Invitation Proposal

2010 INTERNATIONAL YOUTH SCIENCE & ENGINEERING CAMP
(ISEC 2010)

1-15 August 2010, Seoul Korea
Contents

I. Objectives / General Information 3
   1. Objectives
   2. General Information for ISEC 2010

II. Program 5
   Academic Activities 5
   1. Open Laboratory Activities
   2. Lectures
   3. Small Group Seminars
   4. Science Survival
   5. Field Trips
   Cultural Programs 7
   1. Getting Acquainted
   2. Seoul Tour
   3. Experiencing Korean Culture

III. Information for Participation 9
   1. How to Participate in ISEC 2010
   2. Accommodation, Meal, and Transportation
   3. Participating in Programs
   4. Contacts

Appendix 11
   1. About KOFAC
   2. About SNU, College of Engineering
I. Objectives / General Information

1. Objectives

(1) To build a foundation of exchanges and cooperation among youth in the field of science and technology by encouraging the formation of an international mindset through collaborative research activities, personal interactions, and cross-cultural experiences with participants from different countries.

(2) To inspire students to undertake careers in science and engineering by exposing them to laboratory research activities at early age and by providing them with concrete awareness and vision for a career in science and engineering through personal contact with scientists and engineers.

(3) To attempt to address the limitations of science education in the classroom through extracurricular science activities.

2. General Information for ISEC 2010

(1) Period: Sunday, August 1 - Sunday, August 15, 2010 (15 days)

(2) Location: Seoul National University, College of Engineering, Seoul Korea

(3) Host Organizations: Korea Foundation for the Advancement of Science and Creativity (KOFAC) and Seoul National University, College of Engineering

(4) Partners: Ministry of Education, Science and Technology(MEST) and Korean National Commission for UNESCO

(5) Participant: 100 students of 16-17 years old and accompanying teacher or conductors (Maximum of 5 students and 1 teacher/conductor per country)

Criteria

- High school students who have demonstrated a genuine interest in and excellence in science.
- Students who have received awards in science-related activities or exhibitions such as exhibitions of inventions, science and technology competitions, science-related forums, and other related activities.
- Students with good English skills to communicate and to understand classes.

(6) Program of Events

- Open Laboratory Activities: 2 lab classes each for 5 major research fields including Chemistry, Biology, Environmental Engineering, computer science,
and more. (*The final laboratories and their curriculums will be settled and posted on the ISEC 2010 website in February 2010.)*

- Lectures by eminent scientists and scholars
- Student Group Seminars
- Playful Learning (Games of science)
- Welcoming Party
- Seoul City Tour
- Experiencing Korean Culture
- Field Trips to Research Institutes/Industries
- Teachers’ Seminar

Additional Information

- Participating countries are responsible for the airfare and registration fee (USD200/person) for their respective participants. The registration fee includes all expenses associated with participants’ stay in Korea, including accommodation, meals, local transportation, and other expenses.
- For more information, please visit ISEC website (http://isec.kofac.or.kr) where you can see various camp activities in the past.
- Details of programs for ISEC 2010 will be posted on the ISEC website in February 2010.

< Important dates >

- December 2009: KOFAC sends out this Invitation proposal to embassies in Seoul, Korea
- February 2010: Details of programs for ISEC 2010 will be posted on the ISEC website
- March 2010: Let KOFAC know each country’s participation through embassies in Seoul, Korea
- April-May 2010: Confirm participation with exact No. of participants by sending the application form
- June 2010: Complete online registration on the ISEC website
- August 2010: Participate in ISEC 2010!

For more information or inquiries,
Please contact Ms. JiYun Lee,
Dept. of Public Relations & International Cooperation
Korea Foundation for the Advancement of Science and Creativity (KOFAC)
Tel: +822 559 3855 / Fax: +822 555 2355
E-mail: international@kofac.or.kr
II. Program
(*Details of the Programs will change according to the situation.)

Overall Schedule

<table>
<thead>
<tr>
<th>SUN</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Participants’ Arrival and Check-in</td>
<td>• Opening Ceremony</td>
<td>• Open-Lab Orientation</td>
<td>• Open-Lab Activities</td>
<td>• Open-Lab Activities</td>
<td>• Field Trip</td>
<td>• Cultural Activities</td>
</tr>
<tr>
<td>• Orientation</td>
<td>• Lecture 1</td>
<td>• City Tour</td>
<td>• Lecture 2</td>
<td>• City Tour</td>
<td>• Field Trip</td>
<td>• Games of Science</td>
</tr>
<tr>
<td></td>
<td>• Campus Tour</td>
<td></td>
<td>• Cultural Activities</td>
<td></td>
<td>• Recreation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Welcoming Party</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Field Trip | • Open-Lab Activities | • Open-Lab Orientation | • Open-Lab Activities | • Open-Lab Activities | • Team Presentation of Research Results |
| Cultural Activities | • Lecture 3 | • Student Seminars | • Lecture 2 | • Student Seminars | • Closing Ceremony |
| | • Cultural Activities | | • Lecture 4 | | • Farewell Party |
| | | | | | |

