

# SNU Launching into the World



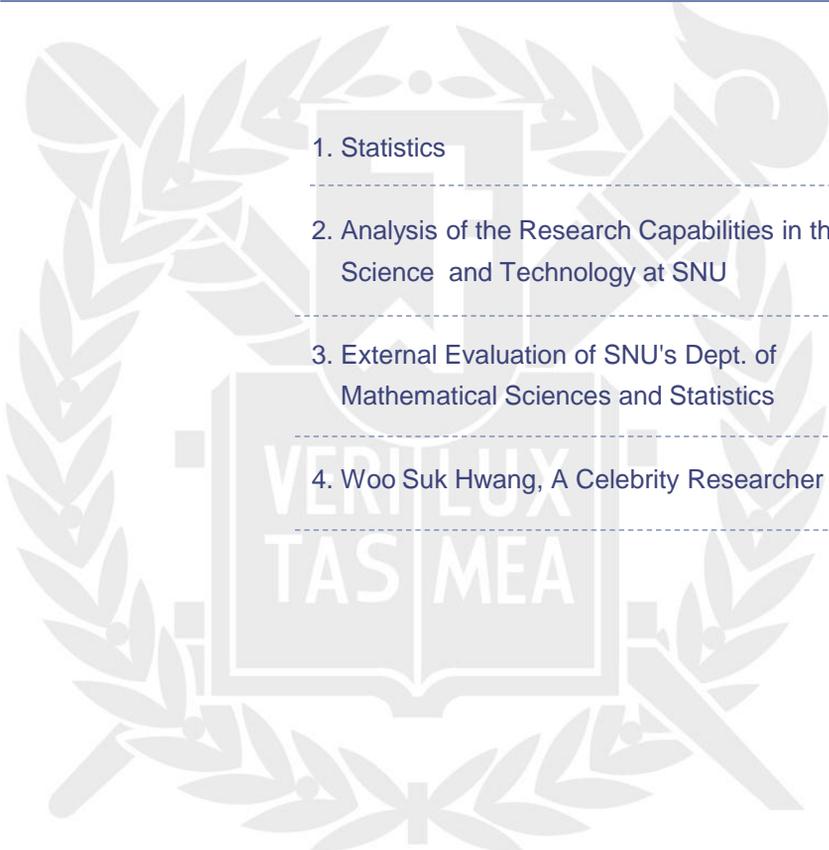
SEOUL NATIONAL UNIVERSITY

September, 2005

# SNU Launching into the World

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# 1. Statistics



SEOUL NATIONAL UNIVERSITY

# Number of Faculty Members

July 1, 2005

Department	Total	Department	Total
College of Humanities	175	College of Pharmacy	42
College of Social Sciences	114	College of Music	41
College of Natural Sciences	207	College of Medicine	427
College of Nursing	19	School of Dentistry	90
College of Business Administration	44	Grad. School of Public Health	27
College of Engineering	312	Grad. School of Public Administration	26
College of Agriculture and Life sciences	112	Grad. School of Environmental Studies	20
College of Arts	36	Grad. School of International Studies	24
College of Law	43	Office of General Education	36
College of Education	107	Office of Admissions	1
College of Human Ecology	28	Center for Agricultural Biomaterials	4
College of Veterinary Medicine	41	Research Institute for Veterinary Science	4
		<b>Total</b>	<b>1,981</b>



## Staff Members

July 1, 2005

Teachers at affiliated schools	193
Administrative staff	315
Librarians	83
Educational Specialist staff	7
Technical staff	331
Contract personnel	560
Guard officers	14
Education and Research Support personnel	514
<b>Total</b>	<b>2,017</b>

## Student Enrollment

April 1, 2005

	PhD Program	Master's Program	Bachelor's Program	Total
College of Humanities	199	351	1,607	2,157
College of Social Sciences	144	401	2,131	2,676
College of Natural Sciences	313	744	1,586	2,643
College of Nursing	37	97	280	414
College of Business Administration	58	427	989	1,474
College of Engineering	673	1,749	4,280	6,702
College of Agriculture and Life science	485	385	1,609	2,179
College of Fine Arts	39	150	607	796
College of Law	113	252	1,331	1,696
College of Education	272	553	1,819	2,644
College of Human Ecology	74	114	552	740
College of Veterinary Medicine	54	84	206	344
College of Pharmacy	67	191	326	584
College of Music	31	101	733	865
College of Medicine	354	400	765	1,519
College of Dentistry	105	115	341	561
Grad. School of Public health	71	248	0	319
Grad. School of Public Administration	63	293	0	356
Grad. School of Environmental Studies	65	204	0	269
Grad. School of International Studies	0	229	0	229
Grad. School of Dentistry	0	87	0	87
<b>Total</b>	<b>2,917</b>	<b>7,175</b>	<b>19,162</b>	<b>29,254</b>



# Number of Foreign Students

July 1, 2005

	PhD Program	Master's Program	Bachelor's Program	Total
College of Humanities	30	40	27	97
College of Social Sciences	10	28	11	49
College of Natural Sciences	8	12	9	29
College of Nursing	0	1	3	4
College of Business Administration	6	40	27	73
College of Engineering	22	50	49	121
College of Agriculture and Life sciences	21	9	4	34
College of Fine Arts	0	7	16	23
College of Law	6	10	3	19
College of Education	24	30	26	80
College of Human Ecology	2	6	8	16
College of Veterinary Medicine	5	6	0	11
College of Pharmacy	3	1	6	10
College of Music	1	5	14	20
College of Medicine	7	6	0	13
College of Dentistry	3	4	0	7
Grad. School of Public health	1	0	0	1
Grad. School of Public Administration	3	5	0	8
Grad. School of Environmental Studies	2	1	0	3
Grad. School of International Studies	0	66	0	66
Grad. School of Dentistry	0	0	0	0
<b>Total</b>	<b>154</b>	<b>327</b>	<b>203</b>	<b>684</b>



# Foreign Students by Country of Origin

July 1, 2005

	PhD Program	Master's Program	Bachelor's Program	Total
Australia	1	2	0	3
Bangladesh	5	2	2	9
Bolivia	0	0	3	3
Brazil	0	0	1	1
Bulgaria	1	0	0	1
Canada	1	1	2	4
China	87	181	110	378
Ghana	1	0	0	1
Germany	2	0	2	4
India	5	8	0	13
Indonesia	1	2	0	3
Japan	18	28	16	62
Kyrgyzstan	1	3	0	4
Malaysia	0	2	0	2
Myanmar	1	1	0	2
Mongolia	6	10	14	30
Nepal	2	6	1	9
Pakistan	2	0	1	3
Paraguay	0	2	7	9
Philippine	0	1	0	1
Rumania	0	2	0	2
Russia	3	16	5	24
Saudi Arabia	0	0	9	9
Sudan	0	0	1	1
Surinam	0	0	1	1
Taiwan	0	7	4	11
Thailand	1	1	1	3
Turkey	0	3	3	6
U.S.A	1	11	9	21
Ukraine	1	2	0	3
Uzbekistan	1	9	3	13
Vietnam	4	7	2	13
Others	9	20	6	35
<b>Total</b>	<b>154</b>	<b>327</b>	<b>203</b>	<b>684</b>



