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ARID AGRICULTURE UNIVERSITY
RAWALPINDI**

DEPARTMENT OF ZOOLOGY

(M. Phil. Programme)



**Self Assessment Report
4rth Cycle (2012-14)**

Program Team

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CONTENTS	Pages
DEPARTMENT OF ZOOLOGY • Introduction • History	
<u>SECTION 1</u> Criterion-1: PROGRAM MISSION, OBJECTIVES AND OUTCOMES • Mission Statement of the Department of Zoology Standard 1-1: Documented measurable objectives • Main elements of strategic plan to achieve mission and objectives Standard 1-2: Program outcomes • Program outcomes measurement	
<u>SECTION 2</u> Criterion 2: CURRICULUM DESIGN AND ORGANIZATION • Degree Title: PhD, M.Phil and M. Sc Zoology/Biology • Definition of Credit Hour • Degree Plan Standard 2.1: Assessment of the Zoology Curriculum. Standard 2-2: Elements vs Courses Standard 2-3: Core requirements for the program Standard 2-4: Major requirements for the program Standard 2-5: General requirements for the program Standard 2-6: Information technology component of the curriculum Standard 2-7: Enhancing Oral and Written Communication Skills of the Students	
<u>SECTION 3</u> Criterion 3: LABORATORIES AND COMPUTER FACILITIES • Laboratory Titles • Location and Area • Objectives Standard 3.1: Laboratory Manuals Standard 3.2: Support/Laboratory Personal for Maintenance of Laboratory • INSTITUTIONAL FACILITIES • INTSTITUTIONAL SUPPORT Standard 3.3: Computing Infrastructure and Facilities	
<u>SECTION 4</u> Criterion 4: STUDENT SUPPORT AND ADVISING Standard 4.1: Frequency of Courses Standard 4.2: Structure of the Courses Standard 4.3: Guidance to the students	

<u>SECTION 5</u>	
Criterion 5: PROCESS CONTROL	
Standard 5.1: Program Admission Criteria	
Standard 5.2: Process of Registration	
Standard 5.3: Recruiting Process for Faculty	
Standard 5.4: Teaching and Delivery of Course Material	
Standard 5.5: Completion of Program Requirements	
<u>SECTION 6</u>	
Criterion 5: FACULTY	
Standard 6.1: Full Time Faculty	
Standard 6.2: Effective Programs for Faculty Development	
Standard 6.3: Faculty Member Motivation	
<u>SECTION 7</u>	
Criterion 7: INSTITUTIONAL FACILITIES	
Standard 7.1: Infrastructure	
Standard 7.2: Library Facilities	
Standard 7.3: Class Room and Faculty Offices	
<u>SECTION 8</u>	
Criterion 8: INSTITUTIONAL SUPPORT	
Standard 8.1: Support and financial resources	
Standard 8.2: High quality Research scholars	
Standard 8.3: Financial resources	
<u>SUMMARY</u>	
<u>Annexure</u>	
Annex-i: Courses offered	
Annex-ii: Faculty Resumes	

1. INTRODUCTION

The department of Zoology was started in 1997 and now it holds a pivotal position in the university and can also be compared with any department of Zoology elsewhere in Pakistan. The M. Phil. degree programs in Zoology and Biology were launched in 2006. This department is a part of the Faculty of Sciences and established to focus teaching and research in various fields of Biological and Zoological Sciences. This department is especially developed to foster an inter-disciplinary approach across a wide range of different fields of Zoology. The Department has earned immense recognition for academic excellence and prominence in various fields of research such as Animal Diversity/Ecology and Wildlife, Genetics, Parasitology, Reproductive Physiology, Endocrinology, Aquaculture and Fisheries and Microbiology. The Department has an experienced faculty actively involved in research activities in collaboration with different institutes such as National Agriculture Research Center (NARC), Museum of Natural History, Institute of Health (NIH), Islamabad and Khan Research Laboratories (KRL), Islamabad.

This program provides students an opportunity to groom themselves and young fellows to communicate and present their skills and to polish their abilities to work individually as well as in a team for leadership qualities, self confidence and interpersonal skills to sustain work pressure.