Aug 15
| Participants’ Check-out and Departure |
| This schedule is a tentative plan. |

** Teachers’ seminar will take place for a half-day during the weekdays.

Academic Activities

1. Open Laboratory Activities

Open laboratory activity is a core program of this camp and offers participating students an opportunity to have early experience of research activities in a university laboratory. In ISEC 2010, the research activity will focus on the themes of the sustainable development and solving five major global issues including climate change, energy, disease, food and water shortage. More than 10 labs over five areas from chemistry, biology, environmental engineering, computer science, energy resources, electrical and industrial engineering, materials science, mechanical &
aerospace engineering, naval architecture and ocean engineering, and nuclear engineering, will be open for the participants. (*The final laboratories and their curriculums will be settled and posted on the ISEC 2010 website in February 2010.)

Each student selects one research field that she/he wants to join and conducts their research projects as a team through experiments in a respective laboratory under the supervision of research team leaders (Ph.D. candidates). Students share their research performance with other participants by reporting their research results in a presentation session on the final day of research activities.

2. Lectures

Besides laboratory research activities, participants have a chance to meet many eminent scientists and scholars from Korea and other countries through a series of lectures on various topics. Students will be able to make personal contact with scientists and gain practical advice on their future careers as scientists by interacting with scientists before and after lectures.

3. Student Seminars

Participants are encouraged to share their own areas of interest and research, or their experiences of lab works with their friends in small group seminars. Also, specific topics can be given and each group will work on them in various ways (e.g. discussions/debates, small lab activities, presentations, etc.). Sample topics are as follows.

- Share experiences of lab works, personal experiences, and future plans, etc.
- Discuss on specific topics in science with doctoral students.
- Read and debate on given scientific articles, etc.

4. Science Survival

Science Survival is a games of science that requires participants to accomplish given tasks with their scientific knowledge in teams. The students begin with decoding secret messages, then go on to play such games as Stairs of Memory, Room Escape, The Chamber of Secrets, The Tower of Babel, Seven Pieces, Air-gun Firing, Blast-Off, and Robot-Making.
5. Field Trip

ISEC participants will have chance to visit famous research institute and industries where they can see the cutting-edge science and technology in Korea. They will also have a chance to visit the 2010 Korea Science Festival, the largest science event in Korea, where they can experience various hands-on science programs presented by many Korean schools, institutes and many international participants from overseas science museums/centers and volunteer groups.

Cultural Programs

Besides academic programs, ISEC 2010 provides cultural experience program, which will allow students to experience and better understanding of different cultures.

1. Getting Acquainted

Participants from different countries can be acquainted and develop friendship among themselves by showing their talents or introducing their hobbies in every area including singing, dancing, playing musical instruments at the welcoming party. ISEC is not only to learn, but to have fun and make friends!

2. Seoul Tour

Seoul is the capital city of South Korea. The total area of Seoul is 605.52 square kilometers. The Hangang (River) bisects the city into two parts: northern part and southern one. Seoul has a population of 10,492,176 as of 2009 (This accounts for about a quarter of the total national population). Seoul Tour includes historical sites and the place to experience Korean contemporary cultures.

- Gyeongbokgung Palace: the most representative edifices of the Joseon Dynasty, Established in 1395
- Cheong Wa Dae (Blue House): House of the presidential residence
- Myeong-dong & Namdaemoon market: Famous shopping place, etc.
- Insa-dong: an art street with old but precious and traditional goods on display
- Namsan Park & N Tower: A symbolic mountain located at the center of Seoul. At N Tower (479.7m), you can view the whole landscape of Seoul and the West Sea beyond Incheon.
- Korean Folk Village: Living museum that recreates the Korean lifestyle of centuries ago. Potters, weavers, blacksmiths, and others practice the traditions.
3. Experiencing Korean Culture

This program includes several activities that provide exotic experiences of Korean music (Samulnori), martial art (Taekwondo), pottery, and traditional clothing. Experts in each area are invited to demonstrate and teach those activities and so participants will taste each activity with lots of fun.

