

Seoul National University

San 56-1 Sillim-dong, Gwanak-gu, Seoul, 151-742, Korea www.snu.ac.kr

Seoul National University Intellectual Pioneer 2007



02 SNU NOW 03



# From a leader in Asia to a global powerhouse

#### First in Korea

- Undergraduate students without parallel: SNU only accepts the very top-ranking high school seniors, based on their school grades and results from the highly competitive National Entrance Exam. On average, students score in the top 3.5% of their graduating classes.

### Globally Competitive

- Seoul National University ranked 51st among universities worldwide according to the *The Times* Higher Education Supplement, up from 63rd in 2006.
- SNU ranked 7th in engineering and 13th in the natural sciences in terms of published faculty research by Shanghai Jiao Tong University's "Academic Ranking of World Universities"
- A 2007 École des Mines/Paris Tech survey on the professional rankings of universities found SNU to be number 32 worldwide in producing global Fortune 500 CEOs.

### [ International Partnerships ]

Academic collaboration with the top universities in Europe, Asia, and the Americas ensures SNU students study with the best in Korea and the best abroad.

In partnership with top European business school ESSEC (École supérieure des sciences économiques et commerciales), SNU operates a joint MBA through the College of Business Administration and a double masters degree program through the Graduate School of International Studies.

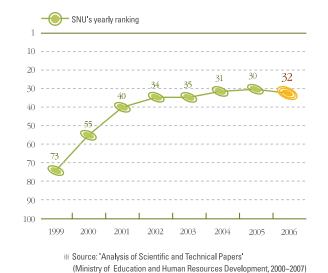
The College of Business Administration also offers a double MBA with Duke University's Fuqua School of Business, ranked 15th worldwide by the *Financial Times*.

A joint degree program with the École des Mines de Sainte-Étienne and SNU's College of Engineering provides masters and Ph.D. students access to the leading research and technical advances in mining and natural resource engineering.

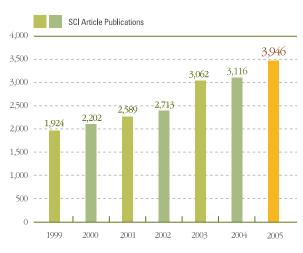
Beginning in 2008, a double doctorate degree between the University of North Carolina, a leading center for genomics research, and SNU's College of Agricultural and Life Sciences, and a double degree exchange agreement between Moscow University and SNU's College of Medicine will continue to promote collaborative scholarship in the biomedical fields.

## **Research Activities**

# SNU's Yearly Ranking in the World by Number of SCI Publications

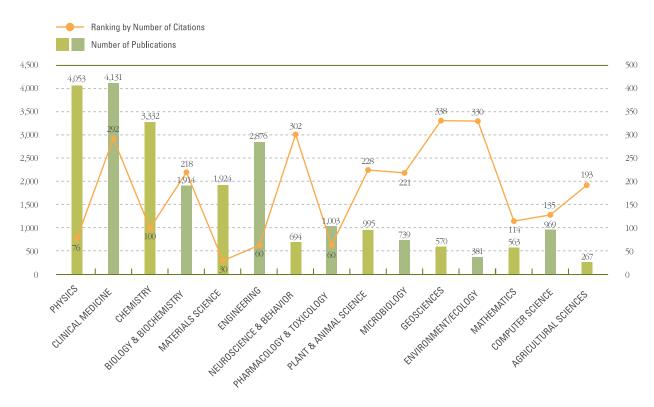


#### SCI Article Publications



Source: 'Analysis of Scientific and Technical Papers'
 (Ministry of Education and Human Resources Development, 2000~2006)

#### ESI Results for Seoul National University (1996.1-2006.6)



- \*\* Reference: Analysis of the SCI DB Evaluating Research by Ministry of Education and Human Resources Development, 2006
- striangle ESI (Essential Science Indicator) offered by Thomson Scientific indexes the top 1% of science publications in the most recent 10 years of data.

