



## Professor Dr. Syed Arif Kamal

PhD (Mathematical Neuroscience); MA, Johns Hopkins, Baltimore, MD, US<sup>€</sup>; MS, Indiana, Bloomington, IN, US<sup>€</sup>; *Ex-Convener*, NCRC<sup>©</sup> (Maths), HEC<sup>®</sup>; Subject Committee (Maths), National Testing Service Pak<sup>§</sup> *Member*, Expert Panel (Math.), National Curriculum Council, Ministry of Education, Govt. of Pakistan *Member*, AIAA<sup>#</sup> (US<sup>€</sup>), IBRO<sup>‡</sup> (France); *Guest Speaker*, Harvard Medical School (US<sup>€</sup>) & ICTP<sup>‡</sup> (Italy) *Member*, University of Karachi Senate; Academic Council; Boards of Faculty (Arts and Education), BASR *Program Convener*, ETRPP<sup>‡</sup>; *Ex-Convener*, Subcomm. (Acad.), Education Comm., Transparency Int. Pak.<sup>¶</sup>

**Head, Anthromath. Group\*, Dept. of Mathematics<sup>§</sup>**  
**Project Director, the NGDS Pilot Project<sup>‡</sup>**  
**Senior-Most Professor of University**  
**Dean, Faculties of Science & Engg.**  
**Acting Vice Chancellor (April 2-7, 2016)**  
**UNIVERSITY OF KARACHI<sup>&</sup>**

*Paper Mail:* Office of Dean, Faculty of Science, University of Karachi, Karachi 75270, Pakistan  
*Telephones:* +92 21 9926 1077 (direct); +92 21 9926 1300-15 ext. 2255 (exchange)  
*Homepage:* <http://www.ngds-ku.org/kamal> • *e-mail:* [profdrakamal@gmail.com](mailto:profdrakamal@gmail.com)  
*Public Profile:* <http://pk.linkedin.com/pub/dr-syed-arif-kamal/12/b71/400>

## COMMUNITY OUTREACH: ACCOMPLISHMENTS AND GOALS

*My Philosophy of Life*  
*While there is a will there is a way*

NO handwritten notes except original signatures.  
VOID unless bears original signatures on every page.  
DATE and TIME of printing must match on every page.

**Summary — Realizing that the roots of all endeavors lie in community acceptance and support; start on what the community knows and build on what the community has to educate in *numeracy*, in addition to *literacy*, for knowledge-based and computer-oriented communities. This should create a society in which people ask for backing of a claim or a proposal on the basis of data collected according to established statistical principles.**

**Philosophy** To take into confidence the community (where work is being done) through involvement in the decision-making process, the planning and the implementation of various programs. To educate society about the importance of mathematics as a tool of the tools, having predictive power and as a branch of knowledge, which appreciates and cultivates beauty of nature through the use of numbers.

**Methodology** General public needs to be educated in terms of *numeracy* (ability to interpret numbers/data), in addition to *literacy* (ability to read/write/express). Popular articles and lectures to be used to achieve this goal. Students to be trained to generate mathematical solutions of indigenous problems. Schoolteachers to be motivated so that they pass on a positive learning attitude to their students.

© National Curriculum Revision Committee  
® Higher Education Commission, Govt. of Pakistan  
§ National Testing Service Pakistan  
# American Institute of Aeronautics and Astronautics  
‡ International Brain Research Organization  
‡ The Abdus Salam International Center for Theoretical Physics, Trieste, Italy

‡ The Early Talent Research Participation Program  
¶ Transparency International Pakistan  
\* Anthromathematics Group  
§ Department of Mathematics  
‡ National Growth and Developmental Standards for the Pakistani Children <http://ngds-ku.org>  
€ United States (of America)

