

ANNUAL REPORT

2012



PIR MEHR ALI SHAH
ARID AGRICULTURE UNIVERSITY
RAWALPINDI

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ABOUT THE UNIVERSITY

Pir Mehr Ali Shah Arid Agriculture University Rawalpindi (PMAS-AAUR) was established in 1994 as University of Arid Agriculture by upgrading the Barani Agriculture College on the recommendation of Barani Commission Punjab. The mandate of the university is to produce high quality Agricultural Scientists and to form an organized scientific infrastructure for teaching and research for the development of dry land region of the country in general and Pothwar in particular; thus minimizing the income gap between the rich and poor.

Since its inception, PMAS-AAUR has experienced remarkable growth and is offering undergraduate as well as post graduate degree programs in variety of disciplines. The University includes a Faculty of Crop and Food Sciences, Faculty of Sciences, Faculty of Forestry, Range Management and Wildlife, Faculty of Veterinary & Animal Sciences, University Institute of Management Sciences (UIMS), University Institute of Information Technology (UIIT), Institute of Education & Research and University Institute of Biochemistry & Biotechnology. The University building contains an auditorium, multi-storied administrative and academic blocks, a state of the art library and a sports gymnasium.

Pursuit of excellence on the University campus is a function of competent and dedicated university faculty. PMAS-AAUR has, therefore, made constant efforts at staff development with the result that nearly 50% of the faculty possesses Ph.D. degrees, while the others have M.Sc. (Hons) and M.Phil degrees.

Furthermore, PMAS-AAUR is committed to delivering an outstanding student experience; as well as to enjoy a reputation for excellence in teaching and learning alongside research. Students actively participate in extracurricular and co-curricular life on campus which includes speech events, seminars and activities related to entrepreneurial skill development. Together with a research-informed curriculum, and extracurricular activities, PMAS-AAUR strive to provide a well-diversified environment to students so that they can effectively contribute towards development of the country.

EXECUTIVE SUMMARY

During the year 2012, Pir Mehr Ali Shah (PMAS) Arid Agriculture University Rawalpindi made substantial efforts to improve academic as well as Research activities alongwith financial resources. Various teaching departments were upgraded/ strengthened through the development of infrastructure, procurement of sophisticated scientific equipments and purchase of books etc. The faculty members completed 121 Research Projects worth Rs. 78.683 million which were sponsored by various funding agencies.

Eighteen faculty members were promoted/inducted to over come staff shortage for teaching in different faculties. Faculty members attended sixty three National/International workshop/ seminars/ symposium/ conferences to share/transfer knowledge in different scientific fields within the country and globally.

The linkage between faculty, Industry and farming community was further promoted/ strengthened to ensure the penetration and achievements of objectives of the university. Memorandum of Understandings with various national and International organizations were signed for academic and research sharing. The provision of better Research facilities encouraged the faculty to publish 312 Research Papers in National (136) and International (176) reputed journals. The University improved its position in HEC ranking of the Universities and stood 7th out of 116 Universities and 2nd in Agriculture Universities of Pakistan.

ACADEMIC ACHIEVEMENTS

ESTABLISHMENT OF PAK-KOREA CAPACITY BUILDING CENTER FOR AGRICULTURE & LIVESTOCK TECHNOLOGY AT ARID AGRICULTURE UNIVERSITY RAWALPINDI, PAKISTAN

The Korean International Cooperation Agency (KOICA) has signed a Memorandum of Understanding/Record of Discussion with the PMAS-AAUR to establish a capacity building for training/capacity building of the local farming community about agriculture and livestock. The total cost of the project in the form of aid and grant is 3.5 million US\$ committed by the KOICA in order to implement the project.

This center will be contributing to the capacity development initiatives of farming community taken by the AAUR through the improvement of educational infrastructure. It will also help to improve the institutional capacities by transferring technology and Korea's experience and know-how to the Pakistani counterparts, to increase farm income through quality improvement and enrichment of products.

NEW DEGREE PROGRAMS INITIATED

The University initiated following new degree programs which were also approved by the Academic council:

BS Forestry

Ph.D Computer Science

FACULTY DEVELOPMENT

Faculty Development is a continuous phenomenon in order to achieve academic excellence. Therefore, to improve academic programs, the addition of new faculty is a regular feature at the University. During 2012, PMAS-AAUR management has great coherence, liaison and coordination with faculty in enhancing quality education & research opportunities. Resultantly, PMAS-AAUR is producing useful & trained human resource in specialized sectors of Agriculture, Sciences, Information Technology, Management Sciences and Allied Disciplines. Keeping above in view following new staff was inducted in various departments on the recommendation of the selection board after subsequent approval by the University Syndicate.

Faculty/Institute	Lecturer	Assistant Professor	Associate Professor	Professor	Total
Crop & Food Sciences	-	6	1	-	7
Sciences	1	3	-	-	4
Forestry, Range Management & Wildlife	-	1	-	-	1
Veterinary & Animal Sciences	2	3	-	-	5
Continuing Education and Women Division	1	-	-	-	1
TOTAL	04	13	01	00	18

SHORT COURSES HELD

In addition to degree programmes, the Faculties of the University organized following short courses in the previous year.

- ❖ Tunnel Farming/Kitchen Gardening 01 Month
- ❖ Artificial Insemination in Cattle and Buffalos 01 Month
- ❖ Training in Tunnel Gardening 05 Days
- ❖ Tips and Techniques of Tunnel Farming 05 Days
- ❖ High Value Vegetable Production 03 Days

STUDENT ENROLLMENT

There has been continuous increase in the student intake in various disciplines and the student enrollment increased from 4677 to 6240 in the last five years. The detail of which is given in table below:

S No	Name of Degree	2008	2009	2010	2011	2012
01	Graduates	1967	2291	2513	2907	3028
02	Post Graduates	2566	2561	2494	2647	2998
03	Doctoral	144	160	185	191	214
	Total	4677	5012	5192	5745	6240

LINKAGE WITH NATIONAL/INTERNATIONAL ORGANIZATIONS

In order to work and carry out research in close co-operation with National and International organizations, the University signed memorandum of understanding (MoU) with the following International/national organizations:

1. Agribusiness Support Fund
2. Dairy and Rural Development Foundation
3. Sustainable Use Specialist Group-Central Asia (SUSG-CASIA) Quetta
4. Water and Power Development Authority (WAPDA)
5. Department of Environmental Engineering, Bioenergy Technical University of Denmark

DOCTORAL /POST DOCTORAL TRAININGS / SHORT-TERM TRAININGS

The faculty members were encouraged to improve their qualifications and visit universities abroad to update their technical knowledge and transfer technical know how back home from international universities/institutes. During the year, five faculty members obtained post-doctoral fellowships from HEC and executed research work in UK, China, New Zealand, Australia and USA. Moreover, eight faculty members/Administrative staff proceeded on short-term trainings/courses in Germany, USA, Sweden, Italy, Malaysia and Netherlands.

RESEARCH FOCUS

The Office of Research, Innovation & Commercialization (ORIC) a central staff office reporting to the Vice Chancellor, is charged with administrative responsibility for all University research and related activities involving extramural sponsorship. In fulfilling its duties, the Office of Research served as both a centre of advocacy for research and related activities and facilitator of the research environment. The functional areas supported by the Office of Research staff include information services, project & proposal development assistance, grants and contracts administration for pre-award and selected post-award tasks. All proposals submitted by the University personnel were transmitted to /and reviewed by Office of Research staff to assure adherence to internal and external policies and procedures.

University faculty focused their research activities on the issues of farming community of Barani areas in general and Pothwar in particular. These included projects related to soil conservation, weed management, drought tolerance studies in wheat through genetic engineering and environmental related issues. The following Research projects were operational during 2012.

- Potential Application of Nanotechnology in Crop/Vegetable Growth, Nutrient Use Efficiency, Crop Tissue Culture and Tolerance to Osmotic Stress
- Promotion of Safflower (*Carthamus tinctorius*) through Participatory Approach in Pothwar
- Strengthening Informal Seed Supply System at Two Locations in Pothwar Through Participatory Technology Transfer
- Isolation of Plant Growth Promoting Rhizobacteria (PGPR) from Legumes Rhizosphere and N₂ Fixation by Legumes under Rainfed Conditions of Pothwar
- Characterization of Soil Bacteria using gene sequencing and response of cereal to associative N₂ – fixer and P-solubilizers”
- Stimulation of Soil Biological Activity Through Organic Amendments for Enhancing Phosphorus Availability in Soil-Plant System
- Isolation and Identification of plant growth promoting N₂-fixing soil bacteria using molecular techniques for improving legume cereal cropping system
- Collection of loquat genotypes of Pakistan and their multiplication through conventional vegetative methods and tissue culture techniques
- Production of Pathogen Free, True to Type Olive Plants through Tissue Culture
- Varietals Improvement of Gladiolus through in vitro Mutation
- Pre and Post harvest treatments of food grade chemicals to improve peach fruit quality and shelf life
- Technology Transfer to Potato Growers in Relation to Pathogen Free Seed Potato, Management of Diseases and Adoption of improved Agro techniques
- Identifying Drought Tolerant Synthetic Wheat Lines and Determining Their Genetic Diversity Through DNA Markers.