# Foreign Faculty Members by Country of Origin

July 1, 2005

Total		Total	
U.S.A	22	Russia	1
Germany	8	Netherlands	1
Canada	6	Belgium	1
China	5	Sweden	1
Japan	3	Spain	1
India	2	Israel	1
Australia	2	Colombia	1
Mexico	2	France	1
England	2	Others	0
		<b>Total</b>	<b>60</b>

## Research Activities

### SCI-indexed Papers Published

Year	SCI-indexed papers of Korea	SCI-indexed papers of SNU(%)	Rank in the world
1999	10,918	1,924(17.6)	73
2000	12,013	2,202(18.3)	55
2001	14,162	2,589(18.3)	40
2002	14,916	2,713(18.1)	34
2003	17,785	3,062(17.2)	35
2004	18,497	3,119(16.7)	32

### Books and Papers Published by SNU Faculties

Year	Books	Papers
1999	920	17,600
2000	988	17,868
2001	1,057	18,519
2002	832	19,211
2003	644	18,015
2004	420	14,110



## Scholarships

July 1, 2005

	Undergraduate	Graduates	Total
External Scholarships	13.3%	4.2%	10.4%
University Scholarships	34.5%	50.6%	48.8%
<b>Total</b>	<b>47.9%</b>		

## Dormitories

July 1, 2005

	Gwanak campus	Yeongeon campus	Married student housing	Total
buildings	16	5	5	26
rooms	1,986	412	200	2,598
undergraduate dorms	2,380	540	0	2,920
graduate dorms	1,300	213	200	1,713

## Student Extracurricular Activities (Clubs)

July 1, 2005

	media	Social club	performance	research	art
Club	5	7	14	7	18
Members	228	221	950	93	1,437

	religion	sports	military arts	total
Club	17	32	4	104
Members	564	782	97	4,372

## Library Facilities and Materials

July 1, 2005

	Total space	seats	building
Facilities	43,183m <sup>2</sup>	5,939	6

Books	Journals	Antique documents	Newspapers	CD-Rom	Video Tape
2,532,200	10,159	2,351	61	3,004	5,310

DVD	Microfilm	E-Journal	E-Reference	E-Book	Microfiche
867	9,551	10,508	60	11,844	63,532



# Academic Exchange Universities by Country

August, 2005

Country	University & Research Institute
<b>USA</b>	UCLA, The State University of New York at Stony Brook, University of Washington, The University of Minnesota, Colorado State University, Washington State University, University of Missouri, University of Pittsburgh, The George Washington University, North Carolina State University, Vanderbilt University, Yale University, Rice University, University of northern Iowa
<b>Russia</b>	Leningrad Scientific Center, M.V.Lomonosov Moscow State University, Far Eastern National University
<b>Japan</b>	The University of Tokyo, Kyoto University, Hitotsubashi University, Tokyo University of Foreign Studies, Ritsumeikan University, Hokkaido University, Waseda University, Tohoku University, Keio University, Osaka University, Kyushu University, Shonan Institute of Technology
<b>China</b>	Yanbian University, Peking University, Fudan University, Shanghai Jiaotong University, Central University for Nationalities, Yanbian University of Science&Technology, Renmin University
<b>France</b>	L'Ecole des Hautes Etudes en Sciences Social, L'Universite de Paris-Sorbonne, L'Ecole Nationale superieure des Mines de Saint-Etienne
<b>Australia</b>	The University of Sydney, The Australian National University, Griffith University, The University of New South Wales, The University of Melbourne
<b>New Zealand</b>	The University of Auckland, Victoria University of Wellington
<b>England</b>	The University of Newcastle upon Tyne, The University of Oxford, The University of Sheffield, University of Manchester
<b>Finland</b>	The University of Helsinki
<b>Mongolia</b>	National University of Mongolia
<b>Canada</b>	The University of British Columbia, Simon Fraser University, The University of Alberta, University of Toronto
<b>Taiwan</b>	National Taiwan University
<b>Sweden</b>	Stockholm University
<b>Germany</b>	Freie Universitat Berlin, University of Bonn, Humboldt Universitat zu Berlin
<b>Hungary</b>	The Technical University of Budapest
<b>Mexico</b>	The University of Guadalajara, ITESM
<b>Singapore</b>	The National University of Singapore
<b>Thailand</b>	Chulalongkorn University, Sripatum University
<b>Egypt</b>	Cairo University
<b>Indonesia</b>	University of Indonesia
<b>Malaysia</b>	University of Malaya
<b>Vietnam</b>	Vietnam National University-Hanoi, Vietnam National University-Hochiminh
<b>Spain</b>	Universitat Autònoma de Barcelona
<b>Chile</b>	University of Chile
<b>Netherlands</b>	University of Leiden
<b>Austria</b>	University of Vienna
<b>Hong Kong</b>	Chinese University of Hong Kong, University of Hong Kong
<b>Denmark</b>	Technical University of Denmark
<b>Total</b>	28 countries, 81 Universities



The image shows two individuals in white lab coats in a laboratory. They are looking at a document held by the person on the right. The person on the left is pointing at the document. The background is a laboratory with various pieces of equipment. The entire image has a green tint. A large, faint watermark of the Seoul National University crest is visible in the upper left background.

## 2. Analysis of the Research Capabilities in the Fields of Science and Technology at SNU



SEOUL NATIONAL UNIVERSITY

# Analysis of the Research Capabilities in the Fields of Science and Technology at Seoul National University

- Chief Researcher: Kim, Gyu-Won (College of Pharmacy, Department of Pharmacy)
- Joint Researcher: Kang, Suk-Jin (College of Natural Sciences, Department of Mathematical Sciences)  
Kook, Yang (College of Natural Sciences, School of Physics)  
Kim, Jae-Bum (College of Natural Sciences, School of Biological Sciences)  
Park, Jong-Wan (College of Medicine, Department of Medicine)  
Choi, Man-Soo (College of Engineering, School of Mechanical and Aerospace Engineering)  
Hyun, Taek-Hwan (College of Engineering, School of Chemical and Biological Engineering)

**Seoul National University**

## Science and Engineering Research at SNU has Improved its International Competitiveness

According to an analysis of research competitiveness, various disciplines of Science and Engineering at SNU has been proven to be as good as the universities ranking in the top twenties in USA.