**04** SNU NOW / LAB INTERVIEW **05** 

### **Research Activities**

# A Fruitful Combination: Private Funding, Public Know-How

Professor Jeong-Sun Seo and his team have been on the front lines of genomic research with their biotech startup Macrogen, launched out of Seoul National University's laboratories in 1997. This joint private-public venture fuses entrepreneurial ambition to academic know-how: Dr. Seo and his colleagues have made their mark through their work in DNA microarrays, gene targeting technology, whole genome sequencing and the Korean Genome Project. Already, Macrogen leads the field in whole genome sequencing and assembly - every morning samples arrive from over 60 countries worldwide, while Macrogen's "knock-out" mice, mice that have been engineered to lack a specific gene, are requested by top scientists for experimental studies.

Macrogen's applied biotech advancements have made essential research possible in labs across the world. Said Professor Seo, "Recently we participated in a joint research project led by Professor Kono at Tokyo University. While their research in parthenogenic mice was leaps and bounds ahead of anyone else, Professor Kono's team lacked a way of verifying their results that would satisfy the journal *Nature*'s stringent requirements. Our microarray chip was the solution. Finally we could publish a monumental paper on the parthenogenesis in *Nature*."

How did Professor Seo and the rest of the Macrogen crew come to occupy such an important niche in the global scientific ecosystem? He explains that back in 1997, when the venture was just in its infancy, a representative of Celera Genomics on a visit to Asia triggered a key realization. "I learned that the age of the public sector is fading away and the age of the private sector is coming. That is, medical services should focus on user's demand." But university facilities are not equipped to handle such quick turnaround in genome sequencing and it became evident that a private company would be more flexible and responsive to market demands. Taking advantage of new regulations under Korean law that permitted joint public-private efforts, Professor Seo

Professor Jeong-Sun Seo's Research Team



and his colleagues merged the best of both worlds to create their new brainchild.

Says Professor Seo, "Bio-digital convergence is a phenomenon we are experiencing right now. After the IT revolution paved the road, the bio tech revolution is putting the content that will travel along those pathways." As a professor of medicine, Professor Seo envisions a future where medical services can be truly personalized thanks to such technological advancements. Macrogen is laying the infrastructure for this future. He confidently predicts, "Around 2012, personal genome sequencing will cost only 1,000 USD. Our goal is to occupy 40% of that market and to be the major player in this field in the world."

To help support young researchers who also hope to make a major impact not just in the academic world but in the industry as well, Professor Seo suggests that Seoul National University provide more flexibility in its research support. He also urges, "Motivation of science should change from pure interest into making a contribution to humanity. Science should make a difference in the real world, not just on paper."

Unlocking
the 21st-Century
Agricultural Revolution

Professor Yong-Hwan Lee's Research Team



The College of Agriculture may sound like a less than glamorous academic base for Professor Yong-Hwan Lee, but he shrugs off any jokes about just sitting around watching the grass grow.

"Half of the world's population relies on rice as their staple food. If we exterminate rice blast [a pervasive fungus that infects rice, depriving 60 million people a year of food], we can stabilize crop production." Agricultural pathogens have literally moved nations; the potato blight precipitated the Irish diaspora, 2 million people died in South Asia because of a leaf blight that afflicted rice crops.

Professor Lee's recent groundbreaking research on fungi, published in the prestigious journal *Nature Genetics*, is aimed at furthering the green biotech revolution, saving countless human lives while simultaneously protecting the threatened environment.

While Korean scientists often pursue joint research with other international science teams, who frankly have often been further along in their endeavors, Professor Lee's research was

formulated and conducted entirely in Korea. Asserts Professor Lee, "I think our research fully represents our potential, and it ensures that we're at top of the field when it comes to fungal functional genomics." With the genome of rice completed in 2002 and that of the rice blast fungus in 2005, scientists are racing to analyze their functions at the genomic level.

For the team's research, Professor Lee discovered that they required a 'high-throughput screening system,' a new research tool that the scientists ended up memorably ransacking their laboratory in the course of finding materials to develop. This creativity and flexibility extended to the bioinformatics system database, which they custom-developed with the input of Seoul National University undergraduates.

