



Academy of Scientific Research and Technology (ASRT)

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Vice President of ASRT & Plant
Biotechnology

EGYPT

1st GAYSF 2011, June 16-
19, Berlin, Germany

Contents

- 1 Introduction about Egypt
- 2 Brief description of S&T system
- 3 Brief description of ASRT
- 4 Youth programs in Egyptian ST system
- 5 Int. cooperation

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Egypt

- is located in the heart of the Middle East linking between Africa and Asia.
- With 85 Million people and one of every four Arabs is an Egyptian.
- With more than 17 Million students in the Education System and 100,000 researchers.
- 60% of population are youth

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Alexandria, Egypt, summer 2010



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ماي ايجي

25
January,
2011



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Egypt (Nobel Laureates)

Mohamed El Baradei, Peace, 2005

Ahmed Zewail, Chemistry, 1999

Naguib Mahfouz, Literature, 1988

Anwar El Sadat, Peace, 1978

25 January Revolution, Peace

Sadat

Mahfouz

Zewail

El Baradi

who is the next?



25
January
Revolution

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You Are Invited to Visit Egypt



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Ongoing ST policy

- 1) Re-Structuring of Science and Technology System.
- 2) National Initiative for Human Resources Development.
- 3) Priority National Projects.
- 4) Funding of Science and Technology.
- 5) National Initiative for Informal Education and vocational training.
- 6) National Initiative for Innovation.

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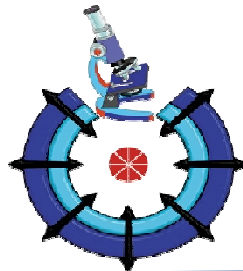
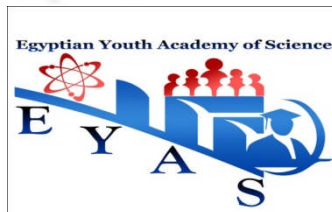


S&T System



HCST

73% in University
13% in Institutes
14% in Industry



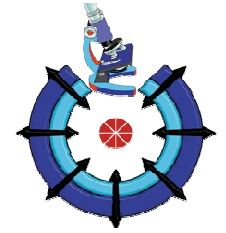
100 000
Researchers

**Universities
(25 +25)**

**Research
Centers (362)**

**Private Sector
(Industry)**

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Egypt's S&T priority areas: Phase ONE

1) Energy Resources

- Technology Transfer of Wind Turbines.
- Concentrated Solar Power.
- Photo-voltics thin films with Nanotechnology.

2) Water and Environment

- Non-Traditional Water Resources Management.
- Desalination with renewable energy sources.

3) Food and Agriculture

- Increasing yield of economic crops.
- Increasing marine aqua-culture of fishes.

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Egypt's S&T priority areas Phase ONE

4) Health

- Combating Hepatitis C virus disease.

5) Space, Remote sensing and ICT

- Earth observation and Climate Change.
- Super-, grid-computing and data mining.

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Targeted Calls

Renewable Energy

- Wind Energy
- Solar Energy: CSP and PV
- Peaceful applications of Nuclear Energy

Sustainable Improvement of Food production

- Resistance to abiotic stresses in strategic crops
- Irrigation systems
- Fisheries and fish farming

Water

Desalination

HCV

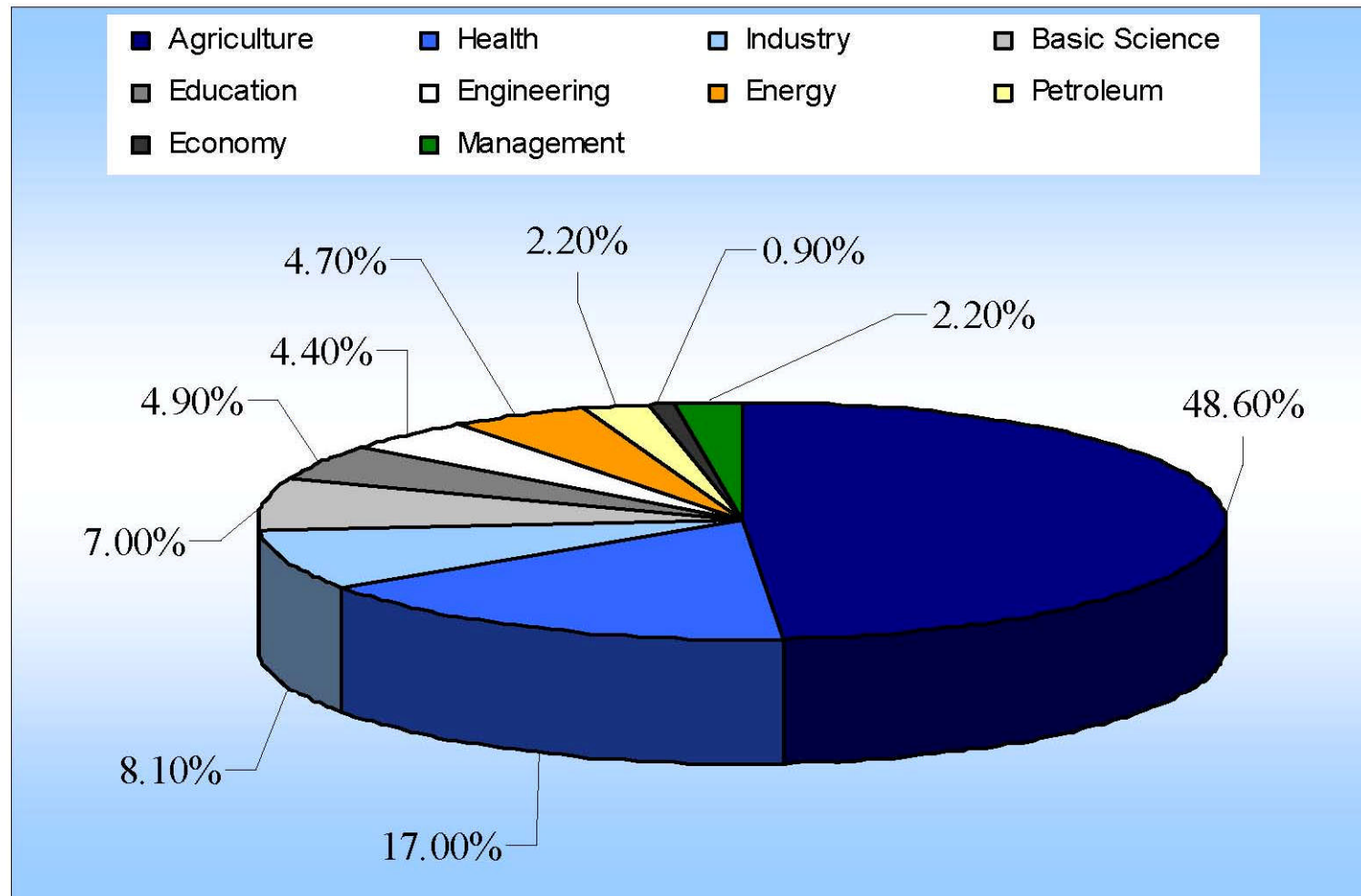
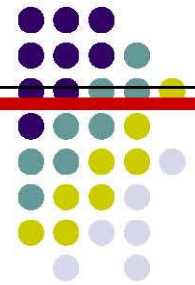
- Epidemiology of HCV infection
- HCV diagnostic modalities
- HCV therapy
- HCV prevention