- Genetic diversity and phylotyping of *Ralstonia Solanacearum* strains causing bacterial wilt of Chilies in major chili growing areas of Pakistan
- Disease Mapping and Characterization of Lentil Wilt Pathogen in Pakistan
- Studies on characterization and management of leaf crinkle virus infecting black gram
- Utilization of plant growth promoting rhizobacteria for the induction of systemic resistance in potato seed against bacterial rot diseases
- Rhizobacterial Formulations Application Technology for the Control of Major Pathogenic Root Infecting Fungi in Chickpea for Sustainable Crop Production
- Molecular Studies on a Complex of Potyviruses Infecting Solanceous Vegetable/Crops in Pakistan and Their Management
- Establishing year-round rearing facilities of bumble bees, important pollinator of commercial fruit and vegetable crops.
- Isolation, purification and monitory analyses for production of edible oil from wild olive.
- Production of Butanol and ethanol from agricultural and Municipal Wastes
- Characterization of Putative Promoter Elements in OsRGLP2 Promoter Region
- Determination of Biological Activities and Micropropagation of *Polygonum Amplexicaulis*; A popular Medicinal Plant of Northern Pakistan
- Population size, food Habits and Economic Importance of Commensal Rodents in Rural Pothwar
- Screening of different avian egg yolks for cryopreservation of buffalo semen: a step to improve fertility in buffaloes with frozen semen
- Detection of Multiple Anthelmintic Resistance of Nematodes in Small Ruminants Grazing in Barani Region
- Biodiversity and Ecology of Bats and Rodents in the Thorn Forests and Croplands of Potohar Plateau
- Exploring of genetic variation for drought tolerance in wheat by using physiological biochemical attributes
- Virulence Analyses of *Xanthomonas Campestral* pv Sesame and *Pseudomonas Syringae* pv sesame, the Causal organisms of sesame (*Sesamum Indicum* L) bacterial blight.

- Floristic study of Arid Zone (Thal Desert), Punjab Pakistan
- Ethno-botanically Survey of Thal Desert, Punjab, Pakistan
- Ecology of Indian pangolin *Manis Crassicaudata* in Potohar Region
- Monitoring of Polycyclic Aromatic Hydrocarbons Exposure among Highway Toll Bar Attendants and GT Road Bus Drivers as Indicator of Environmental and Occupational Hazards in Suburbs of Rawalpindi and Islamabad Cities
- Bio-treatment of Industrially Discharged Azo Dye Contaminants Using Bioaugmentation
- Utilizing Bacterial ACC-Deaminase Biotechnology to Mitigate Impact of Water Stress (Drought) on Cereal Crops

RESEARCH PROJECTS FUNDING

The PMAS-AAUR Faculty also undertook Research Projects in addition to teaching assignments. These projects were sponsored by different funding/donor agencies. The detail of Research Projects is given below:

S No	Name of Funding Agency	Completed	On Going	Total No of Projects	Amount (Rs. in M)
1	Higher Education Commission	18	20	38	124.932
2	Pakistan Science Foundation	08	10	18	26.906
3	Pakistan Agriculture Research Council	10	01	11	25.432
4	Punjab Agricultural Research Board	00	01	01	3.80
5	Endowment Fund UAF	01	03	04	8.376
6	PMAS-AAUR own Resources	84	23	107	11.442
7	International Foundation for Science	00	01	01	1.102
	Total	121	59	180	201.99

ADMINISTRATIVE ACTIVITIES

In pursuant to good governance and transparency in the system, the meetings of administrative bodies of PMAS-AAUR were held regularly under the Chairmanship of the Vice Chancellor. A participatory approach was adopted in decision making and various academic, developmental and administrative decisions were taken in consultation with all members of committees constituted for the purposes and thereafter, approved by the statutory bodies.

UNIVERSITY SYNDICATE

The Syndicate is the Chief executive body of the University, which holds its meeting as and when required to take up & ratifying the decisions of lower bodies and embark upon decisions of its own. During the reporting period, three (03) Syndicate meetings were arranged and necessary decisions were taken in the best interest of PMAS-AAUR.

ACADEMIC COUNCIL

In year 2012, two (02) meetings of Academic Council were conducted, wherein revised/amended and new curricula for Undergraduate and Postgraduate studies were discussed and approved. The general rules and regulations pertaining to academic and administration were also argued and the decisions were made for implementation.

FINANCE & PLANNING COMMITTEE

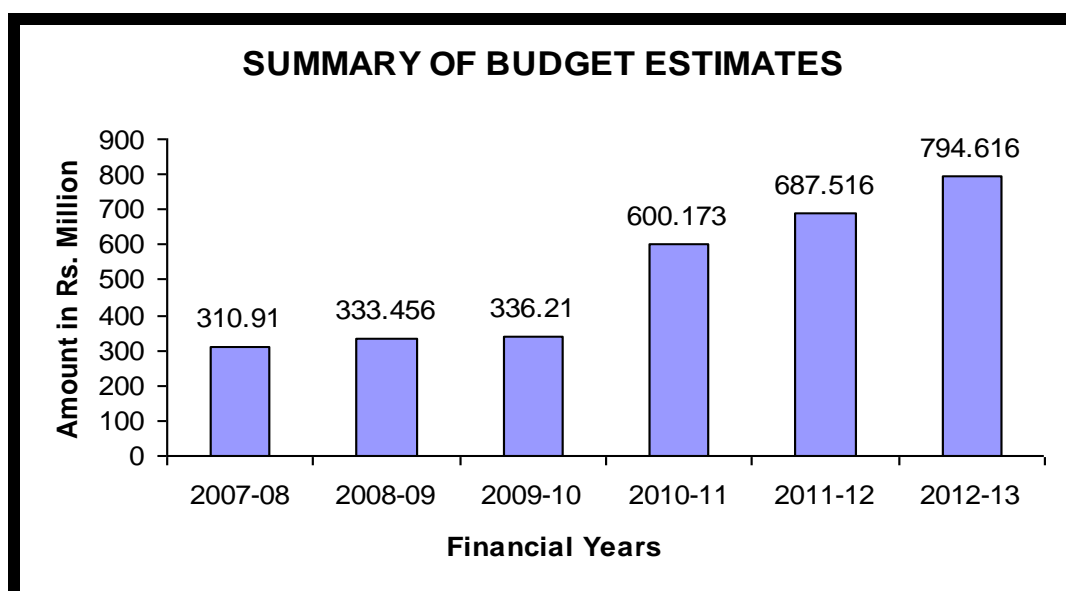
The Finance & Planning Committee collaborated twice in 2012 for resolution of financial issues and authorization of budget. After interactive sessions by the members, budget for the year and other related financial matters were approved.

ADVANCED STUDIES & RESEARCH BOARD

In the academic year 2012, Advanced Studies & Research Board was met for two times; the board afforded approvals and advised amendments, where necessary, on admission to post-graduate level, synopsis and research titles of post-graduate students, rules and regulations. The Board also scrutinized various research projects and approved/referred for revision.

FINANCIAL RESOURCES

Utmost efforts had been put in to enhance the financial resources of the University. The total budget of PMAS-UAAR for the year 2012-13 was escalated up to Rs. 794.616 millions in comparison to correspondence year's budget amounting to Rs: 687.516 millions.



TECHNOLOGICAL INFRASTRUCTURE

DIGITAL LIBRARY

HEC National Digital Library (DL) is a programme to provide researchers within public and private universities in Pakistan and non-profit research and development organizations with access to international scholarly literature based on electronic (online) delivery, providing access to high quality, peer-reviewed journals, databases, articles and e-Books across a wide range of disciplines. The e-books support programme will allow researchers to access most of the important text and reference books electronically in a variety of subject areas. Around 75,000 number of electronic contents have been made available through the Digital Library Programme. The Faculty Members/Researchers/Scholars of the University is taking full advantage of the above mentioned facility in the form of e-library and access to the internet.