Professor Lee stresses, "I try make our students both feel free and feel responsible for their work." As he anticipates interdisciplinary research will be increasingly important, he believes that cultivating a strong cooperative work ethic is key to unlocking the potential of the biotech revolution.

**06** SNU PEOPLE SNU PEOPLE **07** 



Ki-Moon Ban UN Secretary-General

# The Responsible Dreamer

In his wallet, UN Secretary-General Ban Ki-moon carries a well-worn scrap of paper inscribed with Chinese characters that pertain to every age and phase in a person's life. Now that he is in his sixties, Mr. Ban aims for "discernment," a quality essential to fulfilling his duties at the United Nations. In our twenties, however, he insists that we must learn responsibility.

During a speech at Seoul National University last year, Mr. Ban advised students to learn not only how to dream, but also how to be responsible. The twenties is a time of emergence into adulthood and accountability. Practicing responsibility, even in the most trivial cases such as keeping an appointment or fulfilling a promise to a friend, will prepare students to tackle tasks of greater significance and scale. Nowadays the

Secretary-General faces the much more large-scale missions of averting starvation, securing peace and mitigating environmental disasters, but even these enormous challenges must be addressed step by step.

"I emphasize the word, potential. Success is seldom foreor-dained. What is important is to try," wrote Mr. Ban in the recent article "Why the World Has Changed in the UN's Favor." His emphasis on effort is consistent with the slip of paper he carries. He urges students to devote themselves to the responsibilities of each season of their lives, in order to be prepared for the next phase. Says Secretary General Ban, "Dream beyond your wildest thoughts, but also have a firm grip on reality."



To students considering a career in foreign service, he underscores the importance of tact, assiduity and sound judgment. In his interview, he stated that there is no particular set of talents or skills required to become a diplomat. However, some personalities are better suited for the job. For instance, "diplomats must be able to anticipate what others are thinking and react accordingly," he explained. Moreover, Mr. Ban, undoubtedly a sedulous student all his life, added that diplomats must be relentless in their pursuit of knowledge, which should include not only their national concerns but also international affairs.

Mr. Ban urged all Koreans to widen their scope of interest.

"We must not be obsessed with problems within the peninsula; we must also be concerned about problems abroad that jeopardize the universal values of peace, development and human rights, put forth by the United Nations," he declared. As global citizens, Korean youth should be engaged in the world, beyond the narrow issues of self-interest. Growing an awareness of critical human rights issues is a duty required of every responsible student.

#### [ Brief Profile ]

#### Education

- B.A. Seoul National University (1970)
- · M.A., Kennedy School of Government at Harvard University (1985

#### Career highlights

Ban, in office for 33 months, was one of South Korea's longerserving foreign ministers - surviving the sometimes turbulent diplomacy on the divided Korean peninsula.

Ban has always been proud of his 36-year career in the foreign service, which has included 10 years on UN-related missions. Ban had a stint as first secretary at South Korea's UN mission from 1978 to 1980 and was director of the foreign ministry's UN division

He served as South Korea's chief envoy to the UN for two years from 2001 and also led the cabinet of the president of the 56th UN general assembly.

Ban became foreign minister in January 2004 after a spell as chief presidential foreign policy advisor during a period of tension over North Korea's nuclear ambitions.

#### **Prizes and Awards:**

 ROK's Highest Order of Service Merit for service to his country (1975, 1986 and 2006) 08 SNU PEOPLE 09

# A Support Network for Justice

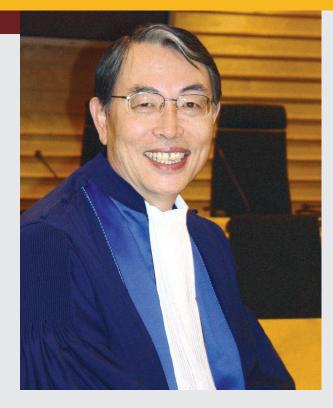
#### Sang-Hyun Song J Judge at the International Criminal Court

Judge Sang-Hyun Song of the International Criminal Court (ICC) strongly advises current SNU students to avoid instant gratification. One of the world's arbiters of justice for humanity, he attributes his current position to continuous effort over the decades. Though ubiquitous computing seems to suggest that speed is the key determinant of success in the twenty-first century, Judge Song asserts that there are no shortcuts to realizing one's full vision.