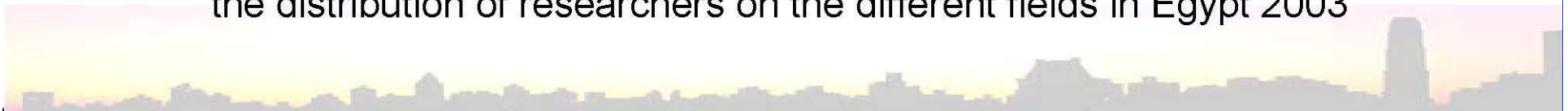
STI indicators

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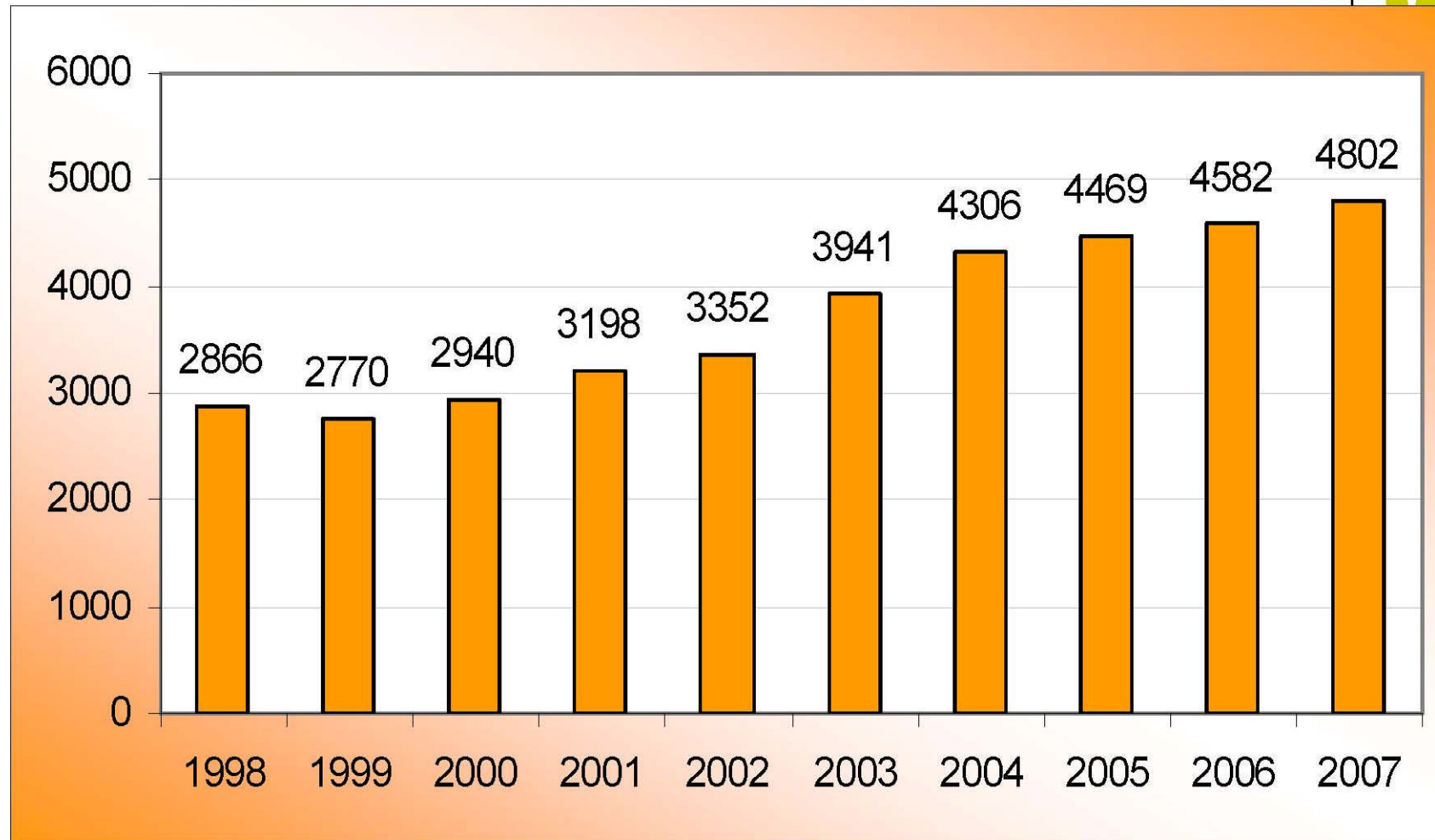
R&D Personnel



the distribution of researchers on the different fields in Egypt 2003

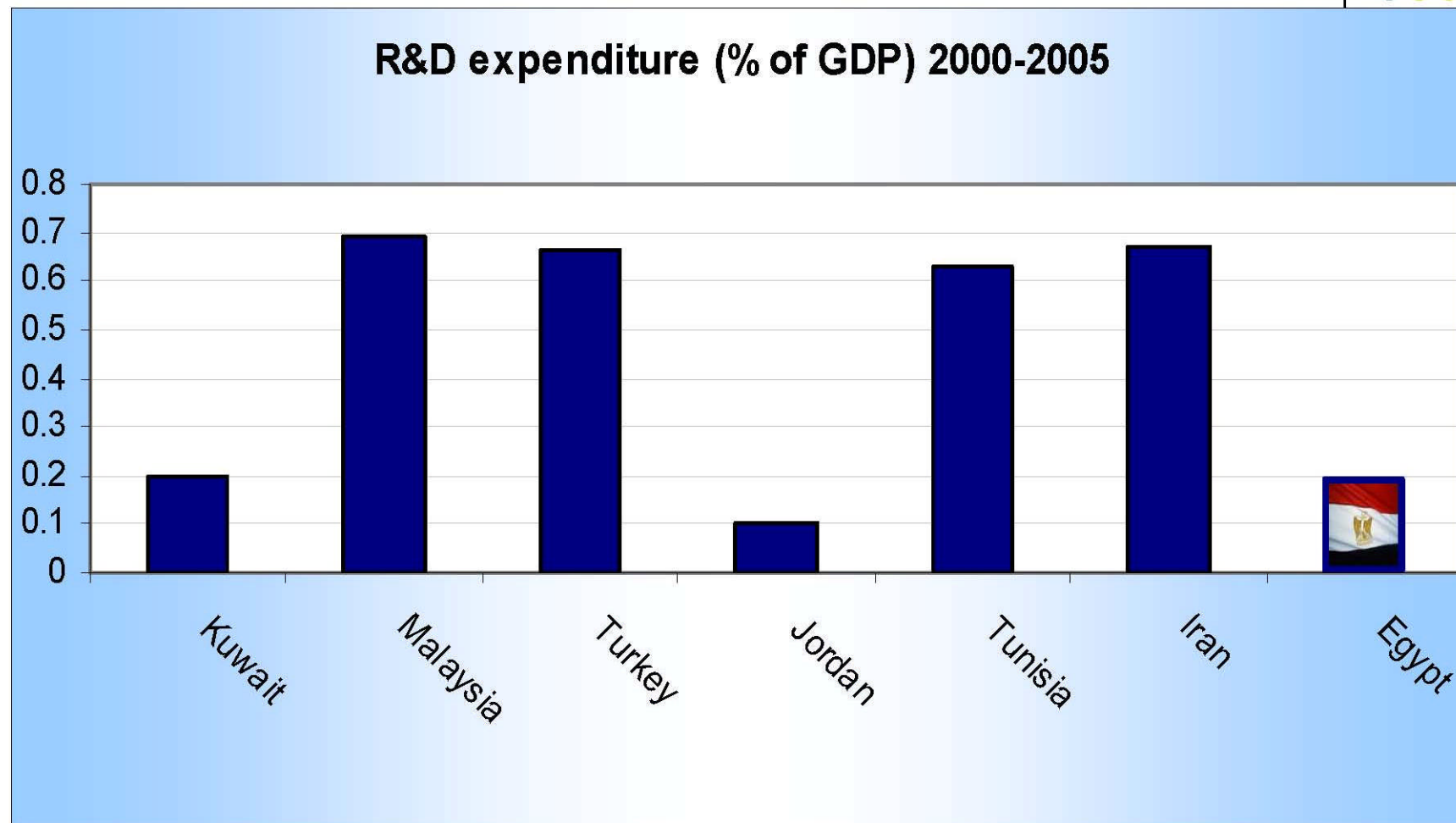


Publication of Scientific Articles



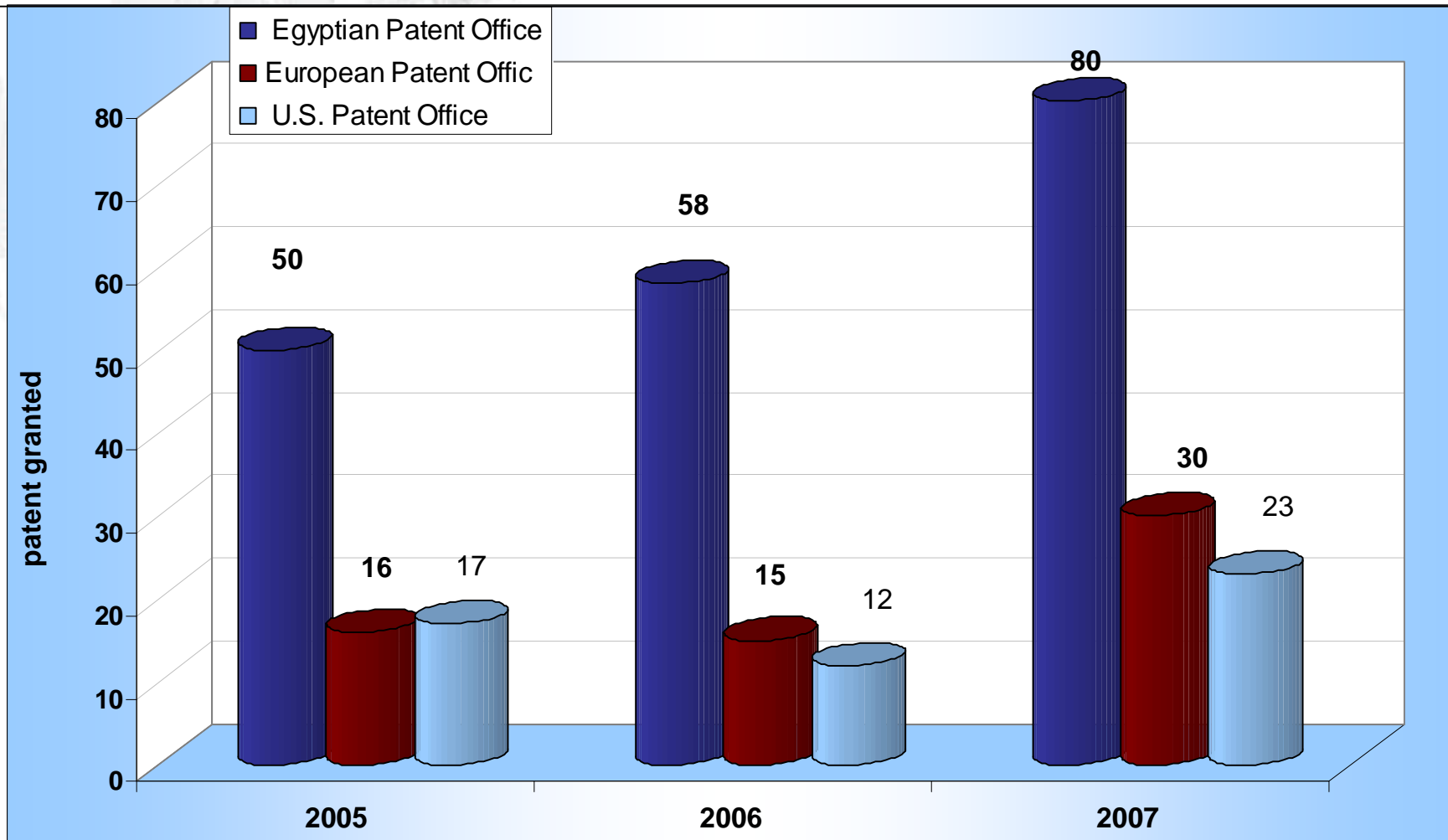
Articles of Egyptian Research in the International Magazines