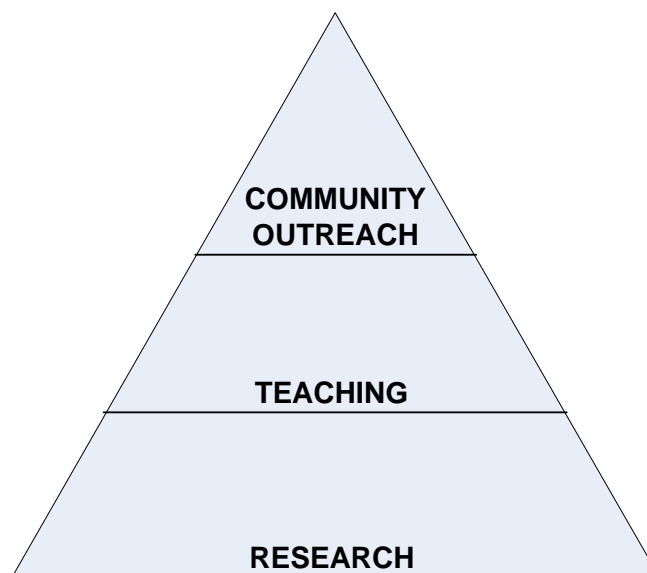
*This statement contains views and information as of:* May 21, 2016 (0000h UTC)

Signatures \_\_\_\_\_

<http://www.ngds-ku.org/kamal>

[profdrakamal@gmail.com](mailto:profdrakamal@gmail.com)

Page 1 of 3



**Research meant to empower teaching for community outreach**  
<http://www.ngds-ku.org/Presentations/Research-Teaching-ComDev.pdf>

- Accomplishments** A six-fold approach is adopted:
- a) Writing popular articles for general public (please click "Articles on Science and Modeling" hyperlink appearing on my homepage to review sample work).
  - b) Conducting programs on local radio stations and television channels (*e. g.*, Geo TV, Radio Pakistan, FM 107, Aaj TV, Indus News TV, Express News TV) elaborating the importance and the applicability of mathematics.
  - c) Demonstrating the power of mathematics to the community in the health care of children through *the NGDS Pilot Project*, conducted in schools run by Armed Forces of Pakistan during 1998-2008 and a civilian school during 2011-2014.
  - d) Introducing high-school students to prominent researchers and exposing them to research conducted in universities through *the Early Talent Research Participation Program*, conducted during 2002-2010.
  - e) Mathematics pre-university-teacher-training through *the NGDS Workshop Series*.
  - f) Community involvement through training in anthropometric techniques for Department of Special Education, University of Karachi and Beacon Light Academy during 2006-2011 (good health habits to be imparted in community through educating parents about maintaining proper weight-for-height).

These efforts have proven fruitful. SUPARCO (space agency of Pakistan) started hiring mathematicians starting 2003. Engro Asahi Polymers & Chemical (Ltd) offered internship to the students of MSc (Applied Mathematics) and MIBM. A seminar *Industrial and Business Mathematics in the Third Millennium* was organized by Department of Mathematics, University of Karachi, in which economists, industrialists and mathematicians gave presentations in order to establish a dialogue between university and industry.

On a more recent note, I presided a seminar on *Drug-Abuse Prevention among Youth* jointly organized by the Ministry of Interior and Narcotics Control and Department of Psychology, University of Karachi on Thursday, April 7, 2016. Topic of my opening lecture was 'From Drug Abuse to Substance Abuse: Nip the Evil in the Bud'. The proposed program of daily morning inspection of primary-school students <http://www.ngds-ku.org/Papers/J33.pdf> to prevent bringing in of controlled substances and to spot tendencies of destructive behavior was appreciated very much by the Federal Secretary, who invited University of Karachi to submit proposals in this regard.

*This statement contains views and information as of: May 21, 2016 (0000h UTC)*

Signatures \_\_\_\_\_

<http://www.ngds-ku.org/kamal>

[profdrakamal@gmail.com](mailto:profdrakamal@gmail.com)

Page 2 of 3

**Goals** For the coming years priorities are arranging internships in industry for undergraduate students, founding Cyber Science Society (utilizing internet to provide students living in remote areas an opportunity to interact with renowned scientists), preparing Pre-University Integrated Science and Mathematics Curriculum as well as establishing National Center for Establishing Growth and Development Standards for the Pakistani Children.

*End of statement*

*Web address of this statement:* <http://www.ngds-ku.org/goals/Univcom.pdf>

*This statement contains views and information as of:* May 21, 2016 (0000h UTC)

Signatures \_\_\_\_\_

<http://www.ngds-ku.org/kamal>

[profdrakamal@gmail.com](mailto:profdrakamal@gmail.com)

*Page 3 of 3*