Judge Song's dedication to justice sprang from his student days at SNU nearly half a century ago. A belief in fair elections and the importance of democracy prompted Judge Song's involvement in the student protests of April 1960. "The SNU student protests were my first realization of my personal role in preserving a civil society, one dedicated to the ideals of democracy," Judge Song stated.

Thus, Judge Song believes that the SNU of today should incorporate even greater opportunities for public service and public interest work in its educational curricula and campus activities. Early exposure to real world problems fosters students' practical skills and prepares them to fulfill their responsibilities as members of a larger society. In a globalized world, the necessity of an educated and engaged citizenry is even more important.

Of course, being a graduate of SNU not only means a legacy of



civil participation, but also access to a far-flung network of alumni in any number of fields. During the interview, Judge Song expressed his appreciation for the support he received during his election to the ICC. "I felt immense pride in my alma mater during the course of my campaign. I received tremendous encouragement from SNU alumni from all fields." With the close bonds forged on campus combined with a commitment to battling injustice, Judge Song has found the long-term combination for his own success in the global arena.

#### [Brief Profile]

#### Educational Background:

- LL.B., Seoul National University Law School (Korea, 1963)
- J.S.D., Cornell Law School (U.S.A., 1970)

#### **Employment and Other Experience:**

- Professor of Law, Seoul National University (1972 2007)
- Visiting Professor, Harvard Law School (every Spring Semester 1991, 1995, 1999, 2003)
- Inge Rennert Distinguished Professor of Law, Global Law

Program, New York University (1994-)

- Judge, Appeals Chamber, International Criminal Court (2003.3 - )

#### Other Affiliations:

- Arbitrator, International Center for Settlement of Investment Disputes (ICSID), World Bank (1986- )
- Vice President, The UNICEF/ Korea (1998-)
- President, The Korea Childhood Leukemia Foundation (1999-)
- Member, Board of Directors, The Beautiful Foundation (2000 )

# The Rewards of Compassion

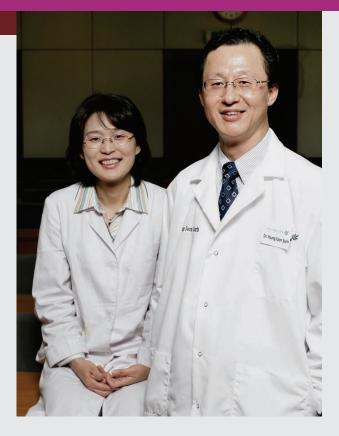
[ Professor Young-Joon Surh ]

Talent is meaningless without virtue. This ancient Asian proverb has found its perfect embodiment in the research team of Professor Young-Joon Surh at SNU's College of Pharmacy.

Professor Surh's research team has swept the Scholar in Training Grant from the American Association for Cancer Research for the past eight years. At the lab conducting research day and night, his team has a well-deserved reputation as workaholics.

But the pursuit of knowledge alone is insufficient. Professor Surh exhorts his fellow SNU graduates to exercise compassion and generosity in their positions of influence and authority. "Do not try to dominate others through intellectual power. As the leaders of this society, we must have compassion for the less fortunate, even if demonstrating such compassion may lessen our own wealth or power."

Research team member and five-year consecutive winner of the Scholar in Training Grant, Dr. Hye Kyung Na shares
Professor Surh's vision. "Though I have been researching in cancer prevention over the last ten years, I have received numerous lucrative offers to pursue research in other fields.
But thinking of the faces of cancer patients and their families is what keeps me committed and makes it easy for me to turn



down even the most financially tempting of offers." Compassion for their suffering is what motivates the research team to devote endless hours at the laboratory.

Both scholars urge SNU students to cultivate compassion in addition to academic excellence. The joy of successfully helping others is a reward that cannot be matched.