The number of published SCI-indexed papers in SNU has risen from 74% (1994) to 151% (2003), in comparison to the top universities in the US like Harvard and Yale. This is almost double the number of published papers of other highly-ranked universities in the US. The quality of the papers has also been greatly improved. The citations in journals per researcher/professor have increased from 35% to 74%, which are also higher than those of the top universities in USA (54%).

The School of Pharmacy has particularly shown great improvement. Not only does the number of published papers exceed that of USCF, the top pharmacy school in the US, by threefold, but the number of cited times also exceed them by twofold. The department of Mathematical Sciences also surpasses that of Harvard, with 160% in the number of published papers and 109% in the number of cited times

This research has been conducted from 1994 to 2003. It has compared the number of SCI(Science Citation Index) level theses by SNU professors and the number of citations per researcher/professor with those of top universities, which have been obtained from the database of ISI(Institute for Scientific Information).



## 1. Summary

-SNU Research Center has conducted a research on the papers of Science and Technology at SNU to figure out their international competitiveness. Six fields of Science and Technology have been examined.

-This research has compared the number of SCI level papers per professor and the cited times with those found in the database of the American ISI (Institute Scientific Information).

\* The cited times of a paper is a more accurate index of its quality than the impact factor.

-In each of the six fields, they have selected two benchmarking universities, one of which is among the top 3 universities and the other among the 10-30th universities in USA.

## Summary of the Results

(1) Number of the papers published : It has risen from 74% (1994) to 151%, in comparison to those of the top 30 universities. This indicates that quantitative competitiveness has been attained.

(2) Cited times : In 1994-1995, it was 35% of the top 3 universities and 66% of other highly-ranked universities in USA. It has now increased to 74%, 137% each.

(3) Considering the cited times as an index to the quality of the theses, the graduate school of Science and Engineering at SNU has attained international competitiveness, roughly ranking in the top twenties among American universities.

(4) Financial aid from the government was the key factor behind this improvement; the BK21 program especially made a big contribution. Systematic reform in the university such as the professor evaluation system was also effective.

(5) With all these improvements in research, SNU will be on the same level as those in the top ten in the US within 5 to 10 years.

(6) It was more reasonable to compare SNU with two benchmarking universities than with all other universities.

## 2. Method

ISI(Institute for Scientific Information)'s web of science database has been employed in finding the information on SNU professors' papers that have been published within the past ten years.

**3. The number of theses** published per professor and the cited times of these papers were taken into account. In order to examine the change in quantity, the number of papers published per professor was taken into account and for the change in quality, the cited times per professor.

## 4. Fields that were compared.

Mathematics, physics, biological science, chemical engineering, mechanics and aerospace engineering, pharmacy were compared with those of the benchmarking universities.



## 5. Benchmarking universities

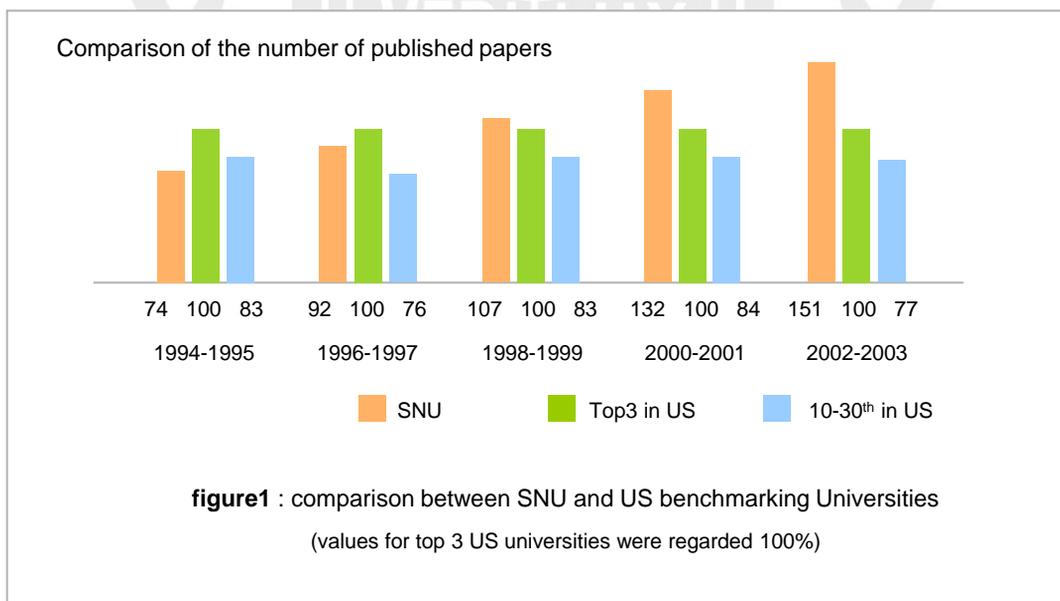
One of the top 3 universities in USA and the other among the 10-30th universities were chosen as benchmarking universities. 'US News and World Report' was referred to for the ranking of American universities.

Field	Benchmarking Universities in USA
Mathematics	Harvard University (1st~2nd) Ohio State University (33rd)
Physics	Stanford University (3rd) Indiana University (30th)
Biological science	Stanford University (1st) University of Texas, Austin (30th)
Chemical Engineering	University of Michigan -Ann Arbor (11th) Texas A&M University - College Station (27th)
Mechanics and Aerospace Engineering	U.C. Berkeley (3rd) Carnegie Mellon University (11th)
Pharmacy	University of California -San Francisco (1st) University of Michigan -Ann Arbor (3rd)