- **Samulnori**: Samulnori, Korean traditional arts, basically refers to the four instruments (kwaengwari, jing, janggu, buk). Musicians dynamically play the instruments and dance with special customs.
- **Korean Art Performance**: There will be an opportunity to see one of the most famous theatrical performances produced in Korea during the camp.
- **Traditional Clothing**: Korean traditional clothing, called Hanbok, is well known as both its bright colorings and flowing lines. Participants have a chance to try them on and feel Korean traditional culture. (*If you bring your traditional clothes, Korean students can also experience your culture!*)
III. Information for Participation

1. How to Participate in ISEC 2010

- Organizations/Institutions cooperating that would like to send their delegates to ISEC 2010 shall contact the officer in charge in respective embassies in Seoul and inform your participation. The teams informed to KOFAC by the embassies in Seoul by March 2010 will be the official delegate of each country. If you are not sure where to contact for the official entry, please contact ISEC 2010 organizers for assistance.

- Organizations/Institutions cooperating as the oversea counterparts will organize each country’s delegation through a fair competition or evaluation of their own methods. Number of Participants per each country should not exceed 6 people, which includes 5 students and 1 teacher/conductor.

- Details of ISEC 2010 program will be posted on its website in February 2010.

- Please fill out the application form, which will state the exact member of your delegation, and send it via e-mail or fax to international@kofac.or.kr(e-mail) or 82-2-555-2355(fax) no later than 30 April, 2010. If you need more time for organizing your delegation, please let us know beforehand.

- After the confirmation by KOFAC, each participant will be able to register online at the ISEC website (http://www.isec.scienceall.com) and fill out needed information. The online registration will be available from May 2010 and should be completed within June 2010.

- Participating countries are responsible for the airfare and registration fee (USD200/person) for their respective participants. The registration fee includes all expenses associated with participants’ stay in Korea, including accommodation, meals, local transportation, and other expenses. ISEC 2010 organizers will provide a bank account that you can transfer the registration fee after the confirmation of the application form. We can not accept credit cards or checks.

- If there is any individual who would like to participate in the ISEC 2010, but cannot find the appropriate organization in her/his country, please contact ISEC 2010 organizers for assistance.

2. Accommodation, Meal, and Transportation

- We provide all participants with local accommodation, meal, and domestic transportation.
• There will be the Airport pick-up from the Incheon International Airport to Seoul National University. ISEC staffs will be at the Airport to assist you.
• We plan to have the orientation \textbf{19:00 pm on 1 August}. We recommend international participants \textbf{to arrive between 12:00-15:00 pm on the same day}.
• If your flight schedule is decided, please let us know.
• Please understand that students from different countries may share a room according to the situation.
• \textbf{Sorry, we cannot support international airfares.}

3. Participating in Programs
We encourage participants to actively get involved in 2010 ISEC programs.

• \textbf{Student Seminar}: Please share your areas of interest and research, your inventions, or experiences of lab works, future plans, etc. with other participants in a small group. We expect students to have the opportunity to present their ideas in front of others in the seminar. The themes may be posted on the website in February 2010.
• \textbf{Lectures}: We encourage several teachers to give students a hands-on science lecture to let students experience the fun of science and give them inspirations.
• \textbf{Short performance for the Welcoming Party}: We plan to have a Welcoming Party and a small performance by each country’s team. It will bring all participants closer and make the camp more fun and exciting experience.
• \textbf{Teachers’ Seminar}: We expect teachers and accompanying persons to participate in a small group talk to share your ideas and ways of teach science in your country during a half-day seminar, which is only for the teachers.

4. Contacts

\textbf{Ms. JiYun Lee}
Department of Public Relations and International Cooperation
Korea Foundation for the Advancement of Science and Creativity (KOFAC)
T. +82-2-559-3855
F. +82-2-555-2355
International@kofac.or.kr
Appendix

About Korea Foundation for the Advancement of Science and Creativity (KOFAC)

Brief History
1967 Established as a non-profit organization of “The Association for Advancement of Korea Science and Technology”
1996 Reorganized as “Korea Science Foundation (KSF)”
2008 Renewed its name to “Korea Foundation for the Advancement of Science and Creativity (KOFAC)” and expanded its functions

Our Mission
KOFAC is a nonprofit organization, fully supported by the Ministry of Education, Science & Technology (MEST). The mission of KOFAC is "Establishing Creative Society based on Science" and its main functions are:

- Developing and supporting science communication activities
- Enhancing public understanding of science and global issues
- Reinforcing science and mathematics education
- Cultivating creative human resources and gifted students
- Promoting coalition of science, humanities and arts
- Managing the Creativity Resources Center