#### [ Brief Profile ]

#### **Education & Academic Training/Appointment:**

- PhD (1990): University of Wisconsin-Madison (major: Oncology/ Toxicology)
- Postdoc (1990-1992): Massachusetts Institute of Technology
- Assistant Professor (1992-1995): Yale University School of Medicine

#### **Honors & Awards:**

- Listed in Marquis "Who's Who in America" and
- "Who's Who in the World"
- Worldnutra Merit Award (2006)
- Ochi Young Scholar's Award (1995)
- American Cancer Society Special Research Interest Award (1992)

#### **Professional/Editorial Appointments:**

- Associate Editor/Editorial Board member for 12 SCI International
- Co-editor of two biomedical books published through CRC Press and Springer-Verlag

#### **Publications:**

About 150 publications in peer-reviewed international journals and 50 review articles/ book chapters (the first Korean scientist who published an article in *Nature Reviews*)

10 SNU PEOPLE 11

# A Scientist, A Scholar, A Mother

## Professor V. Narry Kim

"Overwhelmed by the endless stacks of books, I was awed by the sheer amount of knowledge that had preceded me," recollects Professor V. Narry Kim. During her undergraduate years, she would sit in her favorite spot in the main library browsing through books, longing to absorb all the accumulated knowledge.

Professor Kim, the recipient of the "Young Scientist Award" from KOSEF (Korea Science and Engineering Foundation), is best known for her RNA research. When asked about her university days, she paints a picture of a young undergraduate with less than stellar grades but an unquenchable drive to achieve in academic research that has propelled her through the difficult patches of her career. Kim emphasizes that today's students need to have greater confidence when expressing their own opinions and today's professors should let go of their traditional hierarchal arrogance. Then, she predicts, a truly lively and respectful culture of discussion can take root on campus. This freedom and give-and-take of ideas is the groundwork for nurturing global leaders, Professor Kim emphasizes. "The only thing hindering Seoul National University from achieving the next step is the passivity of students who aren't being challenged to develop their own perspectives."

Professor Kim ended the interview by frankly sharing the moment of despair when she believed she might have to abandon her research. "Giving birth and raising children are blessings, and at the same time, obstacles for most career

#### [Brief Profile]

#### Research interests:

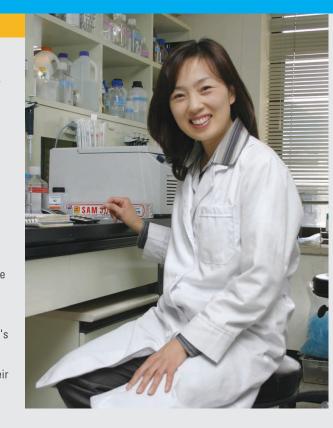
RNA-mediated gene regulation

#### Education:

B.A. and M.S., Seoul National University (1988 – 1994) D.Phil., Oxford University (1994 -1998)

#### **Professional Experience:**

- Postdoctoral fellow, University of Pennsylvania (1999 2001)
- Assistant Professor, Seoul National University (2001-)



women. I was no exception," she stated. Only the support from her academic adviser and her family, in addition to her passion for research, sustained her through these difficulties.

Lamenting the current lack of social support in Korea, Professor Kim encourages SNU to become a pioneer in providing systematic family and child care support for the women who constitute half the graduate and post-graduate population. "I envision SNU as a supportive nest where women as well as men can develop their passion for research to their fullest potential, and everyone can celebrate the fruits together."

#### Awards:

Young Scientist Awards (2007), Thomson Scientific Citation Laureate Awards (2007) L'Oréal-UNESCO "For Women in Science" Award (2007)

#### Publications

- MicroRNA maturation: stepwise processing and subcellular localization. EMBO Journal (2002) 21: 4663-4670
- The Nuclear RNase III Drosha Initiates MicroRNA Processing. Nature (2003) 425:415-419
- Molecular Basis for Primary MicroRNA Processing by the Drosha-DGCR8 complex. *Cell* (2006) 125:887

# SNU Alumni Engines of Innovation



Jong-Yong Yun (Class of '66, Electronics) Vice Chairman and CEO of Samsung Electronics