## 6. Results

### 6.1 Comparison of the number of published papers

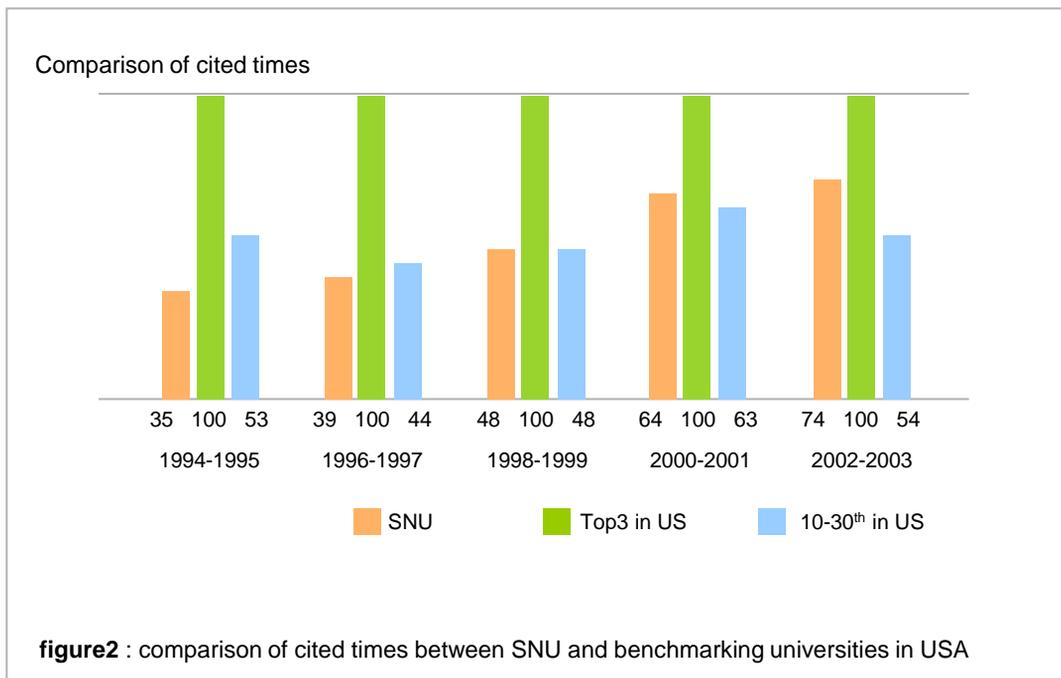
Ten years ago the number of papers published at SNU was only 74% in comparison to the top 3 universities in USA. But it has increased to 151% in 2003, while that of the 10-30th universities in USA has remained at 76-84%. Since 1998, SNU has been able to outpace the top 3 universities.



## 6.2 Comparison of citations

One can evaluate the quality of a thesis in two ways: one way is to count the number of times the journal in which the thesis was published has been cited, which is called impact factor. The other way is to count the cited times, which is a more specific and accurate index of the quality of the scientific paper. This research used the latter method, counting the cited times.

The cited times per professor at SNU was a meager 34% of the top 3 American universities in 1994, but has steadily increased to 74% in 2003. Now, the cited times of SNU professors exceed those of 10-30th universities in USA by 140%.

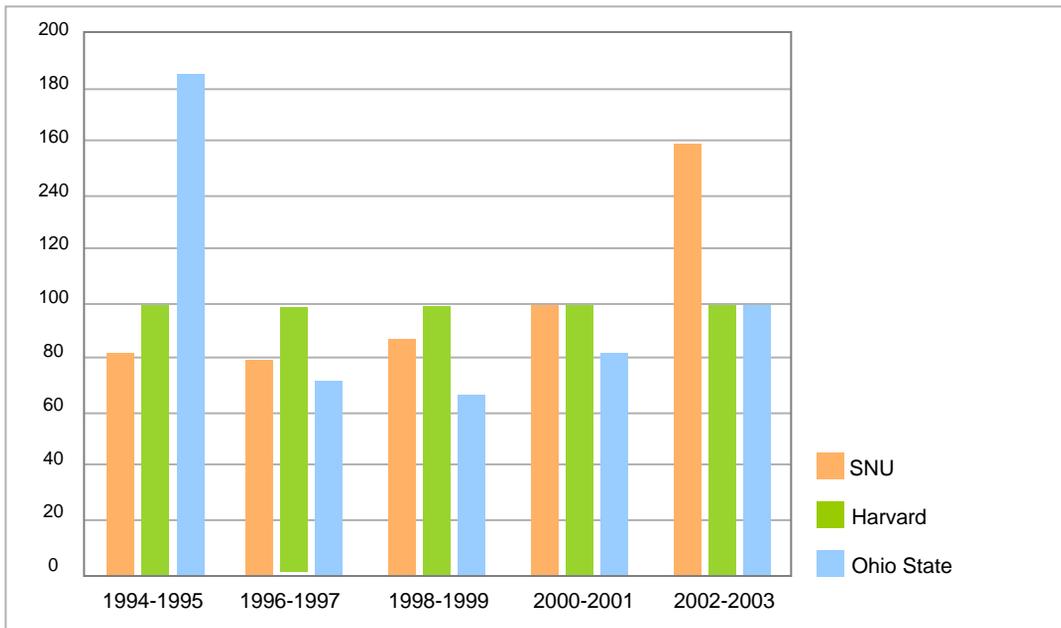


## 7. Comparative Data Per Each Field

### 7.1 Mathematical Sciences

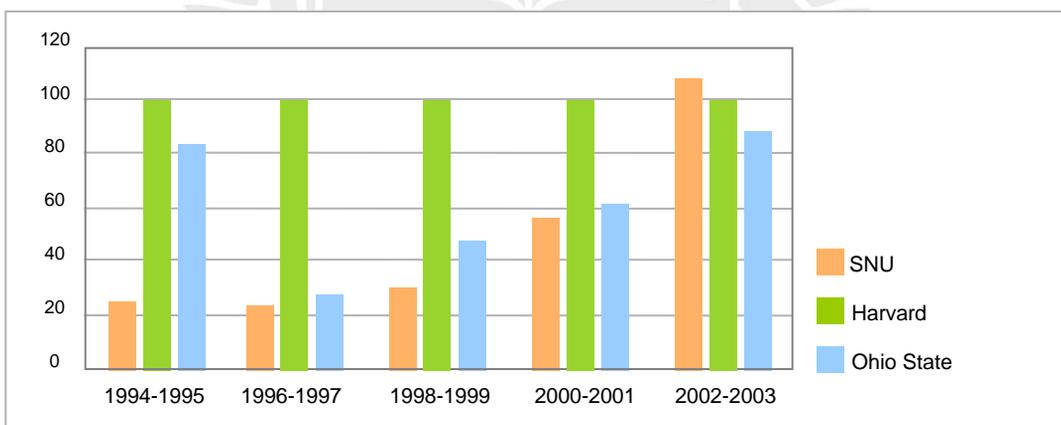
#### 7.1.1 The Number of Published Papers

University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	0.5 (83.3)	1.1 (78.6)	1.5 (88.2)	1.7 (100)	2.4 (160)
Harvard (1~2th)	0.6 (100)	1.4 (100)	1.7 (100)	1.7 (100)	1.5 (100)
Ohio State (33 <sup>rd</sup> )	1.1 (183.3)	1.0 (71.4)	1.1 (64.7)	1.4 (82.4)	1.5 (100)