The new resources were added in the last year and changes will appear on the website page soon. The new sources are as follows:

- Informs
- Duke University press
- IET library
- American Society of Agriculture and Biological Society
- Canadian Science publishing
- International Forestry Review
- University of Chicago Press
- Royal College of Physician
- World Bank Library

Their access of URLs is as follows and one may test on access and disperse the information for these resources to most of the scholars.

<https://elibrary.asabe.org/>

<http://www.ingentaconnect.com/content/nrc>

www.dukejournals.org

<http://digital-library.theiet.org/>

<http://journals.informs.org/>

http://www.cfa-international.org/international_forestry_review.php

www.journals.uchicago.edu

<http://elibrary.worldbank.org/>

PERN2

Pakistan Education & Research Network PERN2 established a high speed dedicated link for the universities/institutes and other academic sectors of Pakistan. PERN2 provides students, faculty members and researchers a fully integrated and dedicated communication infrastructure using advanced Information & Communication Technologies.

CAMPUS MANAGEMENT SOLUTION

Campus Management Solution is the most effective tool that has automated the management functionality of this university by streamlining the processes involved. It has reduced the manual handling of processes and thus helps in effective and accurate outcomes. CMS also helps in maintaining transparency in admissions and accounts processes and reduces administrative overhead by providing powerful services. It helps in effective decision making of authorities by generating reports from different aspects. This system was introduced in this university in the year 2010 and since then the performance of this system is improving day by day. At present the following modules are working in this system.

CAMPUS MANAGEMENT MODULES.

- Admissions Module
- Academic Module
- Examinations Module
- Personnel Module

The **Admission Module** automates the admission process of the university and streamlines the process involved for efficient and effective management. This module starts with the admission offered by the University for the new Session. Then prospectus sale starts. This module keeps track of all the information Department wise / Degree wise.

The system first keeps record of the entire candidates that applied for various degree programs offered by the university and automate the process of merit lists generation and fee submission process. It also provided the facility to transfer the degree programme of student if required and transfer the fee structure accordingly.

In the **Academic Module** the complete academic record of each student has been maintained in this system. It includes Enrolments, Course Offering, Scheme of Study, Students Attendance, Teacher Course Evaluation etc.

In the **Examination Module** the complete examinations record of each student has been managed. This helps in preparation of DMCs / Degrees as well.

In the **Personnel Module** the Employees record has been maintained. All these modules produced different reports that help the management in proper decision making. The next target of the CMS team is to develop an online Admission System.

DEVELOPMENT PROJECTS

The University carried out various plans, formulated strategies & putting in strenuous efforts to enhance the financial resources from avenues outside PMAS-AAUR. Funds were also fetched from the Higher Education Commission of Pakistan under different schemes for establishing/strengthening new departments at PMAS-AAUR. These efforts will create more research facilities for the students and the faculty members.

Development Projects (Completed)	Cost (Million Rs.)
• Development of Academic Facilities at UAAR	49.740
• Establishment of Centre for Information Technology.	27.961
• Strengthening of Higher Education Facilities at UAAR	39.645
• Strengthening & Modernization of Laboratories	21.700
• Establishment of Centralized Instrumentation Centre	38.935
• Establishment of Department of Range Management & Forestry	35.972
• Establishment of Fiber Optic Backbone & Campus Wide Local Area Network	25.300
• Production of Pathogen Free Horticultural Plants	35.884
• Construction of Hostel for Visiting Faculty	24.438
• Construction of Hostel for Students	36.436
• Strengthening of Department of Soil Science & SWC	33.580
• Strengthening of Centre for Information Technology	34.346
• Strengthening of Department of PBG	31.783
• Strengthening of Sports Facilities at UAAR	38.885
• Strengthening of Department of Entomology	34.783
• Establishment of R&D Facility in Hydroponics at UAAR	52.546
Total	561.934
Development Projects (On-Going)	Cost (million Rs.)
• Establishment of Faculty of Veterinary & Animal Sciences	468.620
• Establishment of University Institute of Biochemistry & Biotechnology	358.619
• Development On Farm Students Research Facilities	343.224
• Strengthening of Department of Wildlife Management	36.141
• Strengthening/ Up gradation of Library Facilities at PMAS-AAUR	41.021
Total	1247.625

DELEGATES & VISITS

1. A foreign delegation comprising of Prof. Dr. Huseyin PADEM, Rector the International Burch University Bosnia, Dr. Abdul Razzaq Memon and other officials of the University alongwith Prof. Dr. Saqlan Naqvi visited Biotechnology Laboratory on 06.03.2012 and showed interest in on going projects. Prof. Dr. Nadeem Akhtar Abbasi, Chairman, Department of Horticulture gave briefing to the delegation regarding the Horticulture Departmental activities, current projects and prospects of collaboration between their Organizations. The delegation included:
 - i) Prof. Dr. Huseyin PADEM, Rector International Burch University
 - ii) Prof. Dr. Abdul Razzaq Memon
 - iii) Harun KOKEN, Rumi forum
2. A foreign delegation comprising of three Spanish persons headed by Arrate Hurbe Recondo Engineer in Agriculture visited the department of Horticulture on 16.04.2012. They were briefed regarding departmental activities, projects and prospects of collaboration between their Organization and PMAS-AAUR for training provision and technology transfer to Gilgit-Baltistan farming community. Prof. Dr. Nadeem Akhtar Abbasi, Chairman, Department of Horticulture briefed the delegation.
3. A class tour from Allama Iqbal Open University Islamabad (AIOU) visited the Department of Horticulture on 12.07.2012. Ms. Fauzia was in-charge of class tour and class was of 20 students of professional gardener training course. Prof. Dr. Nadeem Akhtar Abbasi, Chairman, Department of Horticulture, welcomed and gave them a brief introduction of department. Mr. Abdul Ahad briefly introduced them with labs and visited the student's research area, vegetable, tunnels green houses and lath house. They also visited the nursery area of the department. They were very impressed with the practical implementation of their knowledge.

4. A delegation from a NGO “Doaba Foundation Muzaffargarh” comprising of 23 participants headed by Muhammad Nadir Malik campaign coordinator visited the university. Most of the people were progressive farmers of Horticulture Crops and Role Model of their own area. Purpose of the visit was to introduce the new techniques in this field and now to adopt them and disseminate to other farmers of the area. Prof. Dr. Nadeem Akhtar Abbasi welcomed them. Dr. Ishfaq Ahmed Hafiz and Mr. Abul Ahad briefed them about different ongoing activities and briefed them about problems faced during crop production in the field and during post harvest. Group also visited the research area and vegetable Tunnel, Green Houses and Lath House. They also showed their interest in post harvest handling of the horticulture crops and appreciated the work of post harvest lab.
5. Prof. Jong-In Han from Daegeon, South Korea visited the Department of Environmental Science, PMAS-AAUR on December 4, 2012.

SEMINARS, WORKSHOPS & CONFERENCES

Holding of Seminars, Workshops and Conferences are regular feature of the university where experts from various fields are invited to share their experiences with faculty, students & researchers on current issues of international and national importance. Such an activity is important for research and academic development of an institution as it provides guidelines for policy development at national level. During 2012, different departments of the University organized Eleven (11) International and National Workshops/Seminars/Conferences. The university faculty also participated and contributed research papers in twenty six (26) International and thirty seven (37) National Workshops/Seminars/Conferences. A brief detail of each is given below:

SEMINARS, WORKSHOPS & CONFERENCES HELD AT UNIVERSITY

- The Department of Anthropology organized a seminar on Human Rights Education at the seminar room of the University on February 21, 2012.
- The Department of Horticulture organized Spring Festival 2012 at PMAS-Arid Agriculture University Rawalpindi on March 16-18, 2012.
- National Science Conference: Roadmap to cutting edge technologies organized by PMAS-AAUR in collaboration with Pakistan Academy of Sciences on January 10-12, 2012.
- The Department of Biochemistry organized 3 Days International Bio-energy Conference at PMAS-AAUR on April 18-20, 2012.
- The Department of Botany organized one day Seminar on Application of Proteomics to Investigate Stress-induced Proteins at PMAS-AAUR on June 11, 2012.
- The Department of Entomology organized a seminar on eradication of dengue in collaboration with Govt. Degree College for Women at Seminar Room of PMAS-Arid Agriculture University Rawalpindi on September 01, 2012.
- The Department of Biochemistry organized 2nd HEC/UAAR Training Workshop on Real Time PCR at PMAS-AAUR on September 04-07, 2012.
- The Department of Economics & Agriculture Economics organized a seminar in collaboration Action Aid Pakistan on Women Right to Land and Sustainable Agriculture: Role of Agricultural Universities on October 22, 2012.