R&D Expenditure

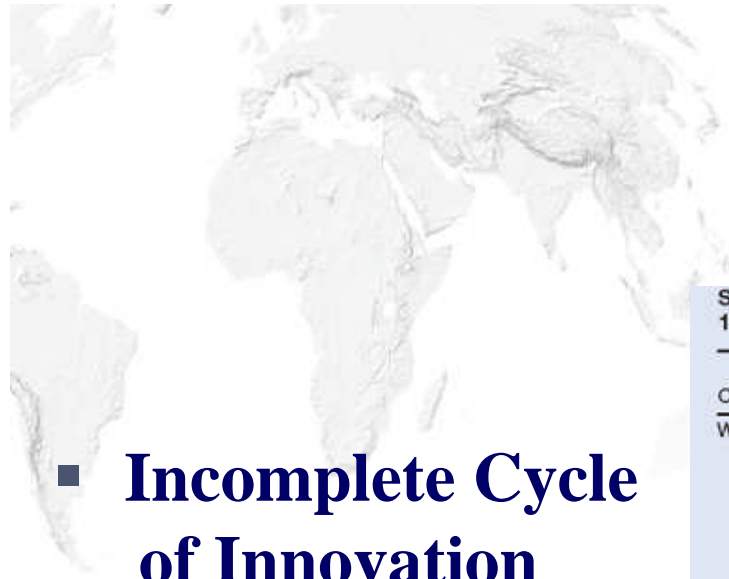


Research and Development Expenditure (% of GDP) (2000-2005)

Number of patents granted by the Egyptians



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■ **Incomplete Cycle of Innovation**

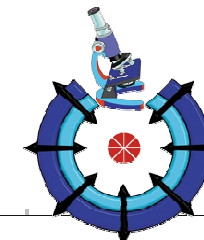
S&E article output, share of world total, and change rate, by medium S&E article-producing country: 1995 and 2005

Country	1995		2005		Average annual change (%)
	Number	Share (%)	Number	Share (%)	
World	564,645	100	709,541	100	2.3
Iran	279	0.1	2,635	0.4	25.2
Turkey	1,715	0.3	7,815	1.1	16.4
Thailand	340	0.1	1,249	0.2	13.9
Singapore.....	1,141	0.2	3,609	0.5	12.2
Portugal	990	0.2	2,910	0.4	11.4
Brazil	3,436	0.6	9,889	1.4	11.2
Slovenia	434	0.1	1,035	0.1	9.1
Greece	2,058	0.4	4,291	0.6	7.6
Mexico	1,937	0.3	3,902	0.5	7.3
Chile.....	889	0.2	1,559	0.2	5.8
Ireland	1,218	0.2	2,120	0.3	5.7
Czech Republic.....	1,955	0.3	3,169	0.4	5.0
Argentina.....	1,967	0.3	3,058	0.4	4.5
Poland.....	4,549	0.8	6,844	1.0	4.2
Hungary	1,764	0.3	2,614	0.4	4.0
Austria.....	3,425	0.6	4,566	0.6	2.9
Belgium.....	5,172	0.9	6,841	1.0	2.8
Norway.....	2,920	0.5	3,644	0.5	2.2
New Zealand.....	2,442	0.4	2,983	0.4	2.0
Switzerland	7,220	1.3	8,749	1.2	1.9
Egypt.....	1,388	0.2	1,658	0.2	1.8
Finland	4,077	0.7	4,811	0.7	1.7
Denmark	4,330	0.8	5,040	0.7	1.5
Israel	5,741	1.0	6,309	0.9	0.9
South Africa	2,351	0.4	2,392	0.3	0.2
Ukraine.....	2,516	0.4	2,105	0.3	-1.8

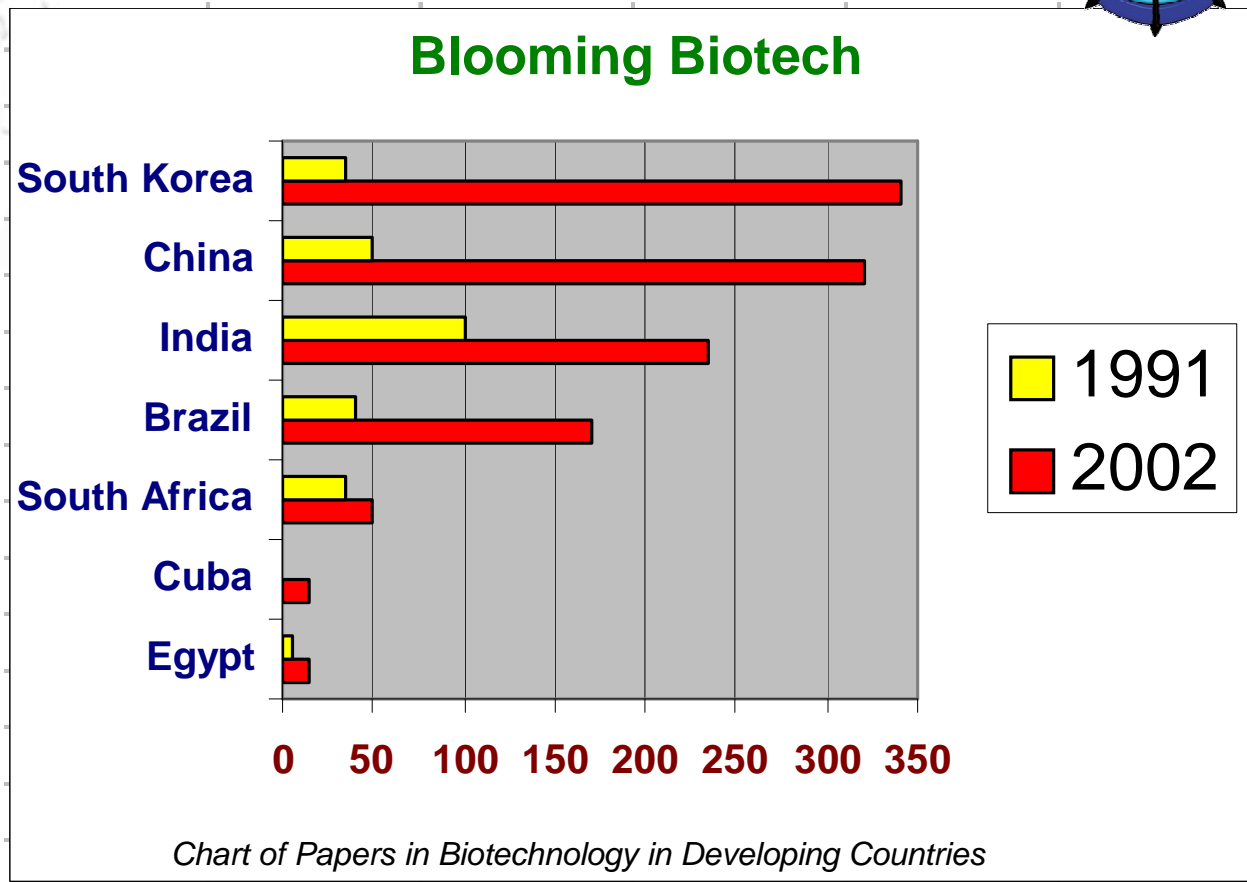


National Science Foundation, 2008, Science and Engineering Indicators 2008

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- Incomplete Cycle of Innovation**



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- Incomplete Cycle of Innovation**

