Scientific mentoring and research groups in U.P. Diliman

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Outline

- Motivation
- Objectives
- Modes of mentoring
- Scientific mentoring
  - Challenges and programs
- Research groups
  - Goals, memberships, activities
- Group formation and performance metrics
- Testimonials on research groups
- Summary and Conclusions
Motivation

- Lessons from our magnificent friends

Mentoring instinct

Herding behaviour
Motivation

- Analogies with a matriarchal elephant herd

A female elephant shares in the supervision of the calf

Mother steers calf away from a log to avoid getting injured

Matriarch leads the herd
Motivation

- UP is mandated to lead in scientific research with the aim of creating new knowledge (e.g., through publications)

- UP researchers are now publishing in both local and international journals, yet

  - on the average, number of ISI papers remains low

- One strategy: PROMOTE Scientific Mentoring
Objectives

- Describe the **concept and mechanics** of **research groups** as an element for scientific mentoring

- Discuss **steps** and **conditions** to **start a research group**

- Assess the impact of research groups in scientific mentoring (**testimonials**)
Mentoring*

- Supporting and encouraging people to manage their own learning in order that they may
  - maximize their potential
  - develop their skills
  - improve their performance, and
  - become the person they want to be

*Eric Parsloe, The Oxford School of Coaching and Mentoring
Modes of Mentoring

- One-on-one mentoring
- Peer mentoring
- Group mentoring
One-on-one mentoring

- Dedicated mentoring

- Singing/voice mentor

From the Internet
Peer mentoring

- Slightly older youth with younger students

- Senior and junior resident physicians
Group mentoring

- Youth groups with one or more adults
  - Team sports
    - coach
    - asst. coach
    - manager
    - veterans
    - rookies

From the Internet
Scientific mentoring

- Mentoring that involves **activities related to research**

- **Collaborative**
  - NOT a hierarchical mentoring

- Scientific mentor and mentee **solve problems together**
Qualities of an ideal scientific mentor

- **(S)** Serves as a good role model
- **(M)** Matches interests of mentee with a research topic
- **(O)** Offers fresh perspectives
- **(L)** Looks out for research opportunities
Establishing scientific tradition (challenges related to mentoring)

- Increasing the number of competent PhD supervisors
- Attracting foreign-trained researchers
- Addressing in-breeding
- Containing the diaspora of the brightest students from UP to graduate schools abroad

*Derived from “My Expectations of the Filipino Scientist” by Dr. Caesar A. Saloma, during the awarding ceremony of the 1st Dadulfalza Achievement Award (2001).*
Programs that promote scientific mentoring (CU-System level)

- Mentoring award
- Research dissemination grant
- Revised int’l publication award
- Foreign-trained PhD recruitment program
- Visiting professors program
- Scientific productivity system
- Versatile Instrument System for Science Education and Research (VISSER)
At the Department level...

- Many research challenges may be alleviated by **research groups** at the department level.

- What is the **purpose** of forming research groups?
  
  - *To attain a situation of collaborative learning* where researchers attempt to learn something together.

- **Collaborative group mentoring** = **scientific group mentoring**
How does a research group affect scientific mentoring?

**Research group** facilitates **all modes** of scientific mentoring
Goals of a research group

1. Contribute to scientific knowledge
2. Build a pool of experts
3. Establish collaborations (local and abroad)
4. Provide extension services to society
Membership and Activities

- Research Group
  - Regular seminars
  - Cooperative learning activities
  - Team building and FUN activities

- Research Teams
  - Work on specific problems and topics
  - More focused
Metrics

- Evaluation period: 3 years
  - International publications (papers per PhD)
  - Number of mentees graduated (PhD, MS, BS)
  - Research grants (amount)
  - Collaborations (publications and MOA)

- Continue, dissolve or merge
Cascade mentoring

Pay it forward
Hosting a foreign researcher

Intimate exchange of ideas
Social and emotional development

It’s more fun
Shaping careers

Critical mass
Testimonials on research groups

- **Respondents**: 25 researchers
- **Demographics**
  - Filipinos: 18, Foreigners: 7 (EU, US, Japan, India, China)
  - Age: 25-35 y/o: 16 respondents, 36-60 y/o: 9 respondents

- **Exploratory only**
  - small samples, not random, no comparison groups

- Nonetheless, **testimonials** revealed some insights and interesting trends
Do you think research group is **comparatively more beneficial** than conventional one-on-one mentoring? Please elucidate.

- “I strongly agree. I think research groups are imperative in order to achieve progress. The era of “one-man” science is probably over, at least it’s becoming more and more seldom.”
  - Research professor, 60 y/o (M), Denmark

- “Generally I would agree. However one-on-one mentoring **for brief 3 month periods** can be exceptionally beneficial towards the end of one’s PhD program”
  - Research scientist, 35 y/o (M), Ireland
Do you think that the research group concept and mechanics should be **adopted and promoted in all the departments** of a **research university**? Please elucidate.

- I disagree. Different departments have **different dynamics**. However, all dept’s should be **exposed to** the research group **concept** **but be able to decide if it will work for them**.
  
  - Research scientist, 40 y/o (F), Philippines

- I agree. Any dep’t that asks for (large) investment in research must **adopt the research group concept to assure longevity and progression**.
  
  - Research scientist, 42 y/o (M), Philippines
Summary

- Increasing the **number of competent PhD** supervisors
- **Attracting foreign-trained** researchers
- **Addressing in-breeding**
- **Containing the diaspora** of the brightest students

**Concluding**, research groups are an **integral element** in the scientific mentoring strategy
Maraming salamat po

Photo by Martin Grossnick