#### 7.1.2 The Number of Cited Times

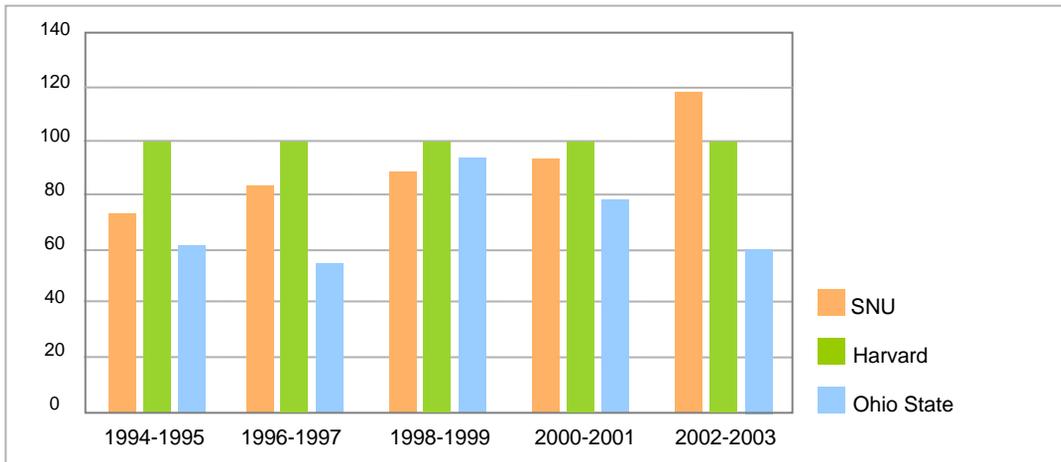
University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	2.8 (23.3)	5.6 (22.3)	4.2 (32.8)	4.0 (58.8)	2.5 (108.7)
Harvard (1~2th)	12.0 (100)	25.1 (100)	12.8 (100)	6.8 (100)	2.3 (100)
Ohio State (33 <sup>rd</sup> )	9.8 (81.7)	7.1 (28.3)	6.1 (47.7)	4.3 (63.2)	2.0 (86.9)



## 7.2 Physics

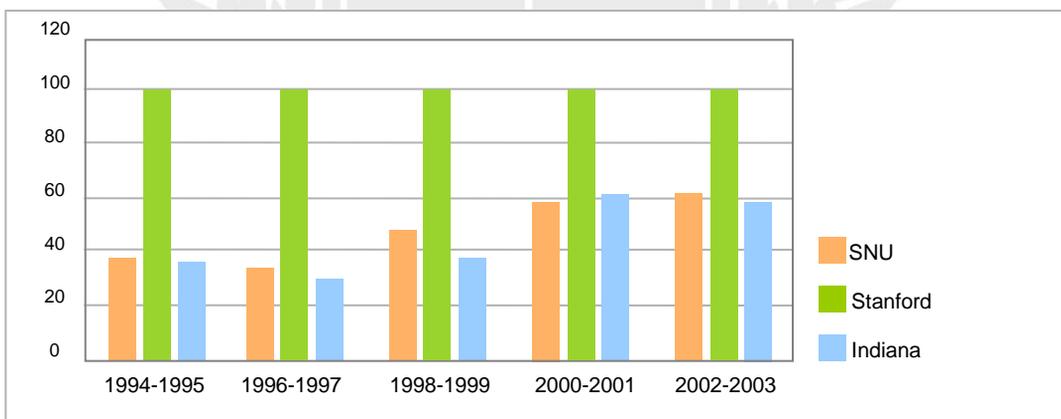
### 7.2.1 The Number of Published Papers

University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	7.1 (72.4)	10.2 (82.3)	10.7 (89.2)	12.4 (93.2)	14.9 (118.3)
Stanford (3 <sup>rd</sup> )	9.8 (100)	12.4 (100)	12.0 (100)	13.3 (100)	12.6 (100)
Indiana (30 <sup>th</sup> )	6.0 (61.2)	6.9 (55.6)	11.1 (92.5)	10.5 (78.9)	7.5 (59.5)



### 7.2.2 The Number of Cited Times

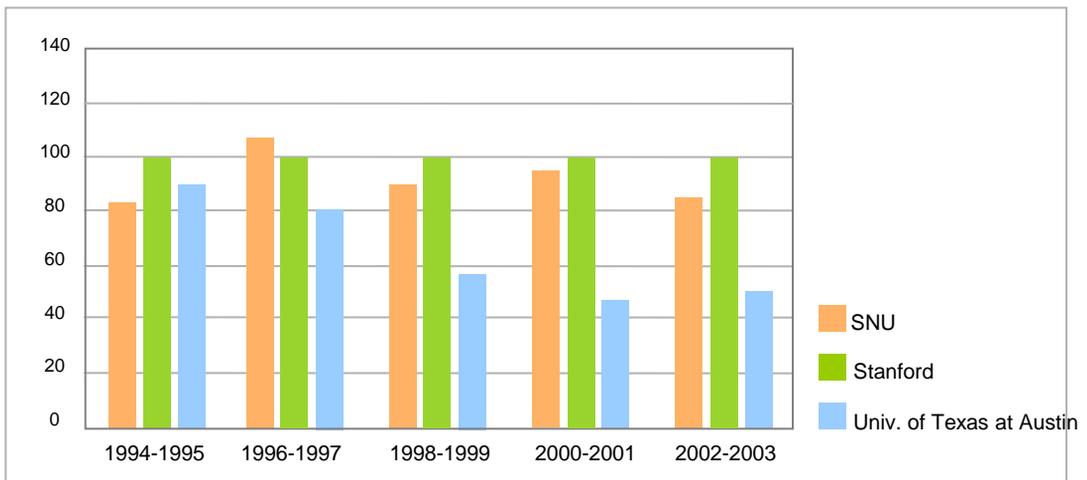
University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	185.4 (37.4)	167.1 (32.3)	271.1 (45.3)	177.4 (59.3)	117.0 (61.7)
Stanford (3 <sup>rd</sup> )	496.2 (100)	517.5 (100)	598.3 (100)	299.0 (100)	189.5 (100)
Indiana (30 <sup>th</sup> )	169.7 (34.2)	146.5 (28.3)	216.0 (36.1)	186.6 (62.4)	72.2 (38.1)



### 7.3 Biological Sciences

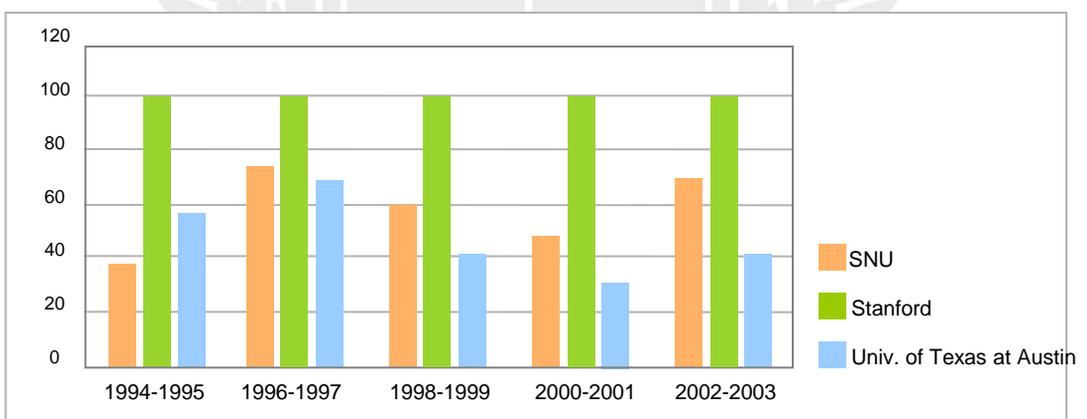
#### 7.3.1 The Number of Published Papers