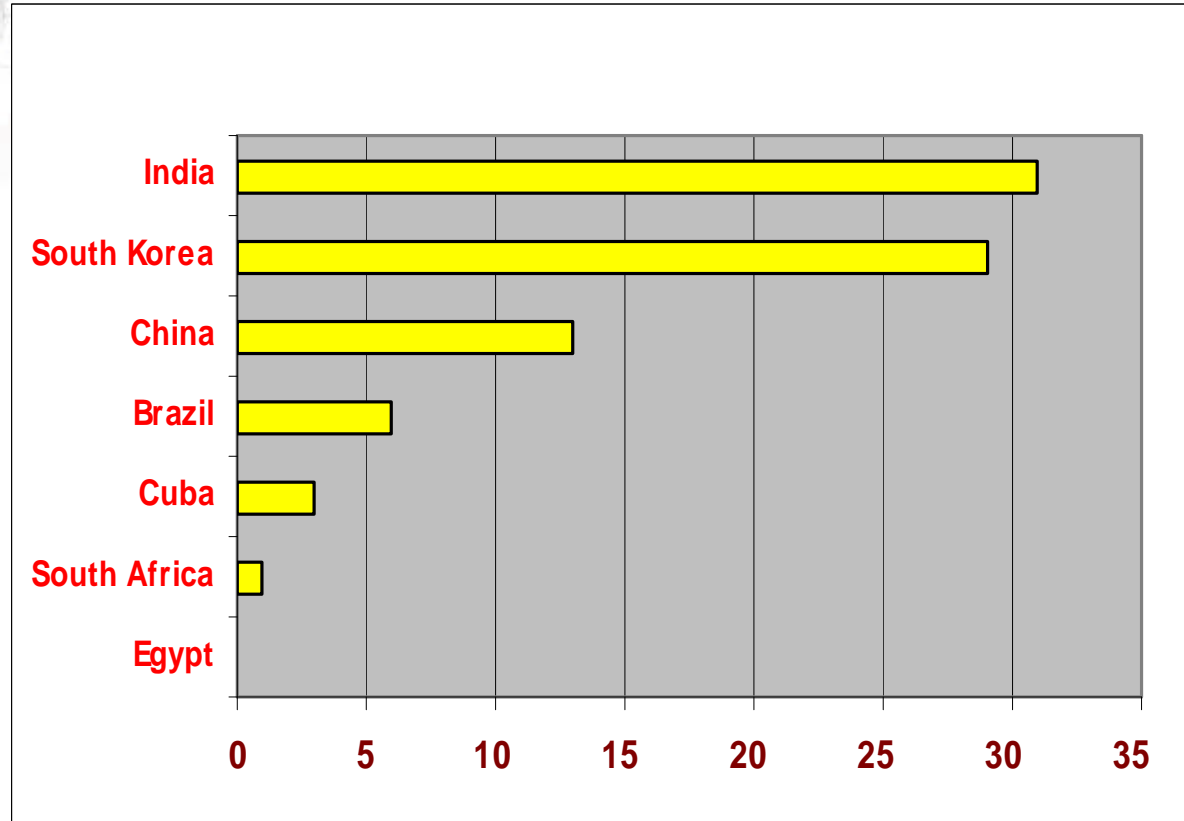
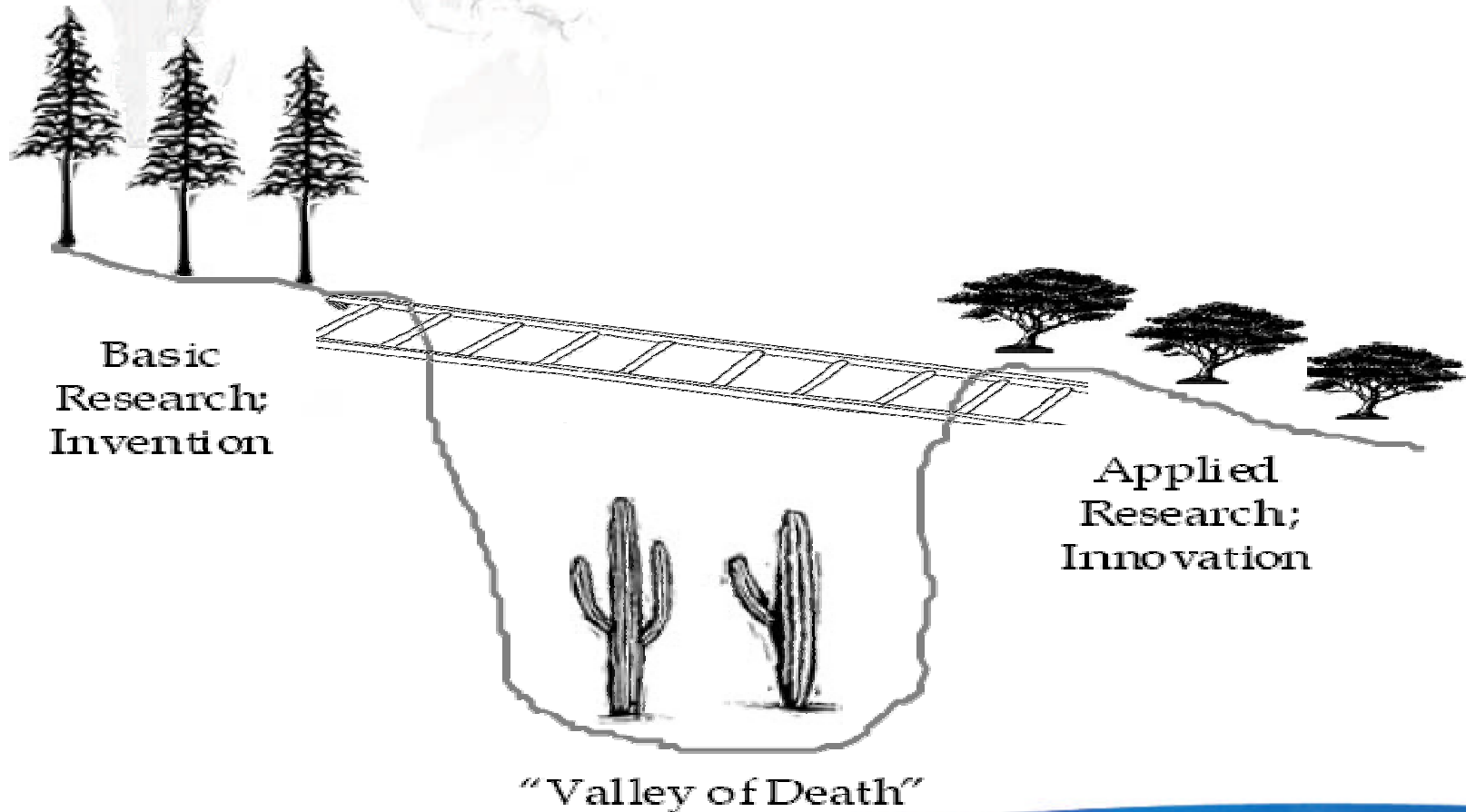


Chart of Patents in Biotechnology in Developing Countries

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OUR mission =
Bridge the gap



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ASRT, 101 Kasr Al
Ani Street, Cairo,
Egypt

www.asrt.sci.eg

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The ASRT was established in September, 1971 as being the national body responsible for science and technology in Egypt .

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About us



- ASRT is the Egyptian house of expertise.
- It brings together outstanding Egyptian scientists from universities, research institutions, private sector, NGOs, policymakers and prominent Egyptian scientists in Diaspora.
- ASRT experts deliberate country problems, propose and carry out the needed scientific future studies and strategic plans to tackle these problems.

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Vision

To be effective and reliable national think tank for the service of Science, Technology and Innovation (STI) in Egypt

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Mission



To create enabling and stimulating environment for **STI**.

For maximizing the outcomes of **STI**.

Through promotion, coordination, assessment, encouragement and appreciation of excellence in **STI**.

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Activities



1. Future studies, strategic plans and roadmaps to tackle country problems.
2. Strengthen cooperation with international counterparts (Academies, STI institutions, IAP,..etc).
3. Raise the awareness and promotion of scientific culture & thinking.
4. Assessment of science and technology (ST indicators).
5. Encourage and honoring excellence in Science.

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Activities (cont.)



6. Establishment and taking care of virtual multiinstitutional centres of excellence and research consortia in advanced and converging sciences.

7. Bridging the gap between scientists and private sector.

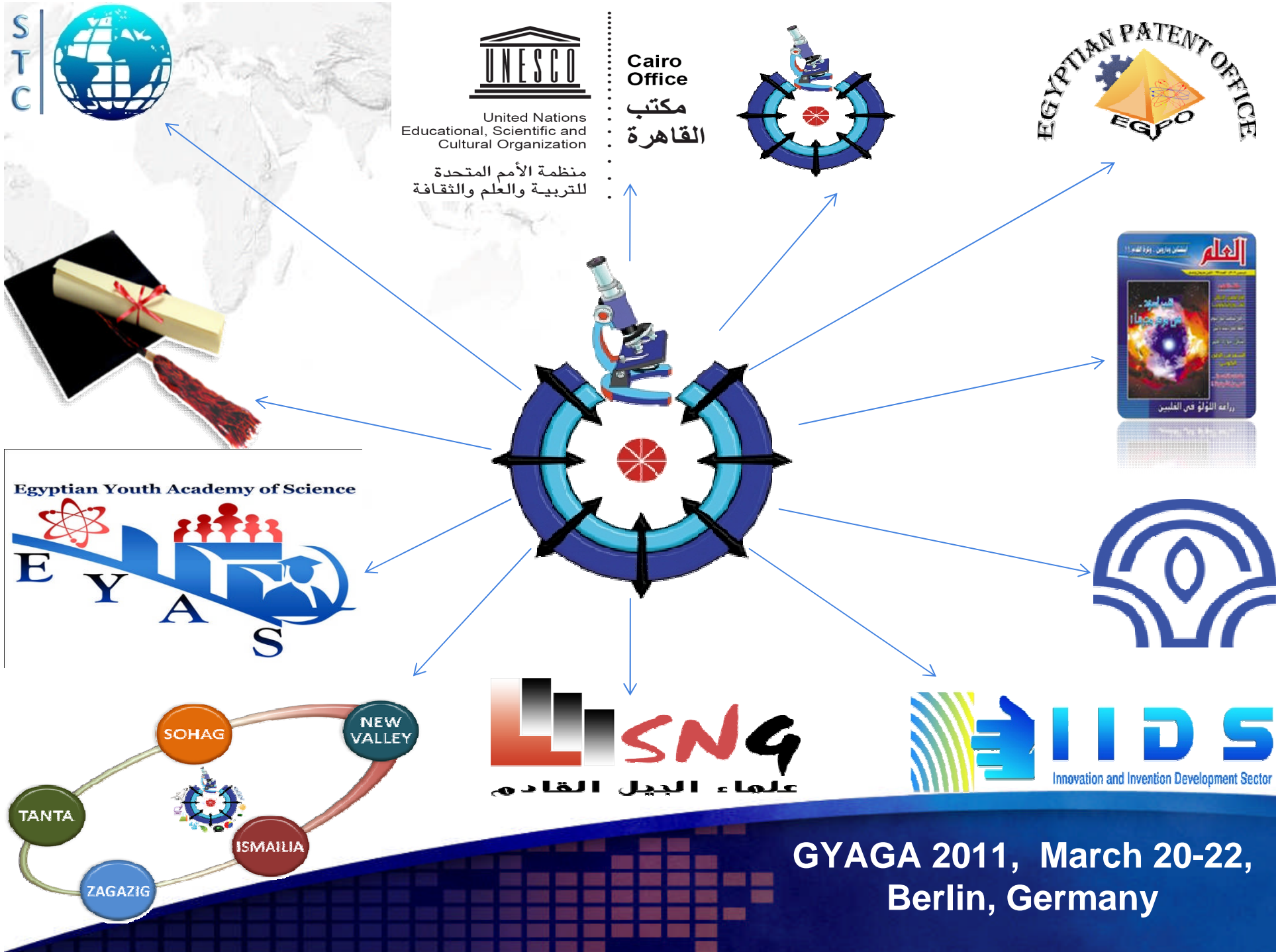
8. Supports the complete cycle of innovation