SECTION-1

CRITERION-1: PROGRAM MISSION, OBJECTIVES AND OUTCOMES

Curriculum and research in Mphil program focused to train up to dated and well trained Biologist and Zoologists, in different sub fields such as Genetics Parasitology/Microbiology, Reproductive Physiology/Endocrinology, Aquaculture and Fisheries and Wildlife/Ecology depend upon student's choice and specific interest.

Mission Statement

This program is established to promote excellence and understanding at all levels of biological organization starts from cellular and molecular level up to ecosystem by also covering organism's level, population and community. We value communication and analytical skills, and field work, and, in keeping with the larger mission of the University in preparing students as job producers instead of job seekers, we place a premium on contextual learning and understanding.

STANDARDS:

Standard 1-1: Documented measurable objectives

Objectives:

Objectives cover both academic as well as research field.

1. To confer students, advance knowledge of subjects starting from basic Zoology.
2. To help students in formulating research plan, project writing, hypothesis generating and execution of research up to thesis writing.

Outcomes:

Graduates from the department are getting jobs in both academic as well as research field due to their clear and strong concepts of Zoology and hold on different research activities.

Main elements to achieve objectives

Research

1. Uphold main research foci and attempt for distinction in different sub fields of Zoology and Biology.
2. Encourage and promote assimilation across different disciplines and integrative research fields.
3. Promote laboratory research as well as field work.
4. Support research at the interface of experimental and academic biology.
5. Expand and sustain different research programs that lay the foundations for teaching and service, and continue those activities that help in maintaining these services at the forefront of emerging fields.

Teaching

1. Retain a precise, broad-based major in Zoological and Biological sciences that presents a persuasive learning skill.
2. Highlight common problem solving and analytical capacities that have vast applications.
3. Accentuate the basic edifice in biology that comprises idea of unification and integration.
4. Practice exceptional graduate teaching that comprises skilled communication among different disciplines.

TABLE-1: OBJECTIVES ASSESSMENT

S. #	Objective	How Measured	When Measured	Improvement Identified	Improvement made
1	Give basic and advance knowledge of the zoology	Interview, semester examination and comprehensive examination	While entry into the program, end of semester and course work	Curriculum update and faculty training	Specific optional courses are offered to increases knowledge of a specific sub-discipline of Zoology. The courses are given to senior faculty.
2	The ability to formulate a specific research plan and carry out original independent research on a hypothesis to be tested in depth concerning novel ideas about animal biology.	Students are given task to make some hypothesis in the area of their interest	During research planning for M. Phil degree	The ideas must not be copied	Students are forced to get latest review articles and device the hypothesis

