

Cell Biology in South Korea

South Korea is an example of a country that was able to develop swiftly to become part of the cutting-edge Science and Technology research world, after overcoming many historical ordeals from the Wars to the recent global financial difficulties. Now, more than 60 universities and institutions around the country host international scholars including both students and faculties to achieve excellence in Biomedical Science and Technology. National Research Foundation of Korea (NRF), the Korean Government driven research funding agency, has successfully launched various funding programs to support collaborations between South Korean researchers and international scholars from North America, Europe, and Asia etc.

There are 22 national universities and about 130 private universities with Biomedical Graduate Programs in South Korea. Seoul National University (SNU: <http://biosci.snu.ac.kr/>, <http://oia.snu.ac.kr/study/03.jsp>) is the first national university founded in South Korea. SNU has made major contributions in the field of Molecular and Cellular Biology, highlighted by researches of micro RNA, DNA editing utilizing CRISPR, and Neuroscience. Other national universities are established in each providence:

Kyungpook NU (<http://en.knu.ac.kr/>),
Chonnam NU (<http://altair.chonnam.ac.kr/~biology/vol2/>),
Chungnam NU (<http://sbb.cnu.ac.kr/bk21plus/eng/>),
Chungbuk NU (<http://biology.chungbuk.ac.kr/>),
Chonbuk NU (<http://en.jbnu.ac.kr/main/main.php>),
Kangwon NU (<http://www.kangwon.ac.kr/english/main/main.php>),
Gyeongsang NU (<http://eng.gnu.ac.kr/main/>),
Pusan NU (<http://international.pusan.ac.kr/>) and
Jeju NU (http://www.jejunu.ac.kr/_2014/eng/acad/01.jsp?dcode=700&hcode=702).

KAIST (Korea Advanced Institute of Science and Technology: <http://www.kaist.ac.kr/html/en/>), a world-renowned both undergraduate and graduate education, and research institute directly funded by Korean government, hosts vibrant basic biomedical research programs such as Brain Science and Engineering. GIST (<http://ewww.gist.ac.kr/>, <https://life1.gist.ac.kr/eng>, Gwangju Institute of Science and Technology), another government-funded institute, is located in Gwangju, the largest city in southwestern Korea. A couple of research institutes have been added to the list of Korean government-funded advanced institutes of Science and Technology: DGIST (Daegu Gyeongbuk Institute of Science and Technology: <http://brain.dgist.ac.kr/eng>) and UNIST (Ulsan National Institute of Science and Technology: <http://jbkim.unist.ac.kr>, <http://hsscrc.unist.ac.kr>). These institutes have been actively recruiting students and faculties all around the world. POSTECH (<http://www.postech.ac.kr/life/st>, <http://www.postech.ac.kr/international/eng/main.php>) is the highly competitive research institute provided by POSCO, one of the largest steel companies in the world. DGIST, UNIST and POSTECH are all located near each other within 1 hr drive in southeastern area of the peninsular, and also easily reached by the fast-track train from Seoul, the capital city of South Korea. Some other research centers supported by government funding are KRIBB (Korea Research Institute of Bioscience and Biotechnology: <http://www.kribb.re.kr/>), KIST (Korea Institute of Science and Technology: http://eng.kist.re.kr/kist_eng/main/) and Institute Pasteur Korea (<http://www.ip-korea.org>). IBS (Institute of Basic Science, <http://www.ibs.re.kr/eng.do>), the Government funded project launched in 2012, is headquartered in Daejeon near KAIST, and host up to 50 satellite laboratories in basic science including Mathematics, Physics, Chemistry, Life Science and Interdisciplinary subjects between them. Recently, IBS actively recruits international researchers with highly competitive package of job offer at graduate, post-doctoral, and faculty levels.