9. Empowering of youth and women in STI system*

*Promotion of Egyptian Young Academy of Science (EYAS)

*Egyptian Woman Academy of Science (EWAS)

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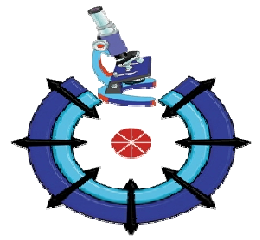
STC

United Nations
Educational, Scientific and
Cultural Organization

منظمة الأمم المتحدة
للتربية والعلم والثقافة

Cairo
Office

مكتب
القاهرة



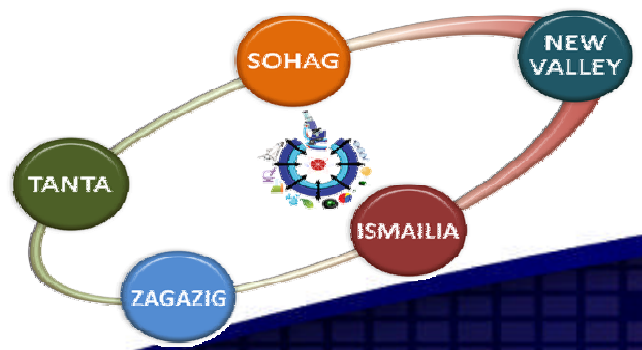
EGYPTIAN PATENT OFFICE

EGPO



Egyptian Youth Academy of Science

E Y A S



SNQ

علماء الجيل القادم

IIDS

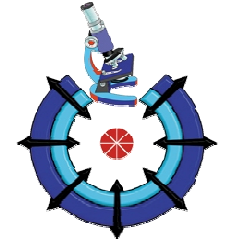
Innovation and Invention Development Sector

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علماء الجيل القادم

I: Scientists for next generation
Since 2008

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What is SNG?

ASRT offers grants M.Sc grants for highly qualified Egyptian fresh graduate on competitive basis, to bridge the gap between scientific research and the requirements of the national labor market and research institutions, which requires a high degree of skill in the performance



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Objectives:

- Prepare young researchers to lead scientific research in their organizations.
- Utmost use of juniors HR.
- Advance researcher's knowledge and skills on new scientific technologies, which can be used to improve economy.
- Foster ties between researchers and the community through joint training workshops and joint supervision.
- Enhance researcher's networking at national, regional and international levels.
- Provide participants with the body of knowledge required for self-assessment and continuous improvement of their performance.



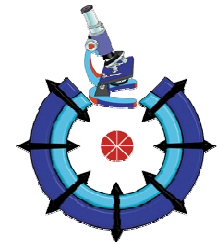
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Benefits:

- Appropriate monthly financial grant (LE 1000).
 - Access to current support for the purchase of some equipment and research purposes (LE 20 000).
 - Attend general and specialized courses (LE 10 000).
 - Award the trainee a certificate at the end of training authorized by ASRT and endorsed by the Supreme Council of Universities.
 - The specialized courses cover the areas of water, space, life sciences, humanities and social sciences, engineering, basic sciences, energy agriculture and ICT.
- **350 Egyptian fresh graduates were benefited from this program**

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Egyptian Youth Academy of Science

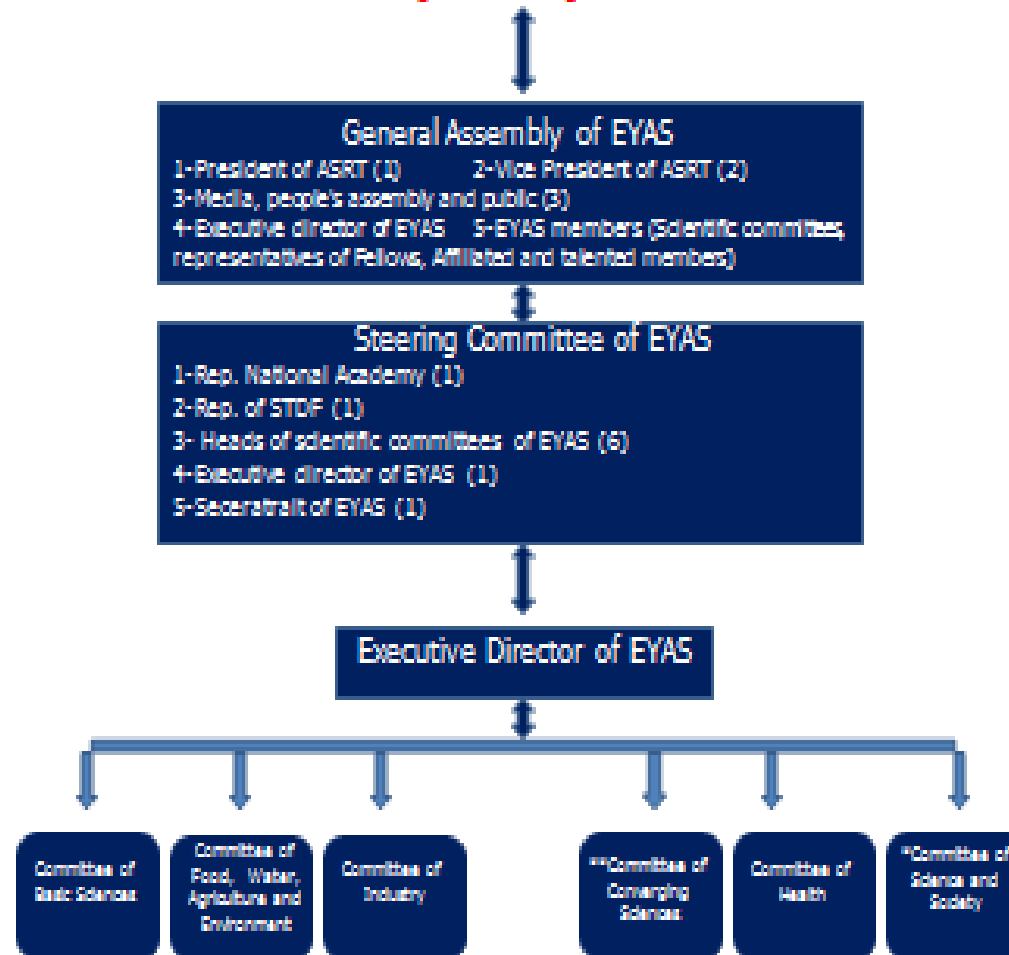


II: Egyptian Youth Academy of Science (2011)

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Higher Council of Science and technology (HCST)



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EYAS:

EYAS is an outcome of the confidence of the government of Egypt in youth as the main vehicle of development of modern Egypt, where Egypt is a juvenile country and the youth represents about 60% of total population. EYAS is also an international commitment of ASRT in the Inter Academy Panel (IAP) initiative aiming at empowering youth and women in science and technology. ASRT will host EYAS secretariat (hub), provide the support and spin off

- *Independent legal body of STI system

- *Juvenile instrument to promote STI in the country

- *Debate country problems and propose the solution



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III: Center of Excellence for Advanced Sciences (CEAS)

Since 2006

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Mission

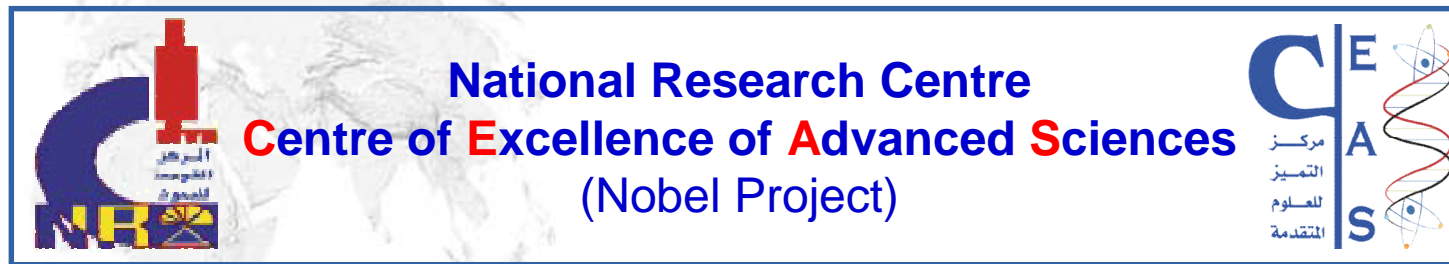
To maximize the outcomes of highly qualified juniors and seniors in advanced sciences,

Through

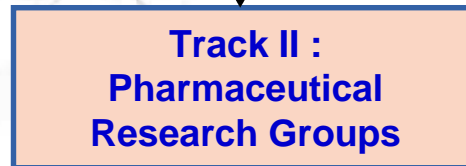
- **Creation of encouraging scientific environment,**
- **Changing brain drain to brain gain,**



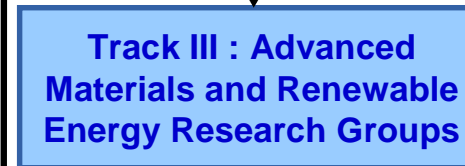
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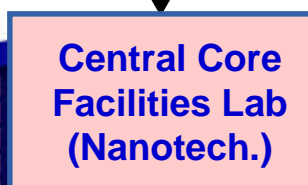
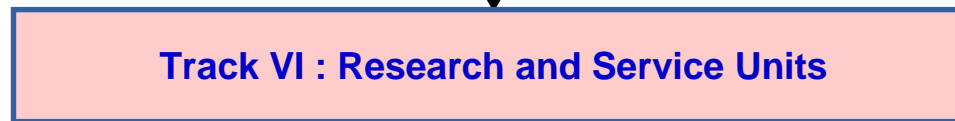
- 1- Plant Molecular Genetics
- 2- Vaccines
- 3- Infectious Diseases & Immunology
- 4- Cancer Biology
- 5- Stem Cells Research
- 6- Genetics of Hydrobiology
- 7- Safe Agriculture
- 8- Food Risk Analysis & Food Virology
- 9- Tumor Molecular Pathology
- 10- Bio - Informatics



- 1- Pharmaceutical Research Lab (Prof. M. Abdel Rehim)
- 2- Medicinal Chemistry & Drug Design
- 3- Chemistry Marine Natural Products



- 1- Advanced Materials & Nanotechnology
- 2- Renewable Energy
- 3- Laser Technology





The criteria for selection the staff members included:

- Age (below 40),
- International publications,
- Research grants,
- Scientific prizes
- Good scientific international relations with developed schools abroad.
- Preference is given to candidates having their Ph. D from developed countries.