- The Department of Economics & Agriculture Economics organized a seminar in collaboration with Sungi Foundation, Islamabad on Role of Democracy in Pakistan during November, 2012.
- The Department of Horticulture organized Autumn/Chrysanthemum Festival 2012 at PMAS-Arid Agriculture University Rawalpindi on November 21-23, 2012
- The Department of Economics & Agriculture Economics organized two day Conference on Food Security and Poverty Reduction in collaboration with Ministry of Food Security & Research and Brazilian Embassy, Islamabad on December, 2012.
- The Department of Environmental Sciences organized International Seminar on Current Progress Towards Developing the Efficient Process of Microalgal Biofuels at PMAS-AAUR on December 04, 2012.
- The Directorate of Quality Enhancement Cell conducted workshop on “Self Assessment in Universities” at PMAS-AAUR on December 21, 2012

SEMINARS, WORKSHOPS & CONFERENCES ATTENDED BY THE FACULTY

NATIONAL:

1. Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended 1st International Conference on Safe Food and Human Health at GC University Faisalabad on January 10-11, 2012.
2. Faculty from various departments of the university attended National Science conference: Roadmap to cutting edge technologies at PMAS-AAUR on January 10-12, 2012.
3. Prof. Dr. Mazhar Qayyum, Chairman, Department of Zoology and Dr. M. Sheeraz Ahmed, Assistant Professor, Department of Biochemistry attended National Conference on Trends in Biochemistry and Molecular Biology at Quaid-i-Azam University, Islamabad on February 21, 2012.
4. Faculty members from Department of Zoology and Wildlife Management 32nd Pakistan Congress of Zoology at Government College University, Lahore on March 06-08, 2012.
5. Dr. Azeem Khalid, Associate Professor, Department of Environmental Sciences, Dr. Qaiser Hussain and Dr. Muhammad Akmal, Assistant Professor, Department of Soil Science & SWC attended 14th Congress of Soil Science. Lahore on March 12-15, 2012.
6. Dr. Rabia Imran, Assistant Professor and Ms. Afsheen Fatima, Lecturer, University Institute of Management Sciences attended Human Resource

Symposium on Exploring HR Practices in Oil & Gas Industry, Islamabad at Quaid-i-Azam University, Islamabad on March 22, 2012.

7. Dr. Muhammad Sajid Nadeem, Assistant Professor, Department of Zoology attended International training workshop on Species Distribution Modeling Techniques at University of Agriculture, Faisalabad on April 10-14, 2012.
8. Prof. Dr. S. M. Saqlan Naqvi, Dean, Faculty of Sciences deliver a lecture on “Nanotechnology Applications in Biosciences” in “Nano technology-Its application in Animal Production and Health at University of Veterinary & Animal Sciences Lahore on April 16-17, 2012.
9. Dr. Muhammad Javed Asad, Associate Professor, Dr. M. Sheeraz Ahmed, Assistant Professor, Department of Biochemistry and Dr. Asif Ahmad, Associate Professor, Department of Food Technology attended 3-Days International Bioenergy Conference at PMAS-AAUR on April 18-20, 2012.
10. Dr. Rabia Imran, Assistant Professor and Ms. Afsheen Fatima, Lecturer, University Institute of Management Sciences attended International Conference on Industrial and Organizational Psychology: Trends, Challenges and Applications at Quaid-i-Azam University Islamabad on April 19, 2012.
11. Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended workshop on applied Nature Need Based Research Projects of Food Industries at University of Agriculture Faisalabad on May 07, 2012.
12. Dr. Asif Ahmad, Associate Professor, Department of Food Technology attended Training Workshop on IFS-6 at Lahore on May 21-24, 2012.
13. Prof. Dr. S. M. Saqlan Naqvi, Dean, Faculty of Sciences attended 3rd workshop on Bioinformatics as a Keynote speaker at Muhammad Ali Jinnah University, Islamabad on June 18, 2012.
14. Dr. Maqsood Anwar, Associate Professor, Department of Wildlife Management attended workshop on Multilateral environmental agreements (MEAs) and introduction to GIS & remote sensing at WWF-Pakistan on June 19-21, 2012
15. Dr. Rabia Imran, Assistant Professor and Ms. Afsheen Fatima, Lecturer, University Institute of Management Sciences attended 2nd International Conference on Contemporary Issues in Business Management (ICIBM-2012) at University of Central Punjab, Lahore on July 4-6, 2012.
16. Prof. Dr. Nadeem Akhtar Abbasi, Chairman and Dr. Ishfaq Ahmad Hafiz, Associate Professor, Department of Horticulture and Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended National Science Conference, Agriculture and Food Security Issues in Global Environmental Perspectives at the University of Poonch, Rawalakot on July 11-12, 2012.
17. Dr. Muhammad Javed Asad, Associate Professor, Department of Biochemistry attended One-day Research workshop on Citation & Referencing in Research using End Note X5 at PMAS-AAUR on August 25, 2012.
18. Faculty from various departments of the university attended 12th National and 3rd International conference of botany (ICB-2012) at Quaid-i-Azam University, Islamabad on September 01-03, 2012.
19. Hafiz Muhammad Waheed, Lecturer, Faculty of Veterinary & Animal Sciences attended International Workshop on Domestic Animal Genetic Resources

- Information System (DAGRIS) at University of Agriculture, Faisalabad on September 09, 2012.
20. Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended Integrated Food Security Phase Classification (IPC) Training & Analysis Workshop at PC Bhurban on September 17-27, 2012.
 21. Prof. Dr. Abdul Saboor, Chairman, Department of Economics & Agri. Economics attended PIDE Annual Conference, 2012 at Marriot Hotel, Islamabad on October, 2012.
 22. Dr. Muhammad Javed Asad, Associate Professor, Department of Biochemistry attended 11th International and 23rd National Chemistry Conference at National Centre of Excellence in Physical Chemistry, University of Peshawar on October 15-17, 2012.
 23. Dr. Muhammad Farooq Iqbal, Dr. Sajid Umar, Assistant Professor and Zaib-Ur-Rehman, Lecturer, Faculty of Veterinary & Animal Sciences attended All Pakistan Animal Science Conference at Gomal University, D.I Khan on November 12-13, 2012.
 24. Dr. Muhammad Fiaz, Assistant Professor, Faculty of Veterinary & Animal Sciences attended Seminar on Enhancing Export Potential of Livestock and Dairy Sectors at Pearl Continental Hotel Lahore on November 29, 2012.
 25. Prof. Dr. Arshad Iqbal, Dean, Faculty of Veterinary & Animal Sciences, Prof. Dr. Tariq Masud, Chairman and Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended Pak-Brazil Seminar on Food Security and Poverty Alleviation at Marriot Hotel, Islamabad on December 03, 2012.
 26. Prof. Dr. Mazhar Qayyum, Chairman, Department of Zoology attended 1st Joint Conference of Association/Societies of Pathologists at Armed Forces Institute of Pathology, Rawalpindi on December 7-9, 2012.
 27. Dr. Asif Ahmad, Associate Professor and Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended 23rd All Pakistan Food Science Conference at PCSIR Labs, Lahore on December 10, 2012
 28. Dr. Asif Ahmad, Associate Professor and Dr. Anwaar Ahmed, Assistant Professor, Department of Food Technology attended 2nd International Conference on “Future Perspectives of Food Processing Industry in Pakistan” at GC University Faisalabad on December 11-12, 2012.
 29. Dr. Rauf-i-Azam, Director and Ahmed Imran Hunjra, Lecturer, University Institute of Management Sciences attended International Conference on Contemporary Trends in Business & Management (ICBM-2012) at National University of Modern Languages (NUML) on December 12-13, 2012
 30. Prof. Dr. Fayyaz-ul-Hassan, Chairman, Dr. Zammurad Iqbal Ahmed, Associate Professor, Department of Agronomy and Prof. Dr. Muhammad Naeem, Chairman, Department of Entomology attended three days workshop for programme evaluators of NAEAC at Dream Land Motel, Islamabad on December 11-13, 2012.
 31. Dr. Tanveer Ahmad, Associate Professor, Faculty of Veterinary & Animal Sciences attended National conference on Avian Nutrition at University of Agriculture Faisalabad on December 21, 2012.

32. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell presented two research papers in “National Science Conference” organized by “Pakistan Academy of Sciences” held at PMAS-AAUR on 10-12 January 2012.
33. Mr. Shahbaz Ahmad Khan, Deputy Registrar QEC attended the 5-day workshop on Capacity Building for ORIC Personnel at Universities” held at National University of Sciences & Technology Islamabad from January 23-27, 2012.
34. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell presented two research papers and also chaired the session on Soil & Water Pollution in the 14th Congress of Soil Science organized by the Soil Science Society of Pakistan held at Expo, Centre, Lahore on 12-15 March 2012.
35. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell attended the workshop on “Building Quality in Higher Education focusing on developing programme specifications” held at University of Management & Technology, Lahore on 28-29 March 2012.
36. Mr. Shahbaz Ahmad Khan, Deputy Registrar QEC attended a seminar on World Quality Day Celebration at “Institute of Space Technology, Islamabad on 21-December-2012.
37. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell participated in the seminar on “Extraction information form Evaluation Performae” held at “Quaid-e-Azam University Islamabad” on 26-December-2012.

INTERNATIONAL:

1. Prof. Dr. Sarwat N. Mirza, Dean, Faculty of Forestry, Range Management & Wildlife attended Regional Conference on Second Near East Forestry Week at Antalya, Turkey from January 29 to February 02, 2012.
2. Dr. Khalid Mahmood Qureshi, Associate Professor, Department of Horticulture attended International Strawberry Symposium ISHS at Beijing, China on February 18-22, 2012.
3. Prof. Dr. Mazhar Qayyum, Chairman, Department of Zoology attended 15th International & 14th European Congress of Endocrinology (ICE-ECE2012) at Fortessa DA BASSO, Florence, Italy on May 5-9, 2012.
4. Dr. Azeem Khalid, Associate Professor, Department of Environmental Sciences attended Eco Health Conference 2012 at Kunming City, China on May 15-18, 2012.
5. Dr. Audil Rashid, Assistant Professor, Department of Environmental Sciences attended International Conference on Climate Adaptation at Tucson, Arizona, USA on May 29-31, 2012
6. Dr. Rabia Imran, Assistant Professor and Ms. Afsheen Fatima, Lecturer, University Institute of Management Sciences attended 1st International Symposium on Business, Economics and Financial Applications (ISBEFA) at Kefalonia, Greece on June 1-2, 2012.
7. Dr. Feroza Hamid Watto, Assistant Professor, Department of Biochemistry attended Summer Lecture Series with the title as “Prenatal Origins of Diseases” at Iowa State University of Science and Technology IA 50011 USA on June 4-8, 2012.

8. Prof. Dr. Abdul Saboor, Chairman, Department of Economics & Agri. Economics attended Research and Training Workshop, South Asian Network of Development and Environmental Economics (SANDEE) at Colombo, Sri Lanka on June 18-21, 2012.
9. Prof. Dr. Fayyaz-ul-Hassan, Chairman and Dr. Mukhtar Ahmed, Assistant Professor, Department of Agronomy attended International symposium on managing soils for food security and climate change adaptation and mitigation at Vienna, Austria on July 23-27, 2012
10. Mrs. Pakeeza A. Shaiq, Lecturer, Department of Biochemistry attended Conference on the Molecules of Life at Uppsala University, Sweden on September 5-6, 2012.
11. Ms. Beenish Saba, Lecturer, Department of Environmental Sciences attended 5th International Conference on the Challenges in Environmental Sciences and Engineering at LJS Environment, Melbourne, Australia on September 09-13, 2012.
12. Dr. Mukhtar Ahmed, Assistant Professor, Department of Agronomy attended International conference on climate, water and policy (ICCWP) at APCC climate centre, Busan S. Korea on September 11-13, 2012.
13. Dr. Ghazala Kaukab Raja, Associate Professor, Department of Biochemistry attended 2nd International Conference on Hyperphagia at Pennington Biomedical Research Center, Baton Rouge, LA, USA on October 17-20, 2012.
14. Mrs. Pakeeza A. Shaiq, Lecturer, Department of Biochemistry attended Next Generation Sequencing: Biomedical and Clinical Implication at Rudbecksalen, Rudbeck Laboratory, Uppsala University Sweden on October 25, 2012.
15. Dr. Audil Rasheed, Assistant Professor, Department of Environmental Sciences attended ISES 2012 Conference at Seattle USA on October 28 to November 01, 2012
16. Dr. Rabia Imran, Assistant Professor and Ms. Afsheen Fatima, Lecturer, University Institute of Management Sciences participated in 6th International Conference on Management Science and Engineering Management (ICMSEM-2012) organized by International Society of Management Science and Engineering Management and School of Business and Administration Sichuan University, Chengdu, China at Islamabad, Pakistan on November 11-14, 2012.
17. Dr. Rabia Imran, Assistant Professor, Ms. Afsheen Fatima, Lecturer, University Institute of Management Sciences participated in 3rd Journal Conference on Innovation, Management and Technology (JCIMT, 2012) organized by International Economics Development and Research Center (IEDRC) at Bangkok, Thailand on November 24-25, 2012.
18. Dr. Audil Rasheed, Assistant Professor, Department of Environmental Sciences attended IPRA Global Peace Conference at Tsu City, Mie University Japan on November 24-28, 2012.
19. Prof. Dr. Abdul Saboor, Chairman, Department of Economics & Agri. Economics attended Scenario Development Workshop, CGIAR Research Program on climate change, Agriculture and Food Security at Colombo, Sri Lanka on November 29 to December 01, 2012.

20. Mrs. Pakeeza A. Shaiq, Lecturer, Department of Biochemistry attended Rudbeck Seminar on “Accurate Whole Genome Sequencing from 10 Human Cells as the Ultimate Genetic Test” An Ultra Sharp Portrait of the Dutch Population with Application to Disease Genetics at Rudbeck Laboratories, Uppsala University, Sweden on December 6, 2012.
21. Mrs. Pakeeza A. Shaiq, Lecturer, Department of Biochemistry attended Noble Week Dialogue “The Genetic Revolution and its Impact on Society” at Stockholm City Conference Center, Sweden on December 09, 2012.
22. Prof. Dr. Abdul Saboor, Chairman, Department of Economics & Agri. Economics attended Research and Training Workshop, South Asian Network of Development and Environment Economics (SANDEE) at Kathmandu, Nepal on December 11-15, 2012.
23. Mrs. Pakeeza A. Shaiq, Lecturer, Department of Biochemistry attended conference on Induction of Pluripotency by Defined Factors, the Egg and the Nucleus: a Battle for Supremacy at Stockholm City Conference Center, Sweden on December 13, 2012.
24. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell attended 2-day hands on workshop on Pyrolysis GC/MS organized by Shimadzu, Japan.
25. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell attended one-day Supervisors Workshop at Massey University, New Zealand.
26. Prof. Dr. Riaz Ahmad, Director, Quality Enhancement Cell attended a seminar on quality of higher education presented by Professor Neil Ward, Chair of Professional Training and Careers, University of Surrey, UK as organized by the National Centre for Teaching and Learning, Massey University, New Zealand.

STUDENTS EXTRA CURRICULAR ACTIVITIES

Following co-curricular activities were organized by the Directorate of Students Affairs during the year 2012.

1. Students Talent Show 05.01.2012
2. Lecture of Islamabad Traffic Police 09.01.2012
3. Regional Dress Show 19.01.2012
4. Naat Competition 02.02.2012
5. **Students Week 2012** **March 27-31, 2012**
 - Fresh & Dry Flower Arrangement
 - Punjabi Taakra
 - Games (Girls)
 - Software Competition
 - Poster Competition
 - Video Game Competition
 - Documentary competition
 - Games (Boys)
 - Singing Competition
 - Drama Competition
 - Qiraat & Naat Competition
 - Solo Performance Competition
 - Bilingual Declamation
 - Arfana Kalam Competition
6. Seminar on World Blood Donor Day 2012 12.06.2012
7. Inter faculty Debate Competition 21.06.2012
8. Cultural Show on Alumni Day 07.07.2012
9. Ne admission Orientation 2012 18.10.2012
10. Debate Competition for Allama Iqbal Shield 1st Round 05.11.2012
11. Autumn Flower Show (Poster, Photography Competition) 23.11.2012
12. Naat & Qiraat Competition 27.12.2012

SPORTS ACTIVITIES

The Directorate of Sports is working hard for the promotion of sports and healthy activities at PMAS-Arid Agriculture University. The beautiful and prestigious **Khalid M. Khan Gymnasium** was completed in the university premises in 2010. The PMAS-AAUR students teams participated in the following Intervarsity Championship during 2012:

- ALL PAKISTAN INTER UNIVERSITY TUG OF WAR CHAMPIONSHIP 2012-13 HELD AT GOVERNMENT COLLEGE UNIVERSITY, FAISALABAD ON NOVEMBER 18-21, 2012.
- INTER UNIVERSITY FOOT BALL CHAMPIONSHIP (ZONE “C”) HELD AT QUAID-I-AZAM UNIVERSITY, ISLAMABAD ON DECEMBER 10-12, 2012.
- INTER UNIVERSITY BADMINTON BOYS CHAMPIONSHIP (ZONE “C”) HELD AT AJK UNIVERSITY, MUZAFFARABAD ON FEBRUARY 09-12, 2012.
- INTER UNIVERSITY TABLE TENNIS BOYS CHAMPIONSHIP (ZONE “C”) HELD AT INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD ON FEBRUARY 15-18, 2012.