TABLE-2: STANDARD 1-2: OBJECTIVES VS OUTCOMES

Outcomes	Objectives		
	Sr. No.	1	2
	1	*	***
	2	***	***

* Relevant

** Relevant and satisfactory

*** Highly relevant and satisfactory

TEACHERS EVALUATION

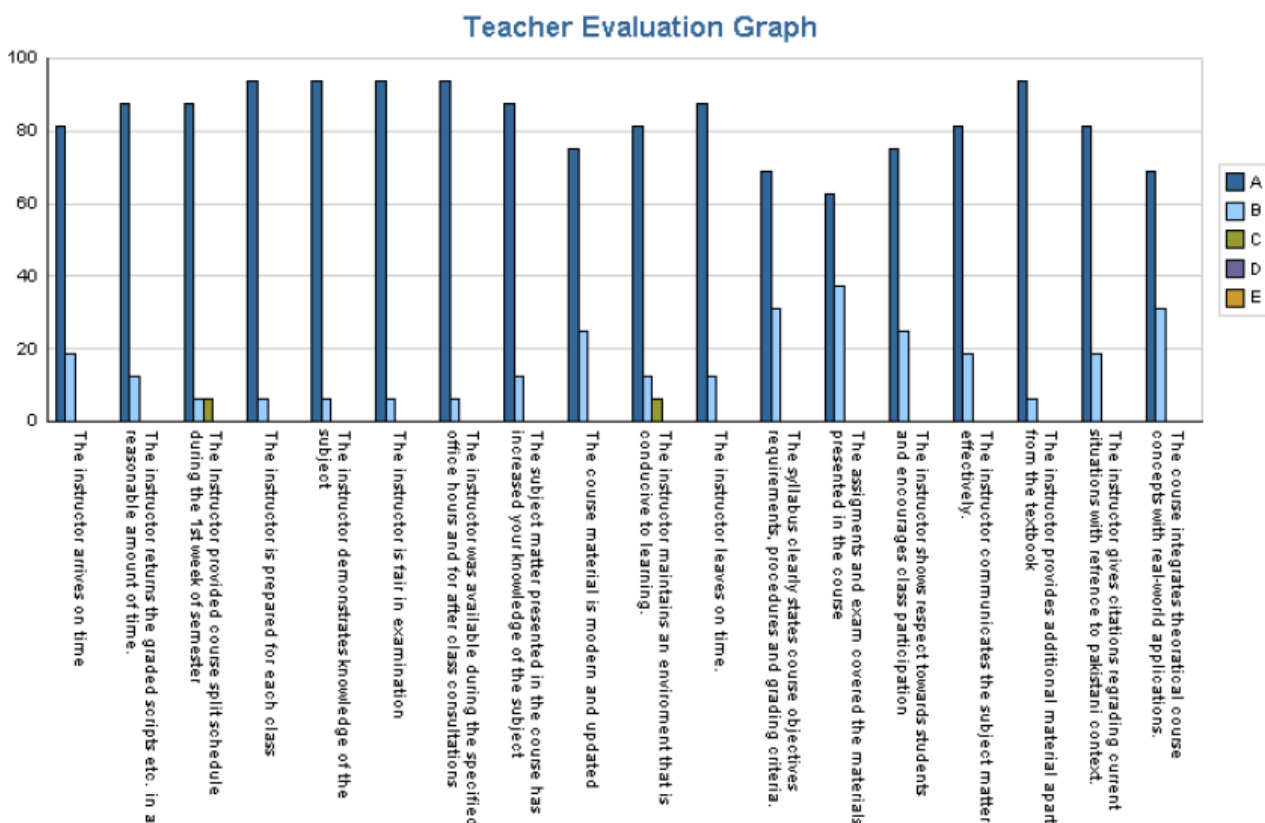
The teachers were evaluated by the students at the end of course completion through the proforma-10 (Annex-II). Detail of performance of each teacher is given in Figures bellow

Course #	Courses Title	Credit Hours	Course Instructor
ZOOL-718	Applied Reproductive Physiology	3(2-2)	Dr. Shamim Akhter
ZOOL-732	Herpetology	3(2-2)	Dr. Muhammad Mushtaq
ZOOL-731	Behavioral Ecology	3(3-0)	Dr. Amjad Rashid Kayani
ZOOL-735	Advances in Aquaculture	3(3-0)	Dr. M. Zubair Anjum