There are approximately 40 universities and institutes in Seoul vicinity where active and dynamic research efforts always take place. Yonsei University (<http://www.yonsei.ac.kr/eng/>), founded in 1886 by western missionaries, is the oldest University in South Korea. There are three major biomedical research institutions, in addition to the School of Medicine: Dept. of Biochemistry, of Biotechnology, and Systems Biology, which are interested in Human Genome Projects, Drug Delivery System, Epigenetics, Plant Pathology etc. Korea University (<http://lifesci.korea.ac.kr/>) focuses on the signaling mechanism and roles of eicosanoids, bioactive lipid molecules, in the pathogenesis of human diseases. Ewha Womans University (<http://oga.ewha.ac.kr/>) is the largest Women's University in South Korea. Hanyang University (<http://www.dic.hanyang.ac.kr/>) currently hosts most international students in Korea. Hanyang medical school and other faculties from Life Science and Bioengineering department launched Biomedical Engineering Graduate Program (<http://www.dic.hanyang.ac.kr/>), especially focusing Custom Therapy utilizing iPS technology. Some other universities running competitive research programs in Seoul Vicinity are

Sogang University (<http://home.sogang.ac.kr/sites/elifescien>)
Sookmyung Women's University (<http://e.sookmyung.ac.kr/contents/contents.jsp?cmsCd=CM0438>),
Sungkyunkwan University (http://www.skku.edu/index_pc.jsp)
Konkuk University (<http://www.konkuk.ac.kr/Administration/Abroad/>)
Sejong University (www.sejong.ac.kr/)

Kyunghee University (<http://www.khu.ac.kr>)

Ajou University (<http://www.ajou.ac.kr/english/intro/main.jsp>)

Chung-Ang University (<http://www.cau.ac.kr>)

Dankook University (<http://global.dankook.ac.kr/>)

University of Seoul (www.uos.ac.kr/)

And more: http://en.wikipedia.org/wiki/List_of_universities_and_colleges_in_South_Korea

These private and public universities offer strong research and education programs in fundamental and applied biological sciences, and have experience to host international scholars around the world.

Korean academic year starts March, and there are four semesters a year including Summer (late June to August) and Winter (late December to February) semesters. There is usually one call (March) a year for undergraduate programs and two calls (March and September) for graduate programs. The application period is usually a couple of months before the start of each call. Tuition ranges from \$2,000 to \$5,000 per semester. Various funding programs can be arranged through academic advisors in each school, depending on the applicant's merit and background. More information can be found in the university websites. Interested students are encouraged to contact individual faculty members who do a research of interest.

Post-doctoral training opportunity is also available and the advertisement for these positions is often posted in <http://bric.postech.ac.kr/> and <http://hibrain.net/>. Many young and enthusiastic faculty members eagerly recruit international post-doctoral researchers with strong research and communication skills around the world. Individual direct contact with these faculties with early career is highly recommended to find out funding and housing.

The public research programs are primarily supported by the **National Research Foundation of Korea** (NRF: www.nrf.re.kr) Global Research Laboratory (GRL) program is an successful examples of international collaboration supporting funds. GRL program has been designed to promote international collaborative research between Korean and foreign laboratories. A proposal submitted for the GRL program should address a research topic which requires Korean and foreign research partners to engage in close collaboration for the attainment of significant scientific and technological goals. The maximum funding term is 6 years and the annual budget is up to KRW 500,000,000 (~ US\$ 400,000) per year. In order to apply the international collaboration funding awards in future, the actual research collaboration with Korean researchers is highly encouraged. **Samsung Science & Technology Foundation** (www.samsungstf.or.kr), the recently founded funding agency, has been supporting more than 270 projects since 2013, funded with approximately \$400,000 each year for 5 years. Samsung S & F Foundation is open to international scholars who are affiliated with Korean institutions full-time base.

South Korea is an attractive place to visit, in order to meet enthusiastic scholars and find out current research trends in East Asia. **Korean Society for Molecular and Cellular Biology** (KSMCB: www.ksmcb.or.kr) and **Korean Society of Biochemistry and Molecular Biology** (KSBMB: www.biochem.or.kr/) hold annual international conferences every October and May, respectively, gathering at least 3,000 students, post-docs and faculties, and the number of participants continue to grow. This coming International Conference of KSMCB will be held in October, 2016, more than 2,000 attendants from 12 different countries were gathered. Emmanuelle Charpentier (Max Planck Institute), Sue Goo Rhee (Yonsei Univ.), Irvin L. Weissman (Stanford Univ.), Alex Rudensky (Memorial Sloan-Kettering Cancer Center) and Daniel Klionsky (Univ. of Michigan) will give plenary lectures. Hopefully, we can meet ASCB attendants in these exciting meetings in Seoul, again to share prosperous research resources with other Biomedical scholars around the world. The next International Conference of KSMCB will be held in October 2017, at COEX in Seoul.

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