The following Inter Faculty sports Championships were organized by Directorate of Sports PMAS-AAUR during 2011-12.

- INTER FACULTY BADMINTON (BOYS) CHAMPIONSHIP ON JANUARY 24-26, 2012
- INTER FACULTY BADMINTON (GIRLS) CHAMPIONSHIP ON JANUARY 24-26, 2012.
- INTER FACULTY VOLLEYBALL (BOYS) CHAMPIONSHIP ON APRIL 03-05, 2012.
- INTER FACULTY CRICKET (BOYS) CHAMPIONSHIP ON APRIL 19-21, 2012
- INTER FACULTY BASKETBALL (BOYS) CHAMPIONSHIP ON NOVEMBER 14-16, 2012

The following Inter Faculty Sports/Games Championship (Boys) was organized during Students Week (March-April 2012) at University Convocation Lawn.

- INTER FACULTY HIKING CHAMPIONSHIP
- INTER FACULTY TUG OF WAR CHAMPIONSHIP
- INTER FAULTY THREE LEG RACE
- INTER FACULTY HANDKERCHIEF GAME CHAMPIONSHIP
- INTER FACULTY MUSICAL CHAIR CHAMPIONSHIP

The following Inter Faculty Sports/Games Events (Girls) were organized during Students Week (March-April 2012) at Girls Hostel.

- INTER FACULTY HIKING CHAMPIONSHIP
- INTER FACULTY TUG OF WAR CHAMPIONSHIP
- INTER FACULTY THREE LEG RACE
- INTER FACULTY HANDKERCHIEF GAME CHAMPIONSHIP
- INTER FACULTY MUSICAL CHAIR CHAMPIONSHIP

UNIVERSITY PUBLICATIONS

JOURNAL OF AGRICULTURE AND BIOLOGICAL SCIENCES

In order to infuse a culture of publications among the faculty and research students the charges for publication in the journal were revised. Any student who intends to publish will be charged at subsidized rate, while faculty members can publish one paper free of cost per journal as first author of the journal. The journal is circulated to about 80 different organizations in the country and 10 international organizations without price.

PMAS-AAUR-NEWS

In order to have a close contact with community and activities at university, “PMAS-AAUR NEWS” is published on monthly basis. This is widely circulated among students, faculty and to all sister organizations.

NAVEED-E-BARAN

This magazine is an annual publication which carries creative contribution from students and is managed by an Editorial Board mainly comprised of students.

STUDENT DISSERTATIONS

Three Hundred and Forty (340) theses were delivered during 2012 by post-graduate students of the university and fourteen (14) theses were received on account of PhD degrees.

FACUTLY PUBLICATIONS

INTERNATIONAL PUBLICATIONS

1. **Abbasi, K. S., T. Masud, M. Gulfraz, S. Ali and M. Imran. 2012.** Physico-chemical, functional and processing attributes of some potato varieties grown in Pakistan. *African Journal of Biotechnology*. 10(84): 19570-19579. IF. 0.57
2. **Abbasi, N.A., A. Rehman and A. Hussain. 2012.** Foliar spray of ethanol affected fruit growth, yield and postharvest performance of 'Sahil' tomato. *Acta Horticulture*. (ISHS) 945:363-368.
3. **Abdullah, M., A. Sandhu, F. Q. Mirza, F. Afzal, and N. Mukhtar. 2012.** Effect of heat stress on cellular and humoral immunity and its cure with α -tocopherol in meat type birds. *Livestock Science*. 148: 181-188. IF. 1.295
4. **Afsheen, F., M. Atif, S. A. Qureshi and H. Ali. 2012.** A path model examining the relations among organizational injustice, counterproductive work behavior and job satisfaction. *International Journal of Innovation, Management and Technology*. 3(6): 697-701.
5. **Afzal, I., A. Butt, H. U. Rehman, S. M. A. Basra and A. Afzal. 2012.** Alleviation of salt stress in fine aromatic rice by seed priming. *Australian Journal of Crop Science*. 6(10): 1401-1407. IF. 1.6
6. **Ahmad, R., A. Rahman, H. Stefan. 2012.** Fingerprints of organic matter in New Zealand soils. Joint Australian and New Zealand Soil Science Conference held at Hobart, Australia, 2-7 December 2012.
7. **Ahmad, Z., M. S. Butt, A. Ahmed, M. Riaz, S. M. Sabir, U. Farooq and F. U. Rehman. 2012.** Effect of *Aspergillus niger* xylanase on dough characteristics and bread quality attributes. *Journal of Food Science & Technology*. DOI: 10.1007/s13197-012-0734-8. IF. 0.50
8. **Ahmad, Z., M. S. Butt, F. M. Anjum, M. S. Awan, H. A. Rathore, M. T. Nadeem, A. Ahmed and A. Khaliq. 2012.** Effect of corn cobs concentration on xylanase biosynthesis by *Aspergillus niger*. *African Journal of Biotechnology*. 11(7): 1674-1682. IF. 0.57
9. **Ahmed, A., F. M. Anjum, M. A. Randhawa, U. Farooq, S. Akhtar and M. T. Sultan. 2012.** Effect of multiple fortification on the bioavailability of minerals in wheat meal bread. *Journal of Food Science and Technology*. 49(6): 737-744. IF. 0.50
10. **Ahmed, H., M. R. Khan, R. Pandero-Fontan, C. L. Sandez, M. F. Iqbal, S. M. S. Naqvi and M. Qayyum. 2012.** Geographical distribution of hypodermosis (*Hypoderma* sp.) in Northern Punjab, Pakistan. *Kafkas. Univ. Vet. Fak. Derg.* 18(Suppl-A):A215-A219. IF. 0.495
11. **Ahmed, M., 2012.** Improving soil fertility recommendations in Africa using the decision support system for agro technology transfer (DSSAT) (Book Review). *Experimental Agriculture*. 48(4)
12. **Ahmed, M., F.U. Hassan and M. Asif. 2012.** Physiological response of bread wheat (*Triticum aestivum* L.) to high temperature and moisture stresses. *Australian Journal of Crop Sciences*. 6(4): 749-755. IF. 1.65