Our Directives and Programs

Directive 1: Involvement
In order to diversity and expand involvement, KOFAC has many programs for supporting & promoting science culture. The Korean government awards 100 creative and talented future leaders among the youth for "Korea’s promising future leaders award." KOFAC operates hands-on science class for youth at local community centers, and youth science club (YSC) for science club activities at school. To diversify the science culture experience, there is the Korea Science Festival, which is the biggest interactive science festival in Korea held every year. KOFAC also developed a science Volunteer program for university students who go to underprivileged areas to promote science education.
In order to enhance public awareness of 5 major global issues, KOAC is carrying out the RGB Campaign, in which Red stands for disease issues, Green stands for climate change, and shortage of energy and food issues, and Blue stands for water shortage issues. In addition to this campaign, KOFAC develops and distributes TV documentary programs, books and cartoons related to these issues for the general public as well as for school children.

Directive 2: Creativity
To enhance student's applied creativity to science, KOFAC is developing the national science and math education curriculum, and reinforcing science& math education in schools. To strengthen education for the gifted & talented oriented, the Korean government designates science oriented high schools. KOFAC also starts honors programs(HP) & undergraduate research program(URP) for college level gifted students. Since 2004, the Korean government has developed next-generation math & science textbooks, which are experiment-oriented and distributed to many schools. This year, KOFAC opened the Creative Resources Center where it collects and develops world class science and math resources for teacher training and education.

Directive 3: Collaboration
The twice monthly collaboration café is an arena for discussing future issues among people from science technology, humanities, and the arts. KOFAC supports diverse science-related collaboration activities, such as science theater plays, science visualization projects and storytelling projects where science is the main theme. At the end of year, we host a collaborated festival.

For more information please visit the website at [http://www.kofac.or.kr](http://www.kofac.or.kr).
About Seoul National University, College of Engineering

Seoul National University
SNU trains the most outstanding students in Korea in a wide array of areas in undergraduate, masters and doctoral programs. Its first-year undergraduate students belong to the top 1% of those who take Korea's national university entrance examination.

Faculty members at SNU are also highly qualified and deeply committed to research and teaching. Of all faculty members, 96% have doctoral degrees, most of which have been earned from prestigious universities around the world. More than one-third of the CEOs in the top 500 Korean companies and 44% of the ministers and vice-ministers in the Korean government are SNU graduates.

College of Engineering, SNU
Brief History
College of Engineering at Seoul National University (SNU) started in 1946 with 10 departments. During its 63 years of relatively short history, the college underwent a colossal transformation to become a global leader in engineering education and research. The Ministry of Education funded Brain Korea 21 project strengthened and elevated the capacity of the college as a research oriented institute. The college is expanding its campus with smart facilities for state of the out research. Recent peer review of the college by department evaluated by the international committee has ranked all programs within top twenty in the world.

Education System
The College of Engineering is composed of 11 departments, including Architecture, Chemical and Biological Engineering, Civil and Environmental Engineering, Computer Science and Engineering, Electrical Engineering, Energy Resources Engineering, Industrial Engineering, Materials Science and Engineering, Mechanical & Aerospace Engineering, Naval Architecture and Ocean Engineering, and Nuclear Engineering. It emphasizes creativity, business ability, and relevant engineering fundamentals through comprehensive curriculums. There are 12 research institutes that focus on theory and practical application of the studies while working in close liaison with international colleges and institutes. Furthermore, there are 18 research centers which aim to
contribute and develop industries through applying the results of world renowned high-tech research. The globalization of research is realized through international communication and exchange with numerous international universities and research institutions.

The 60,000 alumni of College of Engineering, Seoul National University are a virtual who’s who of automobile, shipbuilding, and semiconductor industries in the world. We are advancing to develop into an international research-oriented university that focuses on graduate schools putting priority on chosen research fields. At the same time, the undergraduate studies will continue to produce global leaders of knowledge based society of 21st century. College of Engineering, Seoul National University is focusing on leadership development, merging traditional engineering education with business and social science education.

**Interdisciplinary Programs**

The objective of the interdisciplinary programs whose work cuts across traditional departmental boundaries is to produce leaders for the 21st century by balancing engineering professionalism and business strategies. The program is devoted to the principle of maximizing the merits of interdisciplinary studies through an interdisciplinary approach utilizing its own faculty as well as outside faculty and professionals. There are Interdisciplinary Program for Automotive Engineering Major, Bioengineering Major, Technology Management, Economics, and Policy and Urban Design.

For more information please visit the website at [http://eng.snu.ac.kr/](http://eng.snu.ac.kr/).