University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	2.4 (82.8)	4.5 (125)	5.5 (90.2)	7.3 (96.1)	6.5 (84.4)
Stanford (1 <sup>st</sup> )	2.9 (100)	3.6 (100)	6.1 (100)	7.6 (100)	7.7 (100)
Univ. of Texas At Austin (30 <sup>th</sup> )	2.6 (89.7)	2.9 (80.6)	3.5 (57.4)	3.5 (46.1)	3.8 (49.4)



#### 7.3.2 The Number of Cited Times

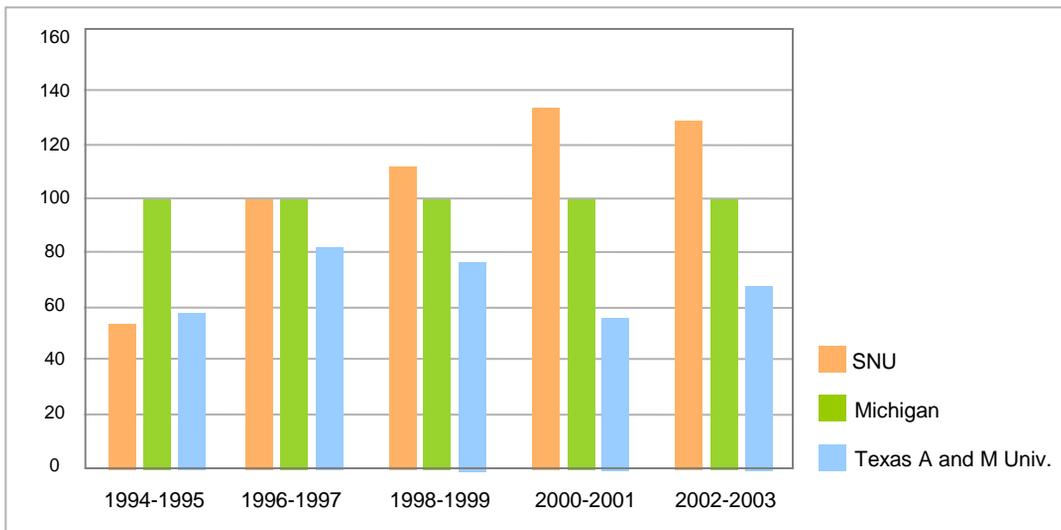
University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	45.4 (37.7)	106.9 (73.8)	114.4 (59.8)	92.5 (45.7)	55.1 (71.4)
Stanford (1 <sup>st</sup> )	120.5 (100)	144.9 (100)	191.2 (100)	202.4 (100)	77.2 (100)
Univ. of Texas At Austin (30 <sup>th</sup> )	68.9 (57.2)	99.6 (68.7)	78.2 (40.9)	62.1 (30.7)	31.5 (40.8)



## 7.4 Chemical Engineering

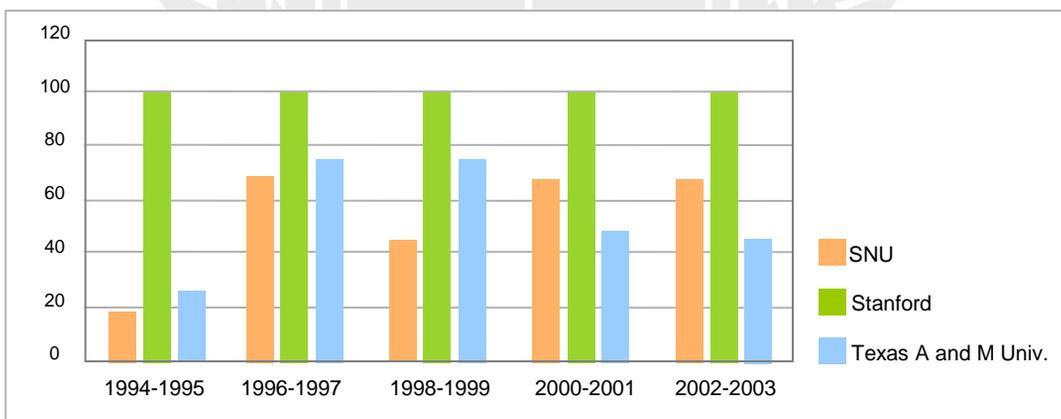
### 7.4.1 The Number of Published Papers

University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	2.2 (55)	4.6 (100)	6.5 (112.1)	9.9 (133.8)	10.6 (127.7)
Michigan (11 <sup>th</sup> )	4.0 (100)	4.6 (100)	5.8 (100)	7.4 (100)	8.3 (100)
Texas A and M Univ. (27 <sup>th</sup> )	2.3 (57.5)	3.8 (82.6)	4.4 (75.9)	4.2 (56.8)	5.6 (67.5)



### 7.4.2 The Number of Cited Times

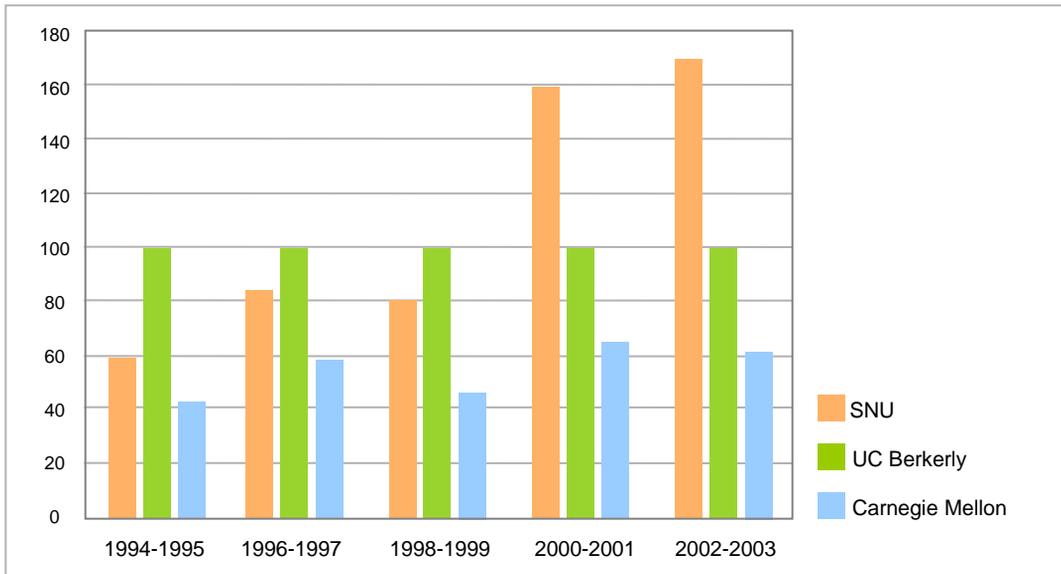
University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	20.8 (19.0)	54.5 (69.5)	60.5 (42.0)	83.3 (66.8)	41.5 (66.5)
Michigan (11 <sup>th</sup> )	109.4 (100)	78.4 (100)	144.0 (100)	124.7 (100)	62.4 (100)
Texas A and M Univ. (27 <sup>th</sup> )	29.4 (26.9)	58.7 (74.9)	109.6 (76.1)	57.3 (46.0)	26.5 (42.5)