13. **Akhtar, M. N., A. I. Hunjra, A. Andleeb and B. Z. Butt. 2012.** Individual investor perception toward dividend: Pakistan's perspective. *Actual Problems of Economics*. 4(2): 193-199. IF. 0.039.
14. **Akhtar, M. N., A. I. Hunjra, N. Safwan and A. Ahmad. 2012.** Long run relationship between poverty and macro-economic variables in Pakistan. *Actual Problems of Economics*. 4(2): 186-192. IF. 0.039
15. **Akhter, K., Q. Parveen, S. Kiran, M. Rashid and A. K. Satti. 2012.** A study of students attitudes towards cooperative learning. *International Journal of Humanities and Social Sciences*. 2(11): 141-145
16. **Akhter, S., M. S. Ansari, S. M. H. Andrabi, B. A. Rakha, N. Ullah, M. Khalid. 2012.** Soya-lecithin in extender improves the freezability and fertility of buffalo (*Bubalus bubalis*) bull spermatozoa. *Reproduction in Domestic Animals*. 47(5): 815-819. IF. 1.356
17. **Altaf, S., M. Aslam and M. Aslam. 2012.** Bayesian analysis of the van vaaren model for paired comparison. *Hacettepe Journal of Mathematics and Statistics* (Accepted)
18. **Altaf, S., M. Aslam and M. Aslam. 2012.** Bayesian analysis of the amended Davidson model for paired comparison using noninformative priors. *Statistics* (Accepted)
and the microbial biomass in soils under different land use management.
19. **Anjam, M., A. Razzaq, M. U. Jamil and M. A. Khan. 2012.** Industry-school interface: following professional education model to impart pragmatic business edification. *European Journal of Business and Management*. 4(8): 262-269
20. **Anjum, M., A. Khalid, T. Mahmood and M. Arshad. 2012.** Co-digestion of municipal solid organic waste with melon residues to enhance biodegradability and biogas production. *Journal of Material Cycles and Waste Management*. DOI 10.1007/s10163-012-0082-9.
21. **Ansari, M. S., B. A. Rakha, S. M. H. Andrabi, N. Ullah, R. Iqbal, W. V. Holt and S. Akhter. 2012.** Glutathione-supplemented *tris*-citric acid extender improves the post-thaw quality and *in vivo* fertility of buffalo (*Bubalus bubalis*) bull spermatozoa. *Reproductive Biology*. 12: 271-276. IF. 1.921
22. **Anwar, H. K., A. H. Sayyed, M. Naeem and M. Ali. 2012.** Field evolved resistance in *helicoverpa armigera* (Lepidoptera: Noctuidae) to *bacillus thuringiensis* toxin cry 1 AC in Pakistan. *Plos One*. 7(10): 1-9. IF. 4.092
23. **Anwar, Z., M. Gulfraz, M. J. Asad, M. Imran, Z. Akram, S. Mehmood, A. Rehman, P. Anwar and A. Sadiq. 2012.** Bioethanol productions from rice polish by optimization of dilute acid pretreatment and enzymatic hydrolysis. *African Journal of Biotechnology*. 11(4): 992-998. IF. 0.57
24. **Aqueel, M. A., C. M. Collins. A. B. M. Raza, M. Shehbaz, M. Tariq and S. R. Leather. 2012.** Effect of plant nutrition on aphid size, prey consumption and life history characteristics of green lacewing. *Insect Science*. IF. 1.103. In press
25. **Arif, M., S. Mustafa and K. Khan. 2012.** A subclass of analytic functions related with Janowski functions. *Life Science Journal*. 9(4):3756-3762. IF. 0.158
26. **Arif, S., A. Ahmad, T. Masud, N. Khalid, I. Hayat, F. Siddique and M. Ali. 2012.** Effect of flour processing on the quality characteristics of a soy-based

- beverage. *International Journal of Food Science and Nutrition*. 63(8): 940-946 IF. 0.77.
27. **Asgher, M., H. M. N. Iqbal and M. J. Asad. 2012.** Kinetic characterization of purified laccase produced from *Trametes versicolor* IBL-04 in solid state bio-processing of corncobs. *Bio Resources*. 7(1): 1171-1188. IF. 1.418
 28. **Aslam, M., T. Riaz and S. Altaf. 2012.** Efficient estimation and robust inference of linear regression models in the presence of heteroscedastic errors and high leverage points. *Communications in Statistics – Simulation and Computation* (Accepted)
 29. **Ata, S., F. H. Wattoo, L. R. Sidra, M. H. S. Wattoo, S. A. Tirmizi, I. Din and I. U. Mohsin. 2012.** Biosorptive removal of lead and cadmium ions from aqueous solution: The use of carrot residues as low cost non-conventional adsorbent. *Turkish Journal of Biochemistry*. 37(3): 272-279. IF. 0.26
 30. **Athar, M. R. 2012.** Comparative impact of different domains of self-conception on consumers brand selection decision. *Actual Problems of Economics*. 2(4): 126-131. IF. 0.039
 31. **Athar, M. R. 2012.** Competitive advantage: the role organizational intangibles. *Actual Problems of Economics*. 2(4): 281-286. IF. 0.039
 32. **Athar, M. R. 2012.** Crucial HR practices for employee retention in economic instability. *Actual Problems of Economics*. 2(4): 64-69. IF. 0.039
 33. **Athar, M. R. 2012.** Determinants of interest rate: spread: an empirical explanation. *Actual Problems of Economics*. 2(4): 46-52. IF. 0.039
 34. **Athar, M. R. 2012.** Effects of organizational ethics on turnover intentions. *Actual Problems of Economics*. 2(4): 58-63. IF. 0.039
 35. **Athar, M. R. 2012.** Impact of Technology on interest rate: evidence from the banking sector of Pakistan. *Actual Problems of Economics*. (2(4): 53-57. IF. 0.039
 36. **Athar, M. R. 2012.** Individual company related economic and investment behavior. *Actual Problems of Economics*. 2(4): 40-45. IF. 0.039
 37. **Athar, M. R. 2012.** Industry-school interface: following professional education model to impart pragmatic business edification. *European Journal of Business and Management*. 4(8): 262-269
 38. **Athar, M. R. 2012.** Organizational commitment and turnover intentions between public and private sectors in Pakistan. *Actual Problems of Economics*. 2(4): 336-342. IF. 0.039
 39. **Attiq, Saman and R. I. Azam. 2012.** How individual social values stimulate consumer purchase decision involvement and compulsive buying behavior: a path-by-path multigroups analysis. *Actual Problems of Economics*. 7(133): 300-308.
 40. **Baig, K. S., M. Arshad, B. Shaharoon, A. Khalid and I. Ahmed. 2012.** Comparative effectiveness of *Bacillus* spp. possessing either dual or single growth-promoting traits for improving phosphorus uptake, growth and yield of wheat (*Triticum aestivum* L.). *Annals of Microbiology*. 62: 1109-1119

41. **Baig, M. M. Q., I. A. Hafiz, N. A. Abbasi, M. Yaseen, Z. Akram, and D. J. Donnelly, 2012.** Reduced-stature Rosa species through *in-vitro* mutagenesis. Canadian Journal of Plant Science, 10.4141/cjps2011-199. IF 0.547.
42. **Baig, S. M., D. Sabih, K. Rahim, A. Azhar, M. Tariq, M. S. Hussain, S. M. S. Naqvi, G. K. Raja, S. Amir, Z. Iram, S. Noor, U. R. Baig, J. A. Qureshi, S. A. Baig and S. M. Bakhtiar. 2012.** β -Thalassaemia in Pakistan: a progress report on prenatal diagnosis in Multan. Journal of Pediatric Hematology/Oncology. 34(2):90-92. IF. 1.159
43. **Batool, S., M. I. Yousuf and Q. Parveen. 2012.** A study of attribution patterns among high and low attribution groups: An application of Weiner's attribution theory. Anthropologist. 14(3): 193-197
44. **Bibi, Y., S. Nisa, A. Waheed, M. Zia, S. Ahmed and M. F. Chaudhary. 2012.** The study of anticancer and antifungal activities of *Pistacia integerrima* extract in vitro. Indian Journal of Pharmaceutical Sciences. IF. 0.626. Accepted.
45. **Bushra, S., M. Aslam, M. A. Aziz and M. Ahmed. 2012.** Grain damage, viability and weight loss in different barley cultivars due to *Sitotroga cerealella* (Oliv.) infestation. Archives of Phytopathology and Plant Protection. DOI: 10.1080/03235408.2012.736282
46. **Chishti, Z., S. Hussain, K. R. Arshad, A. Khalid and M. Arshad. 2012.** Microbial degradation of chlorpyrifos in liquid media and soil. Journal of Environmental Management. Doi: <http://dx.doi.org/10.1016/j.jenvman.2012.10.032>
47. **Farzana, S., K. S. Khan, A. Ahmad, A. Ahmed, M. Gulfraz and F. H. Wattoo. 2012.** Development and optimization of sweet cream butter from buffaloes at cottage scale. African Journal of Biotechnology. 10(75): 172665-17274. IF. 0.57
Geoderma.173-174: 274-281. IF. 2.176
48. **Ghafoor, A., A. Kiani, S. Kayani and S. Kayani. 2012.** An exploratory study of microteaching as an effective technology. International Journal of Business and Social Science. 3(4): 224-238
49. **Goyal, A and M. Ahmed. 2012.** Barley: Production, improvement and uses (Book Review). Crop Science. 52(6): 2852-2853. IF. 1.64
50. **Gul, S., T. Masud, S. Maqsood, A. Latif, I. Irshad and I. Haque. 2012.** Streptococcus thermophilus bacteriocin, from production to their application: An overview. African Journal of Microbiology Research. 6(1):9. IF. 0.533
51. **Gulfraz, M., A. Ahmad, M. J. Asad, A. Sadiq, U. Afzal, M. Imran, P. Anwar, A. Zeenat, K. S. Abbasi, S. Maqsood and R. U. Qureshi. 2012.** Antidiabetic activities of leaves and root extracts of *Justicia adhatoda* Linn against alloxan induced diabetes in rats. African Journal of Biotechnology. 10(30): 6101-6106. IF. 0.57
52. **Gulzar, A., A. H. Sayyed, J. Karimzadeh and D. J. Wright. 2012.** Lack of cross resistance to non-Bt insecticides in a mode-1, Cry1Ac-resistant population of *Plutella xylostella* (Lepidoptera: Plutellidae). Applied. Ent. Phytopath. 79(2): 29-35.
53. **Gulzar, A., B. Pickett, A. H. Sayyed and D. J. Wright. 2012.** Effect of temperature on the fitness of a Vip3A resistant population of *Heliothis virescens*