Ku-Taek Lee Keh-sik Min
(Class of '69, Metallurgy) (Class of '65, Naval
CEO of POSCO Architecture Engineering)
(Fig. Cheirmagnad CEO



Keh-sik Min
(Class of '65, Naval
Architecture Engineering)
Vice Chairman and CEO of
Hyundai Heavy Industries

Shin-Bae Kim
(Class of '78,
Industrial Engineering)
CEO and President of
SK Telecom



Mi-kyung Lee (Class of '81, Home Management) Vice Chairman of CJ Entertainment Won the Business Award of the "2006 Women's Award" for the first time as an Asian woman

A September 2007 study by the École des Mines de Paris surveyed global Fortune 500 CEOs to find which of the leading institutions of higher education had produced the greatest number of executives. Seoul National University came in 1st among Korean universities, and 32nd worldwide.

Among the CEOs of the top 100 Korean companies, 37.7% are SNU alumni. This roster includes globally recognized CEOs: Mr. Jong Yong Yun of Samsung Electronics, who was listed in Barron's World's Best CEOs, the annual list of the top thirty CEOs published by Dow Jones & Company; Mr. Ku Taek Lee of POSCO, which is one of the world's largest and most innovative steel producers; Mr. Shin Bae Kim of SK Telecom, the first to commercialize CDMA and HSPDA services; and Mr. Keh-sik Min of Hyundai Heavy Industries who bumped Mitsubishi from the top shipbuilding spot and who, along with three other SNU graduates, is responsible for four out of the top seven dockyards in the world.

In an economy increasingly geared towards services and media, we can find Korea's largest entertainment firm, CJ Entertainment, with Ms. Mi-Kyung Lee in the Vice Chairman perch, whose impressive record resulted in her becoming the first Asian to win the Woman's Award in 2006. Even more recently in the financial sector, as just one example of SNU alumni on the move, Mr. Yung-ku Ha accelerated up the management ladder at Citibank to become the CEO of Citibank Korea in May of 2007.

SNU graduates populate the cutting edge industries from biotech and pharmaceuticals to mobile phones. Korea's role as an early adopter of mobile phone technology amply prepared Kee Soon Kim to step into the Finnish firm Nokia. Other multinational companies have benefited from SNU-trained leadership: Janssen with Je Hwa Park in Hong Kong; and chemicals giants such as the German-founded BASF and the U.S.-based Dupont handpicking Chin Wook Cho and Cheoroo Won as their go-to people in the Asia Pacific region.



Yung-Ku Ha (Class of '76, International Economics) CEO of Citibank Korea INC



Kee-Soon Kim (Class of '76, Mechanical Engineering) CEO of NOKIA TMC



Je-Hwa Park (Class of '72, Pharmacy) Janssen Taiwan/Hong Kong Managing Director



Chin-Wook Cho (Class of '75, Chemical Engineering) Chairman and CEO of BASF Company Ltd.

Cheoroo Won (Class of '75, Material and Science Engineering) President of Dupont Korea

12 SNU PEOPLE SNU PEOPLE 13







(Class of '66, Electrical Engineering) President of International Federation of Automatic Control



(Class of '71, Geography)

Geographical Union

(Class of '73, Medicine) Secretary-General of International Former President of World Federation of Nuclear Medicine and Biology



(Entered College of Music in 1963) Professor at the Juilliard School and Yale University



(Class of '88, International Relations) **Executive Vice President of** Citibank Korea INC.



(Class of '90, Pharmacy) Vice President of Strategic Marketing, Janssen-Cilag Asia-Pacific



(Class of '75, Economics) Vice-President of FIFA Former Chairman of Hyundai Heavy Industries

SNU alumni excel in academia, the public sector, and the creative fields as well. The country with the "most wired" sobriquet also has one of the most vibrant mass media markets -- and over one third of columnists came through Seoul National's rigorous writing programs. Doctorate-laden SNU alumni blaze trails in diplomacy and political science as advisors and negotiators. In academia, SNU graduates hold top professorships in disciplines as far ranging as the arts and engineering, including Julliard-trained violinist Hyo Kang who now teaches at Yale, the preeminent North Korean affairs specialist B.C. Koh who taught nearly 40 years at the University of Illinois, and tenured Brown philosophy professor Jaegwon Kim. SNU alumni have also risen to key positions in international scientific organizations such as Myung Chul Lee at the World Federation of Nuclear Medicine and Secretary-General Woo-ik Yu at the International Geographical Union.