## 7.5 Mechanics and Aerospace Engineering

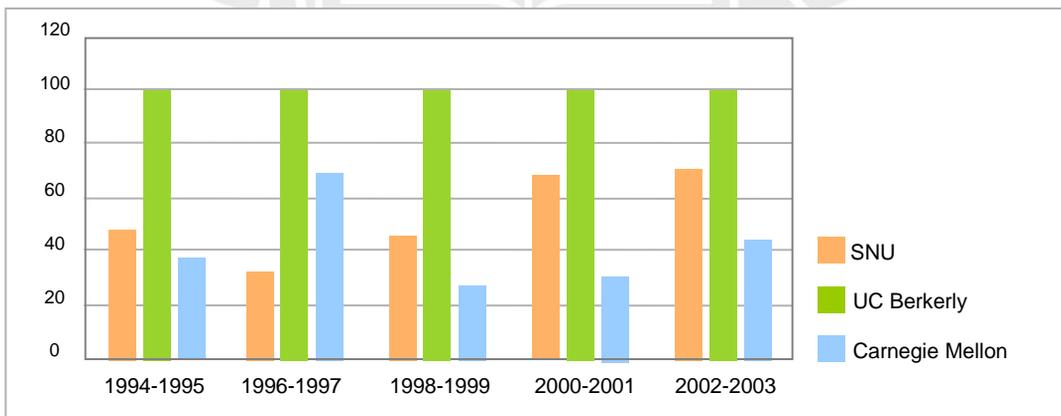
### 7.5.1 The Number of Published Papers

University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	2.2 (59.5)	3.0 (83.3)	3.6 (80.0)	6.7 (159.5)	7.6 (168.9)
UC Berkeley (3 <sup>rd</sup> )	3.7 (100)	3.6 (100)	4.5 (100)	4.2 (100)	4.5 (100)
Carnegie Mellon (11 <sup>th</sup> )	1.6 (43.2)	2.1 (58.3)	2.0 (44.4)	2.7 (64.3)	2.8 (62.2)



### 7.5.2 The Number of Cited Times

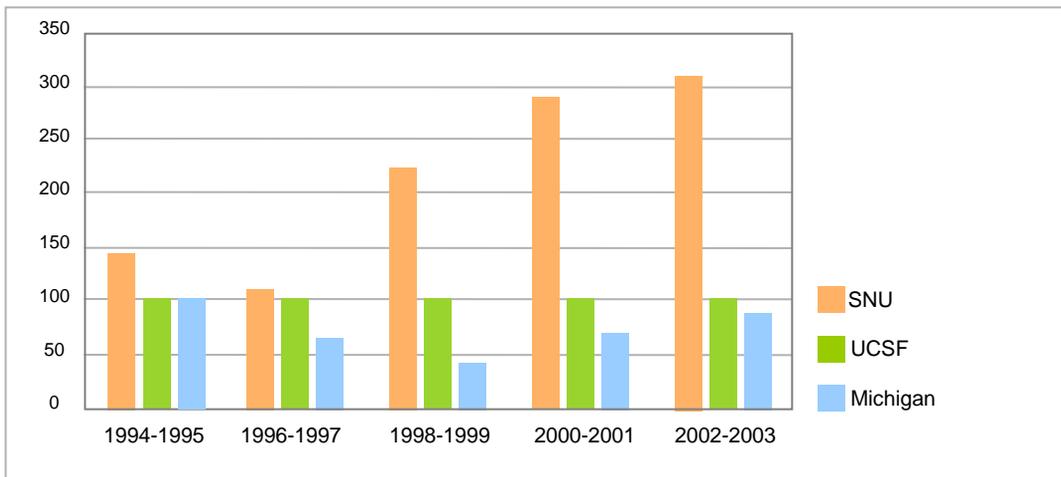
University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	20.8 (49.6)	14.8 (35.1)	16.5 (44.6)	21.9 (68.0)	9.3 (71.0)
UC Berkeley (3 <sup>rd</sup> )	41.9 (100)	42.2 (100)	37.0 (100)	32.2 (100)	13.1 (100)
Carnegie Mellon (11 <sup>th</sup> )	16.0 (38.2)	21.5 (50.9)	10.0 (27.0)	9.5 (29.5)	5.6 (42.7)



## 7.6 Pharmacy

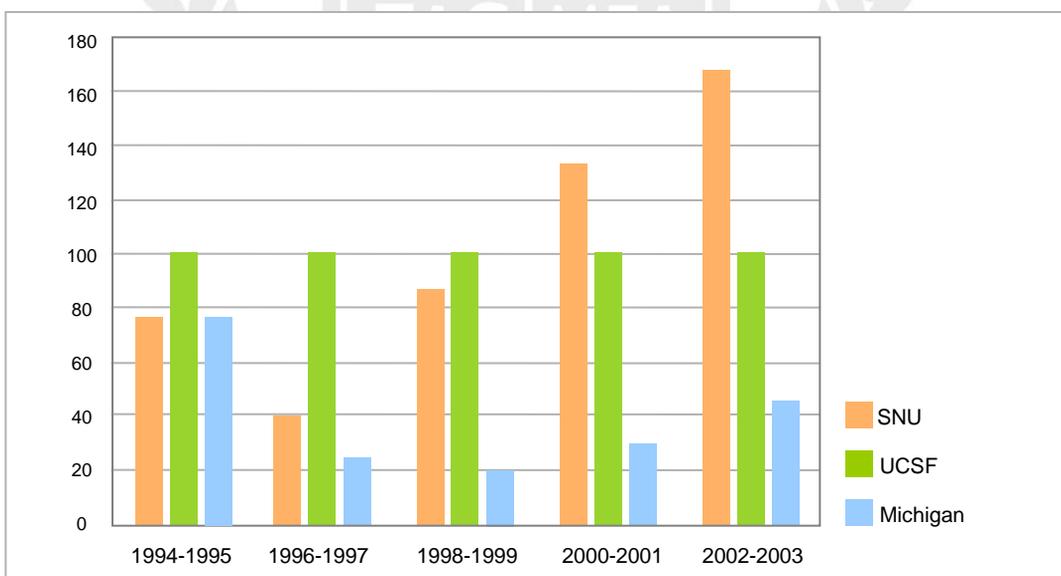
### 7.6.1 The Number of Published Papers