- (Lepidoptera: Noctuidae). Journal of Econ. Entomology. 105(3): 964-970. IF. 1.70
54. **Hanif, M. 2012.** Local linear estimation of recurrent jump-diffusion models. Communication in Statistics-Theory and Methods. 41:4142-4163. IF. 0.274
 55. **Hanif, M. 2012.** Nonparametric estimation of second order diffusion equation by using asymmetric kernels. Communication in Statistics- Theory and Methods. (Accepted).
 56. **Hanif, M. 2012.** Reweighted nadaraya-watson estimation of jump-diffusion models. Science China Mathematics. 55: 1005-1016. IF. 0.332
 57. **Hanif, M., A. Hussain, N. Jamal and A. Amir. 2012.** New approximation of average run length cumulative sum control chart. Far East Journal of Marketing and Management. Accepted.
 58. **Hanif, M., A. Hussain, N. Jamal and M. Amir. 2012.** Variance estimation on nonlinear estimator by using linearization within groups for grouping. Far East Research Centre. (Accepted)
 59. **Hanif, N. Q., G. Muhammad, K. Muhammad, I. Tahira and G. K. Raja. 2012.** Reduction of ochratoxin A in broiler serum and tissues by Trichosporon mycotoxinivorans. Research in Veterinary Sciences. 93(2): 795-797. IF. 1.649
 60. **Haq, I. U., N. Ullah, G. Bibi, S. Kanwal, M. S. Ahmad and B. Mirza. 2012.** Antioxidant and anticancer activities and phytochemical analysis of Euphorbia wallichii root extract and its fractions. Iranian Journal of Pharmaceutical Research. 11(1): 241-249. IF. 0.637
 61. **Hassan, M. U., M. Abubakar, G. Muhammad, M. N. Khan and M. Hussain. 2012.** Prevalence of tick infestation (*Rhipicephalus sanguineus* and *Hyalomma anatolicum anatolicum*) in dogs in Punjab, Pakistan. Veterinaria Italiana. 48(1):95-98. IF. 0.67
 62. **Hassan, M. U., M. Javid, M. S. Nadeem and S. Ashraf. 2012.** An extralimital record of the Egyptian tomb bat Taphozous perforatus from Pakistan. Mammalia. 76(2): 227-229. IF. 0.808
 63. **Hayat, R., M. I. U. Hassan, S. Akram, R.A. Sheirdil and M. Ahmed. 2012.** Evaluation of compost application for improving legumes yield and N₂-fixation. African Journal of Biotechnology. 11(41): 9758-9764. IF. 0.57
 64. **Hayat, R., R. A. Sheirdil, M. I. U. Hassan and I. Ahmed. 2012.** characterization and identification of compost bacteria based on 16S rRNA gene sequencing. Annals of Microbiology. DOI: 10.1007/s13213-012-0542-4 (Published Online)
 65. **Hayat, T. W. Xia, Y. He, H. Wang, J. Wu and J. Xu. 2012.** Humic substances as a reductant for hydrophobic organic compounds. . In Jianming Xu, Jianjun Wu and Yan He (Editors), Fractions of Natural Organic Matter in Changing Environment. Zhejiang University Press and Springer-Verlag GmbH Pp358-360
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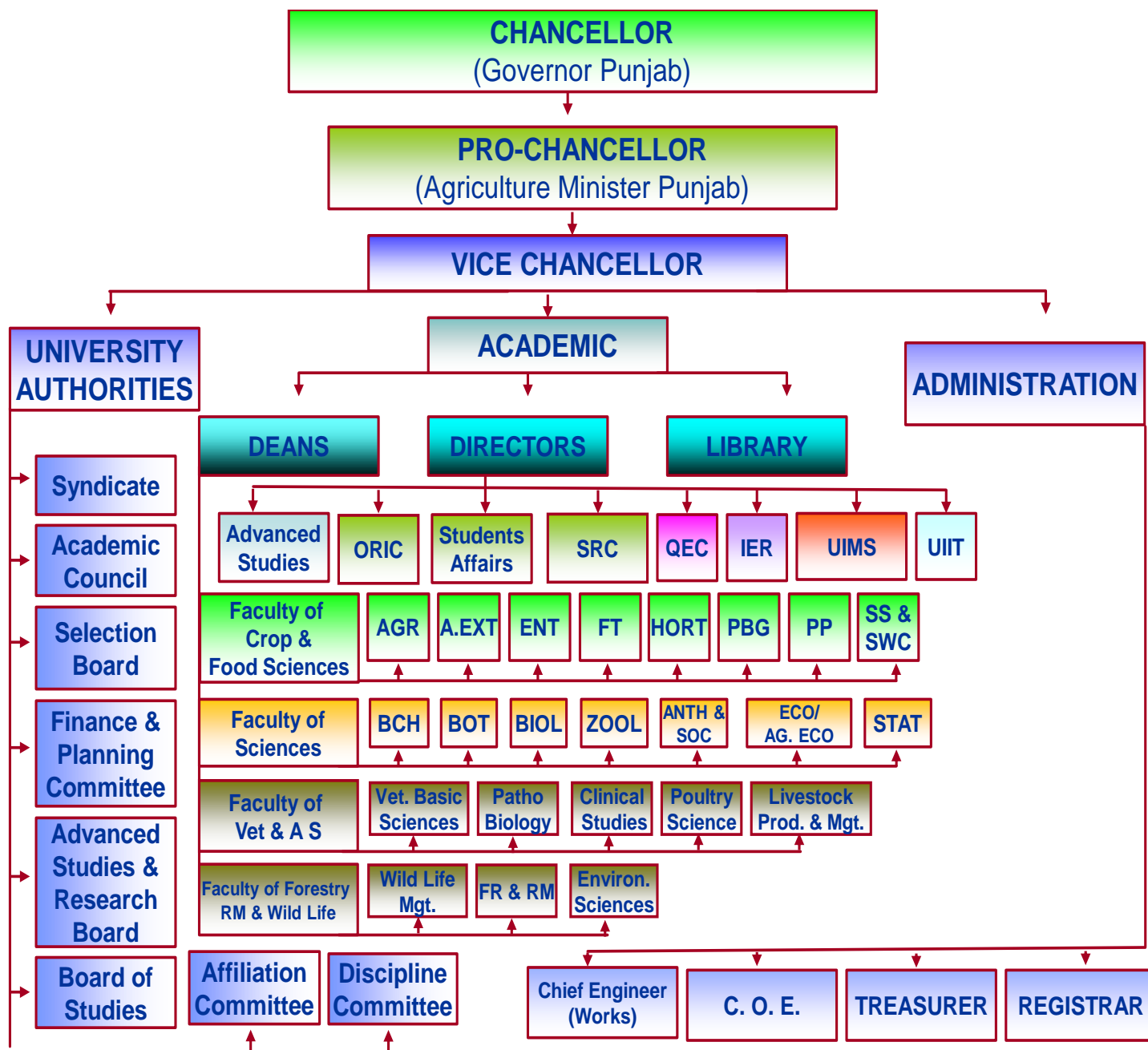
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PMAAS-AAUR ORGANOGRAM



Abbreviations:	
ORIC:	Office of Research, Innovation & Commercialization
SRC:	Student Resource Centre
QEC:	Quality Enhancement Cell
IER:	Institute of Education & Research
UIMS:	University Institute of Management Science
UIIT:	University Institute of Information Technology
AGR:	Agronomy
A. EXT:	Agri. Extension
ENT:	Entomology
FT:	Food Technology
HORT:	Horticulture
PBG:	Plant Breeding & Genetics
PP:	Plant Pathology
SS& SWC:	Soil Science and Soil & Water Conservations
BCH:	Biochemistry
BOT:	Botany
ZOOL:	Zoology
ANTH & SOC:	Anthropology & Sociology
ECO/AG. ECO:	Economics & Agricultural Economics
STAT:	Statistics
FR&RM:	Forestry & Range Management
C.O.E:	Controller of Examinations

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