Seasonal Evaluation

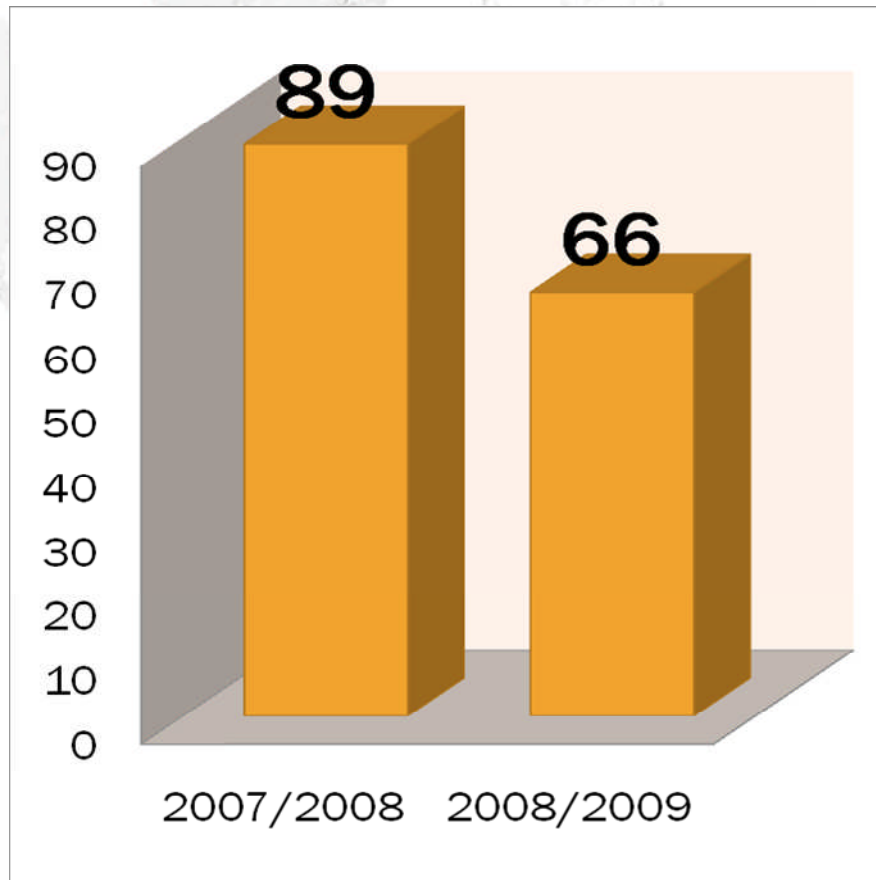
Evaluation Criteria

- **International Publications**
- **Research Projects (In-house, Nat., Int.)**
- **Scientific Prizes (In-house, Nat., Int.)**
- **Patents (Nat., Int.)**
- **Other Scientific Activities**

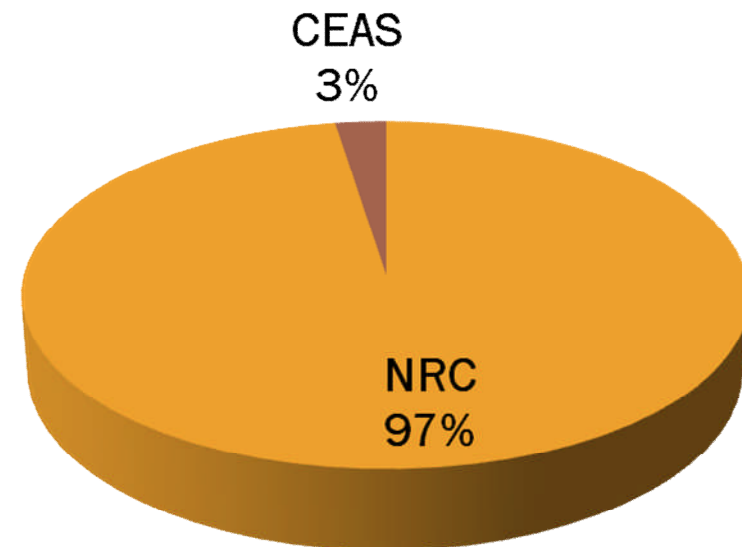


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Number of Evaluated Researchers

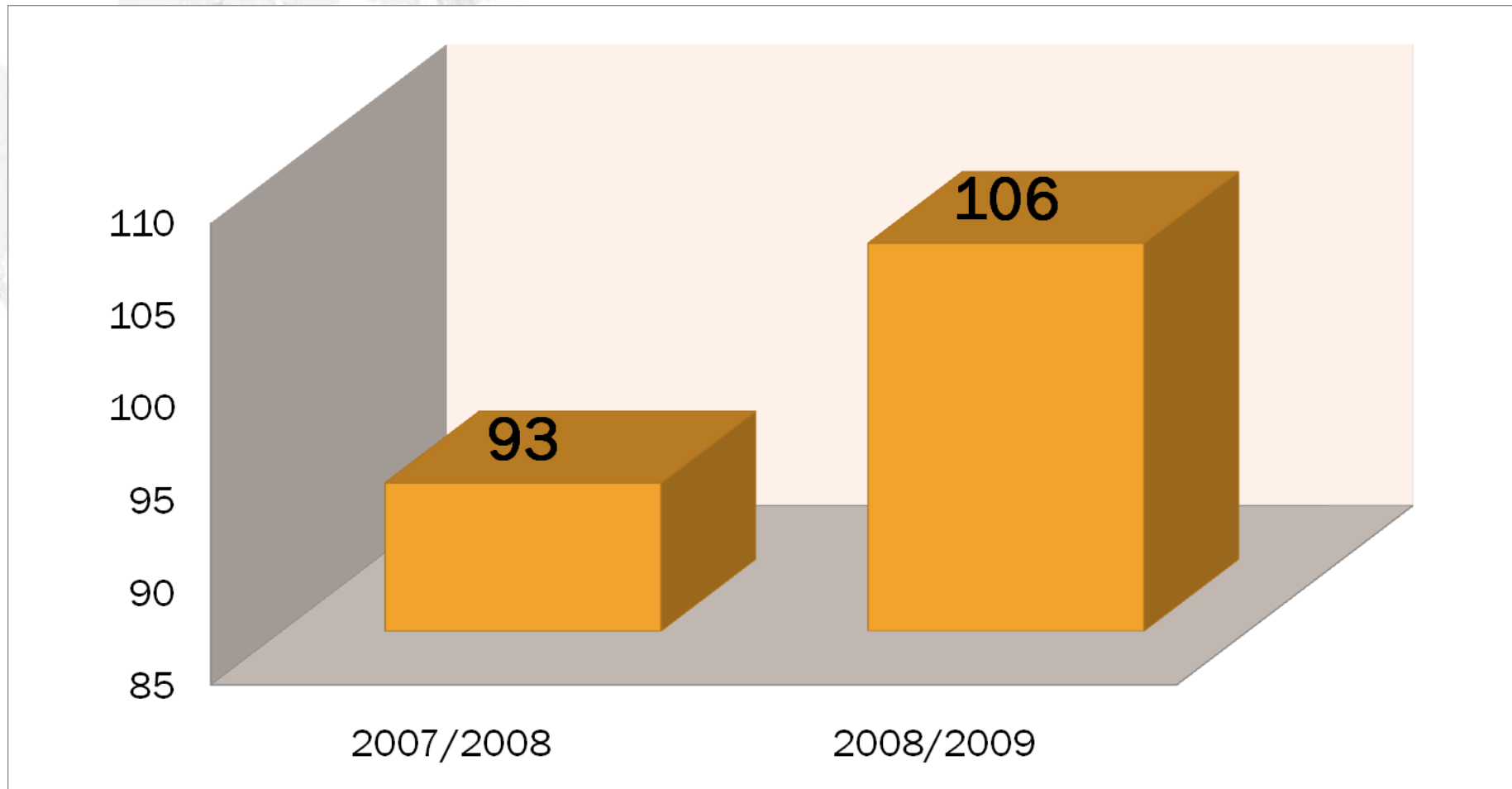


No. of CEAS Members Related to NRC



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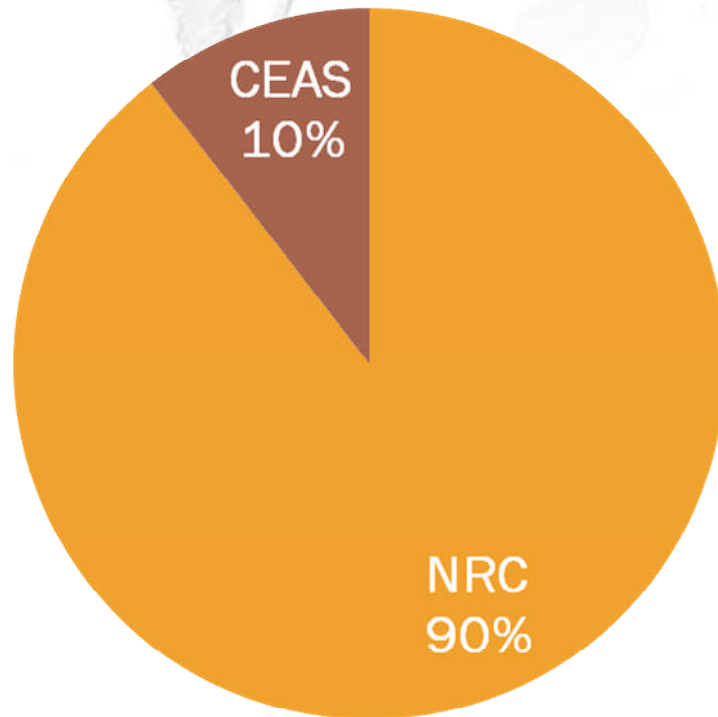
International Publications