Teacher Name: Shamim Akhtar

Course Name: Applied Reproductive Physiology

Section: A M/E: M Semester#: 2



Teacher Name: Muhammad Mushtaq

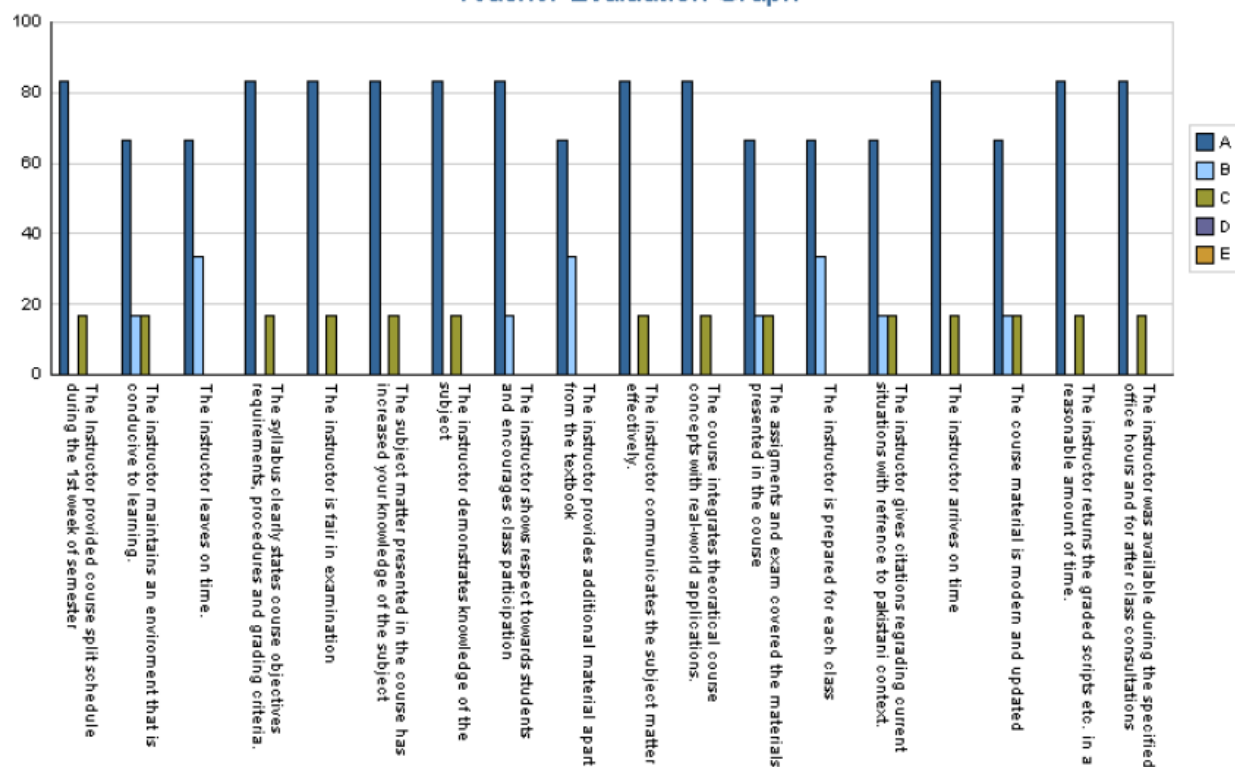
Course Name: Herpetology

Section: A

M/E: M

Semester#: 2

Teacher Evaluation Graph

