and gratitude to other researchers, such as advisors' "

" **Research Fellows** (faculty, postdocs)

| 'consolidate their professional standing and influence in administrative affairs'
| 'consolidate their collaborative ties with other researchers and teams'
| 'gain more opportunities to perform academic services, such as serving as an
| editor for journals or the chairman of conferences' "

Pan, S. J.-A, & Chou, C. (2020). Taiwanese researchers' perceptions of questionable authorship practices: An exploratory study. *Science and Engineering Ethics*. DOI: 10.1007/s11948-020-00180-x

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Customize RCR Education

Identify Something that Doesn't Work and Fix It

▸ Do more cultural research to understand how cultural habits and traditional values affect researchers' day-to-day practices

▸ Pursue international collaborations to learn the differences in professional-decision making in science between East Asian and Western people.

  ▸ e.g., NSF grant proposal: *Advancing the use of professional decision-making strategies in a culturally diverse research community*
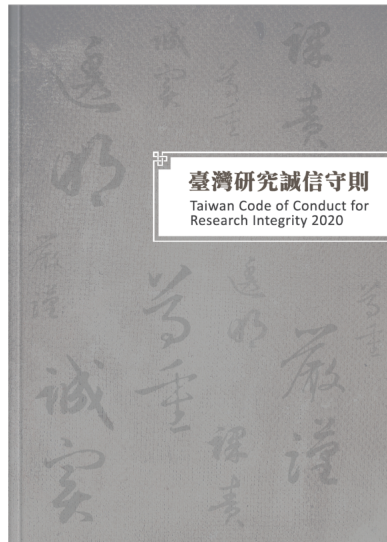
Customize Current RCR Training Content

▸ Make it more consistent with the research context that Taiwanese researchers experience

⊞ Closing Remarks

Will be released in this spring.

臺灣研究誠信守則
Taiwan Code of Conduct for
Research Integrity 2020

台灣聯合大學系統
University System of Taiwan

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臺灣學術倫理教育資源中心
Center for Taiwan Academic Research Ethics Education

Thank you very much!

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AREE http://ethics.moe.edu.tw

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Macfarlane, B. (2017). The ethics of multiple authorship: Power, performativity and the gift economy. Studies in Higher Education, 42(7), 1194-1210, doi:10.1080/03075079.2015.1085009.

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Pan, S. J.-A., & Chou, C. (2020). Taiwanese researchers' perceptions of questionable authorship practices: An exploratory study. Science and Engineering Ethics. DOI: 10.1007/s11948-020-00180-x

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