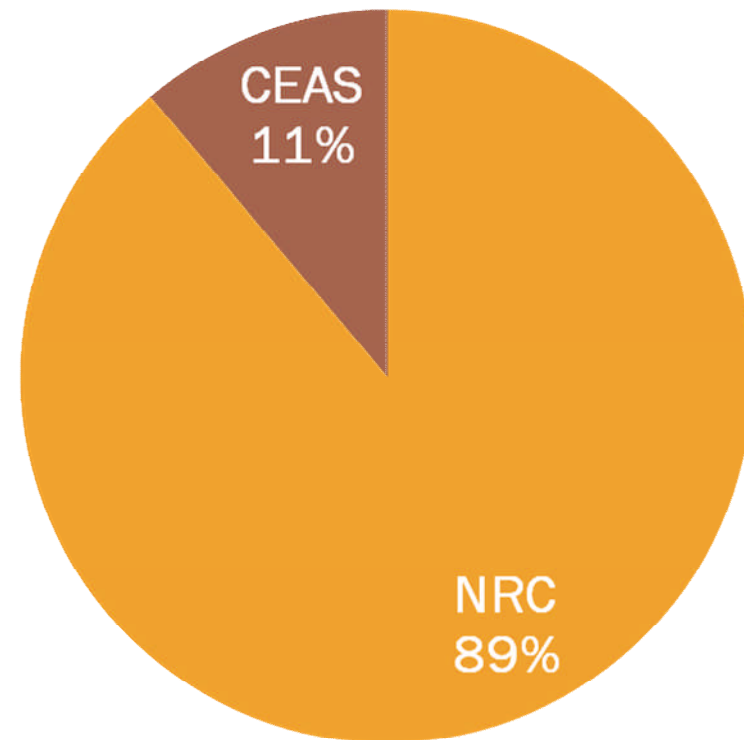
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CEAS Publications as Compared with NRC

2007/2008



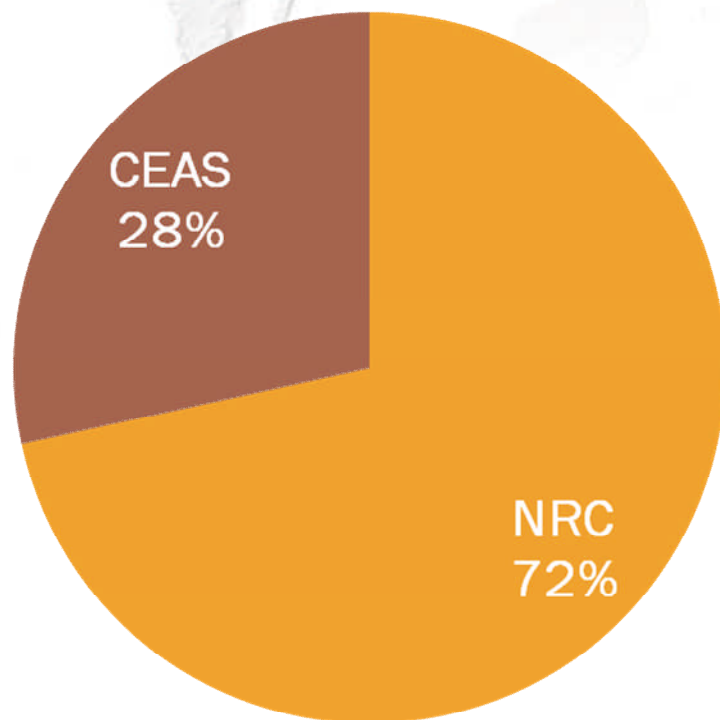
2008/2009



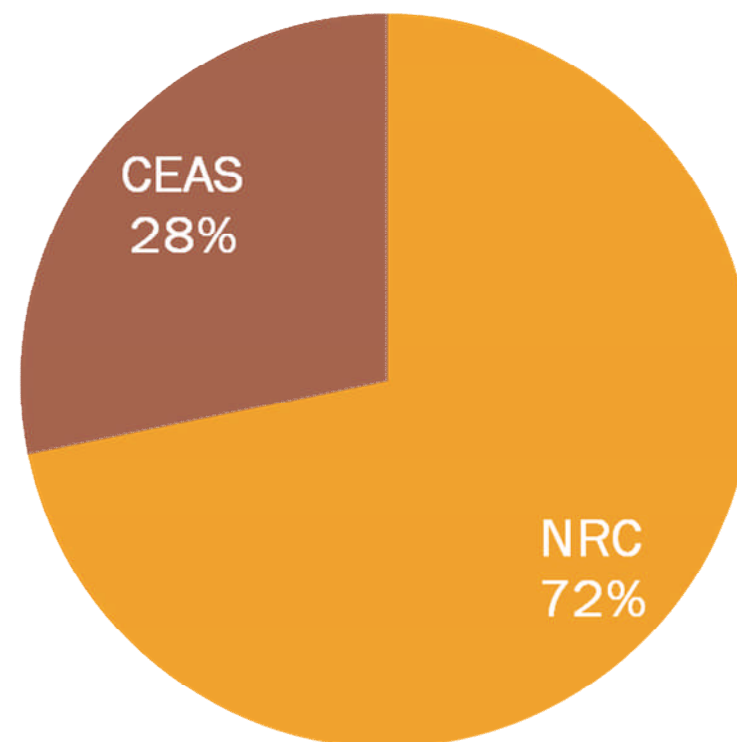
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CEAS Projects as compared with NRC