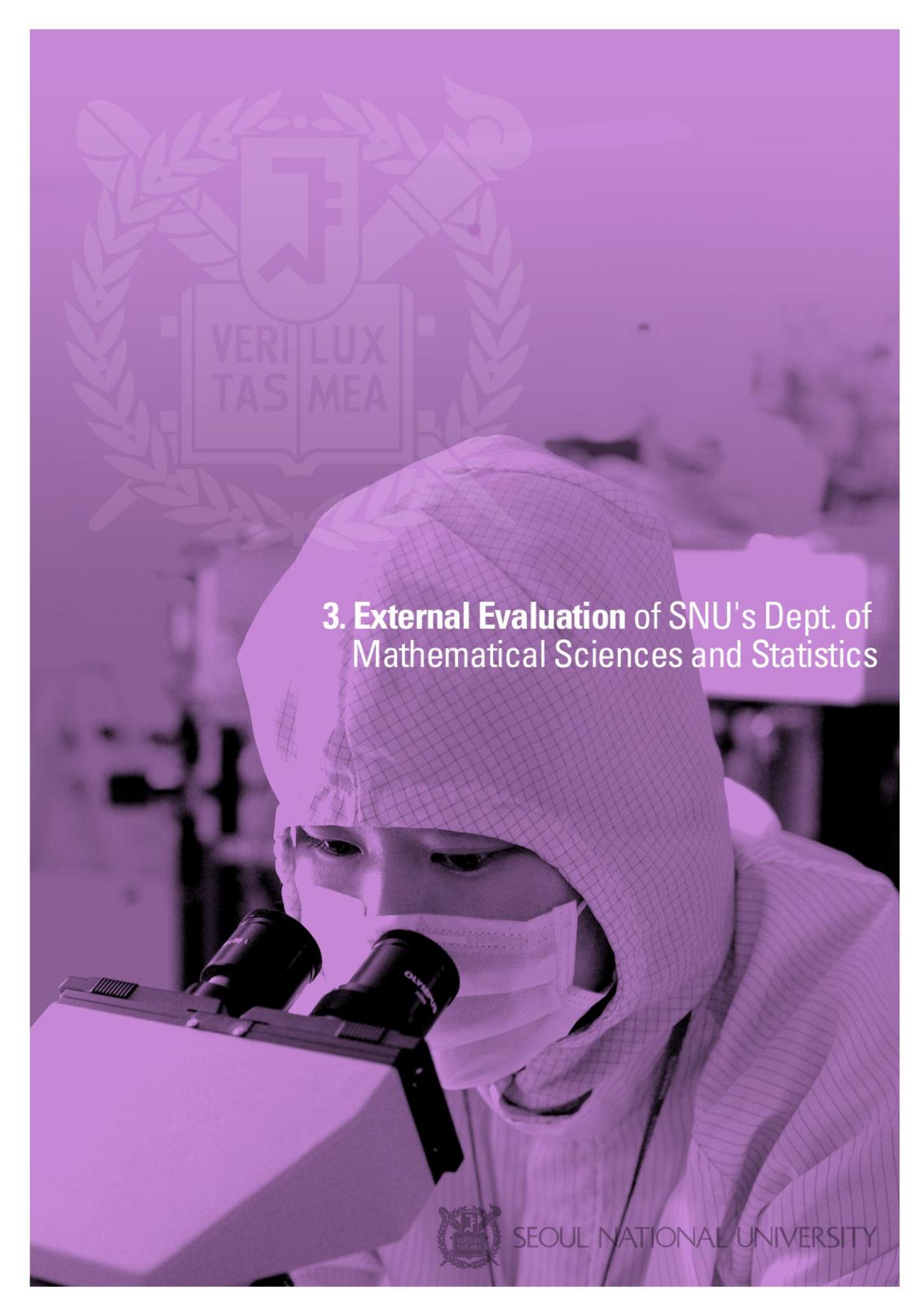
University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	1.9 (146.2)	2.0 (105.3)	8.7 (223.1)	9.8 (288.2)	13.9 (308.9)
UCSF (1 <sup>st</sup> )	1.3 (100)	1.9 (100)	3.9 (100)	3.4 (100)	4.5 (100)
Michigan (3 <sup>rd</sup> )	1.3 (100)	1.2 (63.2)	1.8 (46.2)	2.4 (70.6)	3.8 (84.4)



### 7.6.2 The Number of Cited Times

University	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003
SNU	23.0 (78.0)	25.2 (39.7)	79.2 (87.8)	88.0 (133.3)	60.5 (168.1)
UCSF (1 <sup>st</sup> )	29.5 (100)	63.5 (100)	90.2 (100)	66.0 (100)	36 (100)
Michigan (3 <sup>rd</sup> )	22.7 (76.9)	16.2 (25.5)	19.9 (22.1)	19.8 (30.0)	16.5 (45.8)





### 3. External Evaluation of SNU's Dept. of Mathematical Sciences and Statistics



## SNU's Department of Mathematical Sciences and Statistics in the College of Natural Sciences Rank in the Top Thirties

World renowned scholars have evaluated the department of Mathematical Sciences and the department of Statistics at SNU as superior as those that rank in the top thirties in the US. Especially in the fields of financial mathematics and cryptology, we were said to be on the verge of becoming world-class.

UC Berkely professor David Eisenbud and his research team have recently visited Korea and evaluated the department of Mathematical Sciences at SNU. They claimed that it deserved to belong in the first group (which constitutes of universities ranking in the top fifties) and was on the same level as the 30th university in USA.

It was the first time in Korea that evaluation of each department was conducted by world class scholars. Professor Eisenbud is the Director of MSRI (Mathematical Sciences Research Institute) and was the former president of the American Mathematics Association.

The department of Statistics was also appraised by the former president of US Statistics Society Peter Beckel and three other leading figures in this field. The evaluation team interviewed the professors and students, visited the research offices, and examined the theses that were in progress. The enthusiastic young researchers and the ongoing projects were highly praised. Evaluation of other departments in the College of Natural Sciences (conducted by foreign scholars) are due to take place by the end of November this year.

