APEC Mentoring Center for the Gifted in Science (AMGS)

Workshop on Innovation and Cooperation of APEC Centers and Long-term Mechanisms
Session 2  Nov 4, 2019
Our Goal

To build and operate **Mentor-Mentee network** between scientist, science education professionals and student researchers of APEC Economies by providing continuous opportunities for joint research activities.
1. 18-19 APEC Cross Mentoring Research Activity

**Duration**
September 2018 ~ May 2019 (for 7 months)

**Application**
1st stage – 142 mentees 6 economies
2nd stage – 86 mentees 6 economies

**Research Mentor**
1st stage
- 10 mentors 6 economies
  - Biology, Physics, Chemistry, Engineering

2nd stage
- 10 mentors 5 economies
  - Aeronautical Engineering, Biochemistry, Chemical Engineering, Electronic Engineering, Material Engineering, Environmental Engineering

**Timeline**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepting application (AMGS webpage &amp; Email)</td>
<td>Sep 7 ~ Oct 14 2018</td>
</tr>
<tr>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>1st stage (6 weeks) – Basic course</td>
<td>Oct 21 ~ Dec 28 2018</td>
</tr>
<tr>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>Selecting mentees for 2nd stage mentoring &amp; Arranging Mentor-Mentee team</td>
<td>Dec 29 2018 ~ Jan 17 2019</td>
</tr>
<tr>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>2nd stage (12-15 weeks) (12~15 weeks)</td>
<td>Jan 18 ~ Apr 17 2019</td>
</tr>
<tr>
<td>↓</td>
<td></td>
</tr>
<tr>
<td>Submitting the research result to APEC Youth Scientist Journal</td>
<td>Jul 2019</td>
</tr>
</tbody>
</table>

1. 18-19 APEC Cross Mentoring Research Activity
<table>
<thead>
<tr>
<th>Name</th>
<th>Economy</th>
<th>Research Topic</th>
<th>Mentee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Jimmy K.Y. Wong</td>
<td>Hongkong, China</td>
<td>Invention of machines or tools in assisting the daily lives of physically disabled or elderly people</td>
<td>5</td>
</tr>
<tr>
<td>Prof. Yeong Rae HA</td>
<td>Korea</td>
<td>Vitamin D and Health Influence</td>
<td>5</td>
</tr>
<tr>
<td>Prof. Ashwani K. Gupta</td>
<td>USA</td>
<td>Renewable Green Energy</td>
<td>5</td>
</tr>
<tr>
<td>Prof. Geun-hie, RIM</td>
<td>Korea</td>
<td>Environmental Friendly Vehicles</td>
<td>5</td>
</tr>
<tr>
<td>Dr. Michelle M. Barbon</td>
<td>The Philippines</td>
<td>Application of Bioinformatics with Morphological and Molecular Area</td>
<td>4</td>
</tr>
<tr>
<td>Prof. Yun Hin Taufiq-Yap</td>
<td>Malaysia</td>
<td>Biofuels, Biomass &amp; Wastes</td>
<td>3</td>
</tr>
<tr>
<td>Prof. Somrat Kerdsuwan</td>
<td>Thailand</td>
<td>Waste to Energy in Asia Mega City</td>
<td>4</td>
</tr>
<tr>
<td>Prof. Hoang Anh</td>
<td>Vietnam</td>
<td>Solar PV systems: design and assessment</td>
<td>5</td>
</tr>
<tr>
<td>Prof. Dae-Hwan PARK</td>
<td>Korea</td>
<td>Nanochemistry and Nanomaterials for Biomedical Science</td>
<td>7</td>
</tr>
<tr>
<td>Dr. Hakjin LEE</td>
<td>Korea</td>
<td>Fundamental Aerodynamics and Wind Turbine System</td>
<td>6</td>
</tr>
</tbody>
</table>
Overall Schedule of APEC CMRA 19-20

**Announcement**
Oct 21 – Nov 17 2019

- **Domestic:** Official letter from MSIT to all High schools
- **Member economy:** Announcement by Program Director
- **Other Organization:** Letter from AMGS

1st stage of CMRA
Nov 18 – Dec 22 2019

- **Duration:** 4 weeks
- **Mentee:** High school students
  - 1st stage: Online Education contents on the web (8 lectures)

Mentee Selection
Dec 23 2019 – Jan 17 2020

- **Selection process:** Top 40% of performance score
- **Passed mentees** choose the mentor based on Mentor’s syllabus and submit the self-introduction and essay.
- **2nd stage mentors** choose the mentees working together

2nd stage of CMRA
Jan 20 – Apr 26 2020

- **Duration:** 12-15 weeks
- **Mentee:** 8-10 mentors in the region
  - Online communication, research guide, assignment, research paper

Submitting the Result
Jul 2020

- **Due date:** In 1 Month
- **Final result:** Submission to AYSJ
  - By June 2020
Expanding Research Fields

What mentees prefer vs. What we researched

- Environmental Science
- Engineering
- Energy Science
- Material Science
- Health Science
- Physics
- Life Science
- Earth Science
- Others
2. 7th APEC Conference for Future Scientist

Date/ Venue: April or May 2020 (4 nights 5 days)/ Semarang, Indonesia

Participants: Mentors and Mentees in 17-18, 18-19 programs and recommended student researcher teams and the mentors

<table>
<thead>
<tr>
<th>Day</th>
<th>Mentee</th>
<th>Mentor</th>
</tr>
</thead>
</table>
| Day 1 | - Special Lecture/ Opening  
- Mentee Conference (Poster presentation) | |
| Day 2 | - Mentor symposium  
- Team project | -Mentor Conference |
| Day 3 | -Lecture & Lab (Maker’s room)  
- Team project | -Workshop on the gift ed |
| Day 4 | -Presentation Best-Poster  
-Communication with Alumni  
-Team project | |
| Day 5 | - Team Project Presentation  
-Closing | |
3 Steps of Research Process

1st Step - CMRA (Online)

2nd Step - APEC Conference For Future Scientist (Offline)

3rd Step - Journal Publication

Target participants

Mentors and Mentees Of CMRA

Teen researchers in APEC with recommendation

Scientists, researchers, and educators
Previous Event

Poster Presentation

Team Project

Team Project

Team Project Presentation

Mentor Workshop
Cooperation Idea for CMRA

For more mentors in various research topics

Broaden the pool of Expert collaboration

- Federation of Science & Technology Societies
- Scientists and Engineers Without Borders
- APEC PPSTI Centers
- APEC PPSTI Long-term mechanisms
Cooperation Idea for ACFS

7th APEC Conference for Future Scientist

Professionals
From APEC Centers & projects

Collaboration
With other experts

Topic Idea
With APEC related-issue

Network
For Future Scientists

Professionals
From APEC-PPSTI Centers & projects
Cooperation Idea for AJFS

Joint Research with Issues in APEC

Theme of the Year Related to APEC/Global Issue + Teacher-Student team 1~2 team of each economies

Mentees involved more to the global issue
Improving the outcome & more collaboration
Thank you
감사합니다