2007/2008

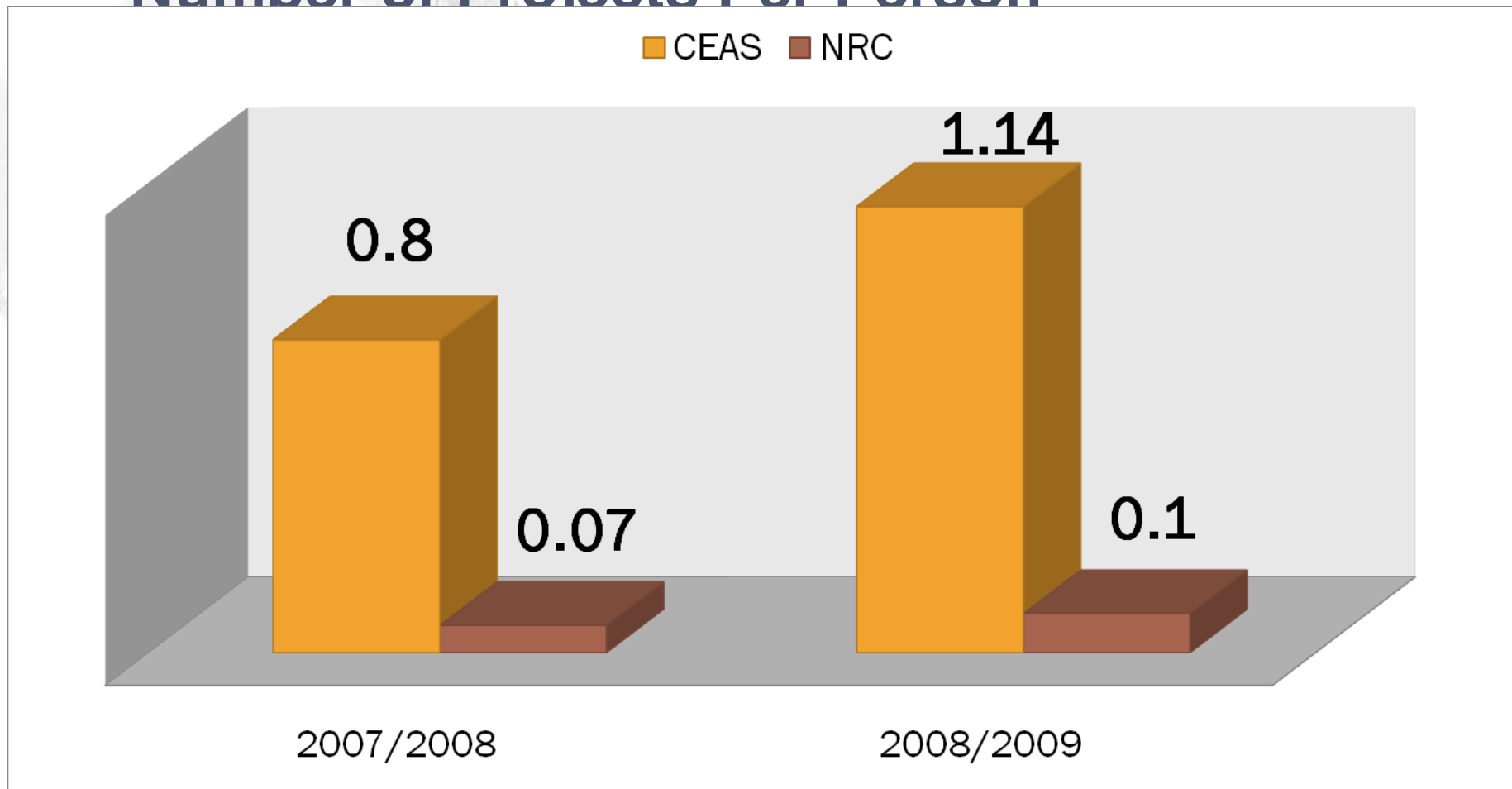


2008/2009



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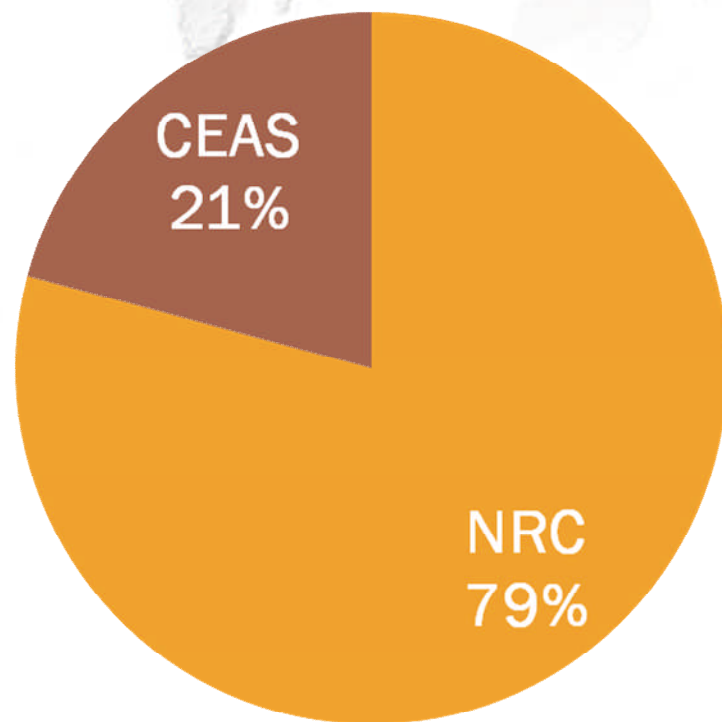
Number of Projects Per Person



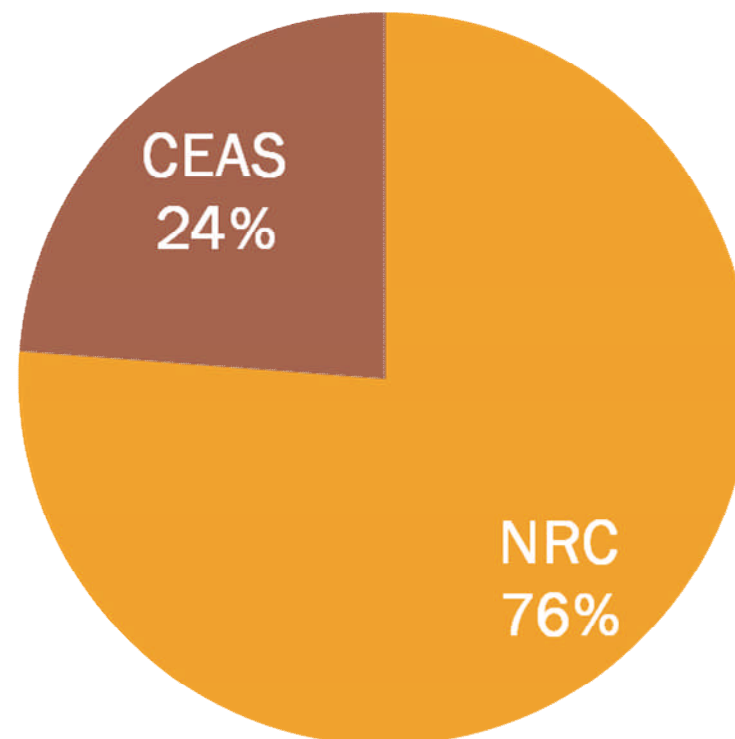
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CEAS Prizes as Compared with NRC

2007/2008



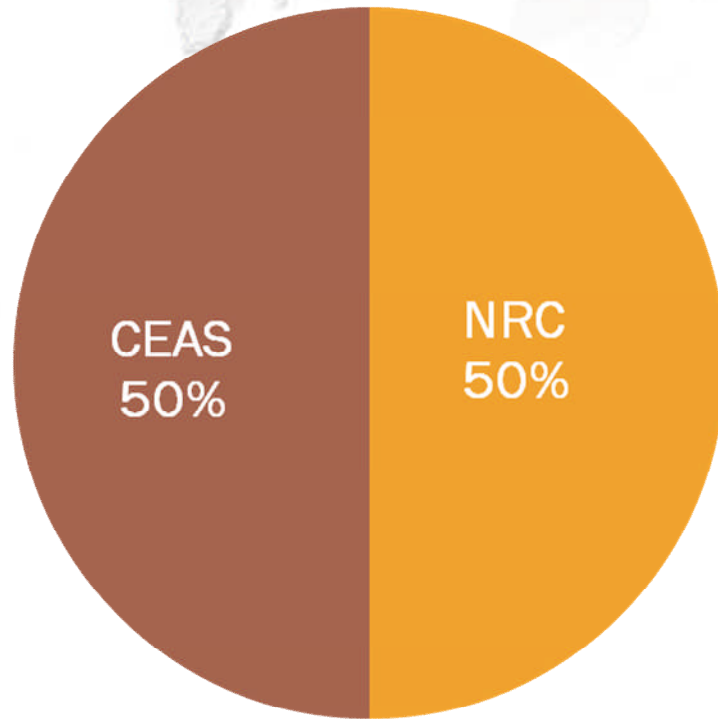
2008/2009



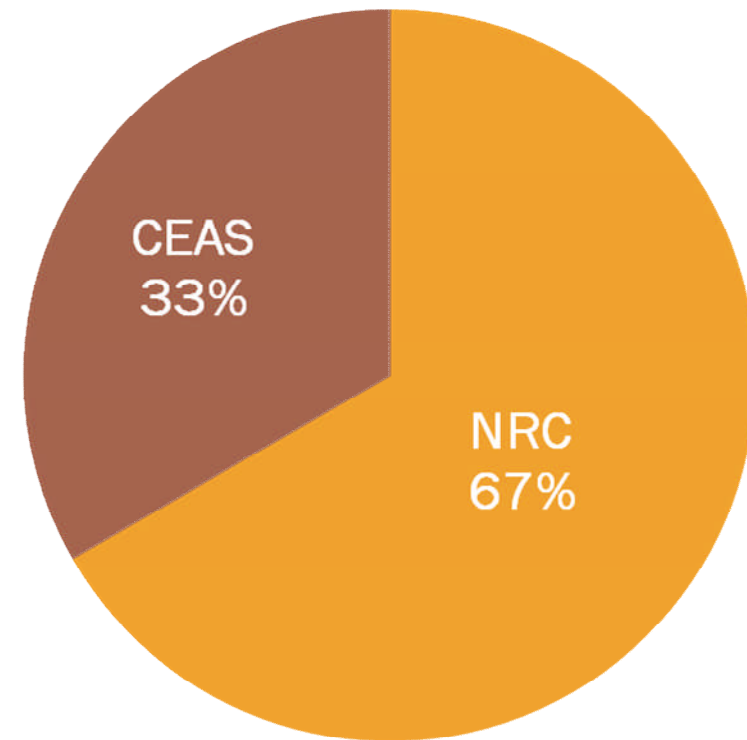
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CEAS Patents as Compared with NRC

2007/2008



2008/2009



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IV-Young Researchers Grants V- Reintegration programs

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STDF Research Grants Schemes

Young Researcher

- YR based in Egypt
- < 40 yrs
- PhD within last 10 yrs
- 3 Years
- L.E 600,000

- Landscape for R&D community
- Capacity building
- Minimize brain drain

Reintegration

- Ph.D. from a reputable Uni. (within last 5 yrs)
- < 35 yrs
- 3 Years
- L.E up to 1,500,000

- Brain Gain
- Strengthening R&D community

Basic & Applied

- Any researcher(s) based in Egypt
- 2 Years
- L.E 1,000,000

- Landscape for R&D community
- Capacity building

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Country	Corresponding Institutions	Country	Corresponding Institutions
Spain	The Council of Scientific Research of the Kingdom of Spain	Australia	The Australian Ministry of Sciences
Italy	National Research Council of Italy	Brazil	The National Council for Scientific and technological development of Brazil
Bulgaria	Bulgarian Academy of Science	North Korea	The Academy of science of Korea
Poland	Polish Academy of Science	Malaysia	The Academy of Sciences Malaysia
Hungary	Hungarian Academy of Science	Romania	The National Committee of Science and Technology of Romania
Germany	The Deutsche Forschungsgemeinschaft	Ukraine	The National Academy of Science of Ukraine
France	National Research Center of France	Jordan	The Supreme Council of Science and Technology
Slovakia	Slovak Academy of Science	Iraq	The Council of Scientific Research
Czech	Czech Academy of Science	Sudan	The National Research Council of Sudan
Turkey	The Scientific and Technological Council of Turkey	Libya	The National Research Authority
Austria	Austrian Academy of Science	Morocco	The National Scientific Research and Technical coordination and Planning Center
Cyprus	The Research Promotion Foundation of Cyprus	South Africa	The Foundation for research development of South Africa
South Korea	Korea Science and Engineering Foundation	Kazakh	The Council for human Research
	Korea Research Foundation		The Academy of Sciences of Kazakh
China	National Natural Science Foundation of China	Albania	The Academy of Sciences of Albania
	The Academy of Science of China		
Belarus	The National Academy of Belarus	Russian federation	The Russian Academy of Sciences
Finland	The Academy of Finland	Uzbekistan	The Academy of Science of Uzbekistan
India	The Scientific and industrial council of India		
	The Academy of Agriculture of India		

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Thank You