Even the bright lights of the entertainment industry attract the

talents of SNU students who find success as actors and singers, demonstrating that an intellectual education and magnetic charisma can go hand in hand.

Within the national government, nearly half of the current members of the National Assembly are SNU alumni, a clear testament to the civic-mindedness of SNU graduates who enter public service in overwhelming numbers. In addition to their success at the ballot box, SNU alumni also populate the corridors of influence as administration officials. Of those at minister-level or higher, 61.3% are graduates of SNU.

Since its independence in 1945, Korea has experienced unprecedented economic and political development to become the global powerhouse of today. It is no exaggeration to say that the leadership of SNU alumni has been instrumental in this process. In the private and public sectors, SNU graduates have been at the forefront, to a truly astonishing degree.

#### SNU Alumni Non-SNU Alumni Unit: Head count

#### 1. 17th National Assembly of Korea

(2004-Present)



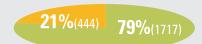
#### 3. Current Legal Profession

- including Judges, Public Prosecutors, and Lawyers (source: the Report on Korean Legal System, Prof. Do-hyun Kim of Dongguk Univ., April 21, 2006)

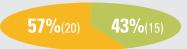


#### **5. CEOs of All listed Korean Companies**

(source: Korea Listed Companies Association & KOSDAQ, December 2006)

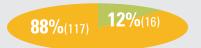


#### 2. Current Ministers of Korea Government



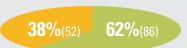
#### 4. Judges in High Court and Supreme Court

(source: Human Resources Dept., High Court, April 2007)



#### 6. CEOs of the Top 100 in Korean Companies

(source: Monthly Magazine "The New Management", May 2007)







(Class of '71, Chemistry)



(Class of '75, Architecture)

Young Leaders for

TIME's "Global 100 Roster of

(Class of '76, Medicine) Former Director-General of WHO



(Class of '79, LL.B.). The first female justice of the Supreme Court



(Entered College of Music in 1981)



# **Statistical** Figures as of July 1, 2007

# [ Faculty ]

#### 1. Faculty Head Count

Full-time Faculty			Full-time Equivalent Faculty				Others			
					Research Professor	Contracted Lecturer			Professor Emeritus	
1,111	384	460	413	65	33	33	43	1,863	606	5,011

#### 2. International Faculty Head Count

Currently Teaching Faculty	Inbound Visiting Faculty (2006. 3 - 2007. 2)	Outbound Visiting Faculty (2006. 3 - 2007. 2)	Total	
67	49	120	236	

# [ Students ]

#### 1. Official Number of Students (as of April 1, 2007)

Undergraduate		Total		
14,047	9,194	23,241		

#### 2. International Students

Undergraduate	Graduate	Exchange & Visiting (2006. 3 - 2007. 2)	Language Program (2006. 3 - 2007. 2)	Total	
911	613	161	883	2,568	

<sup>\*</sup> SNU students studying at overseas universities: 358 (2006. 3 - 2007. 2)

# [International Partnerships]

- University Level: MOU's with 165 Universities in 36 Countries
- Department Level: MOU's with 231 Universities in 30 Countries
- Research Institutes: MOU's with 135 Institutes in 20 Countries

#### **Total Number of MOUs Exchanged: 531**

\* MOU: Memorandum of Understanding

# Seoul National University

Published by Seoul National University PR Department Tel 82-2-880-9072 E-mail snupr@snu.ac.kr

<sup>\*\*</sup> Some students at SNU enroll for additional semesters as part time students. As of 2007, the registered number of undergraduate students including part time students is 19,209 and 10,086 in the graduate programs.