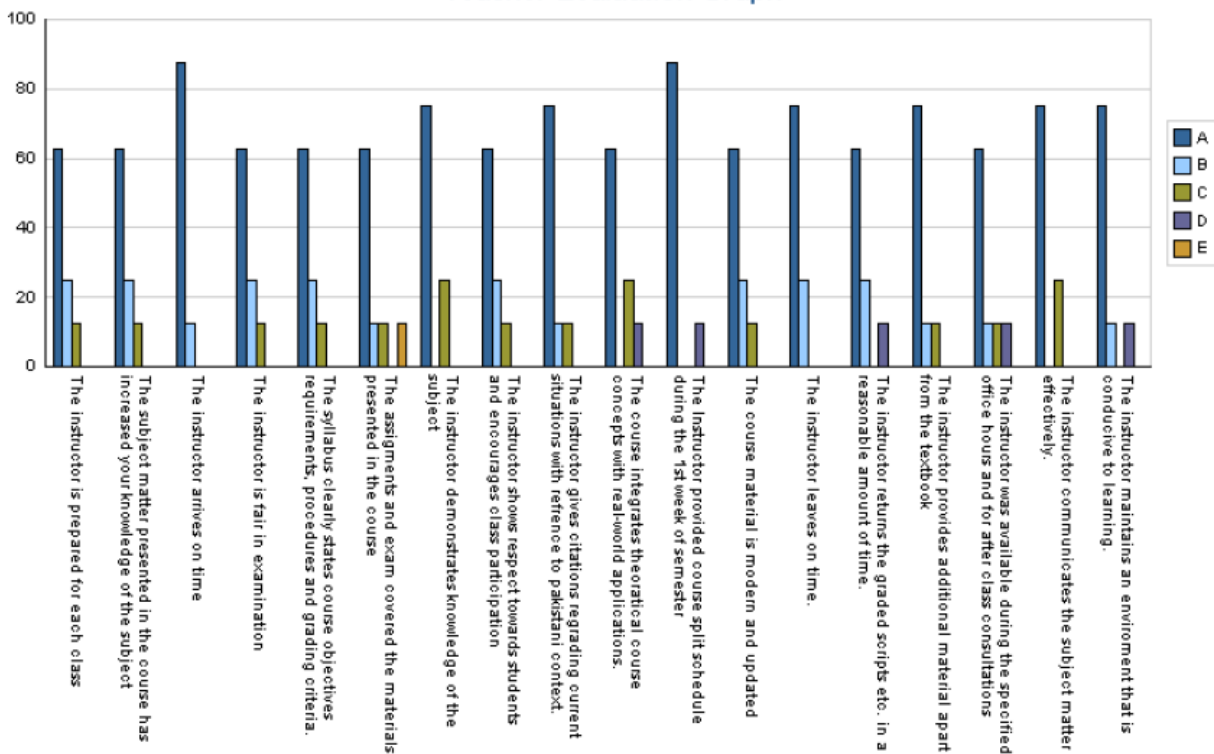


Teacher Name: Amjad Rashid Kayani

Course Name: Behavioral Ecology

Section: A M/E: M Semester#: 1

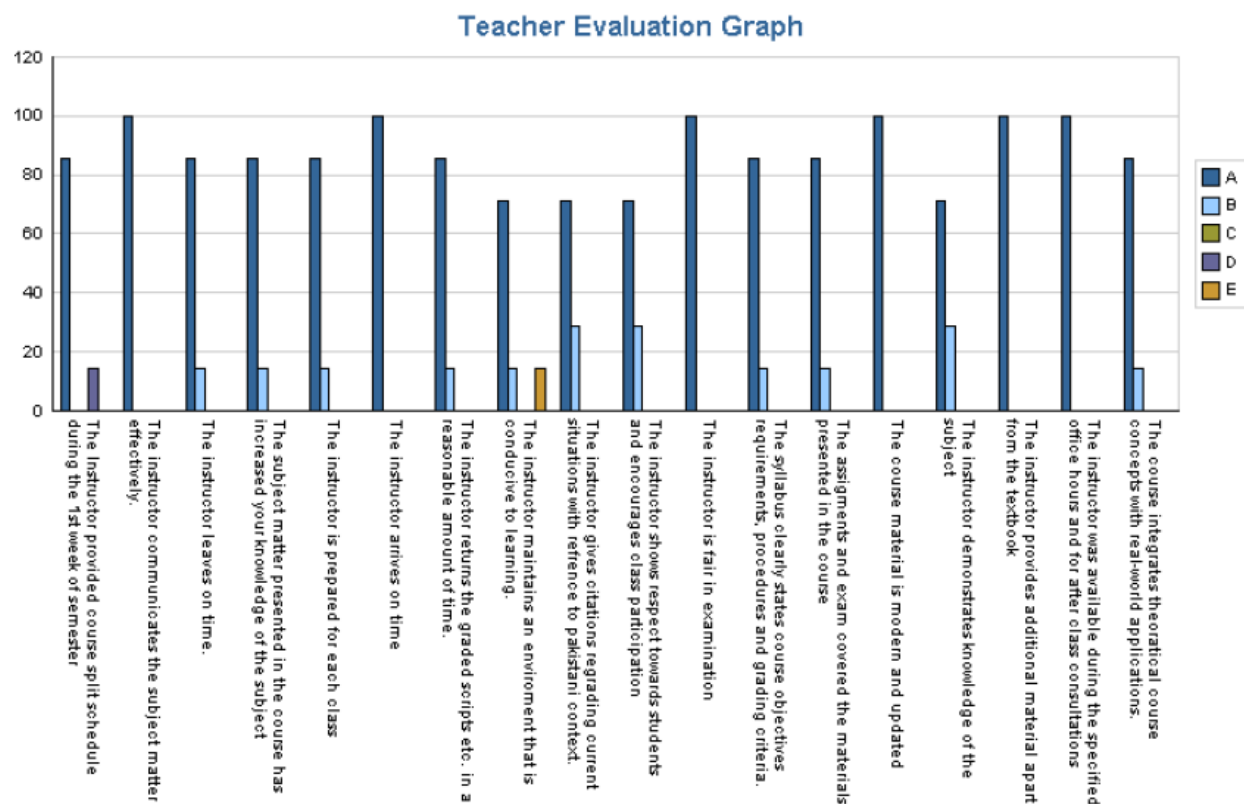
Teacher Evaluation Graph



Teacher Name: Amjad Rashid Kayani

Course Name: Behavioral Ecology

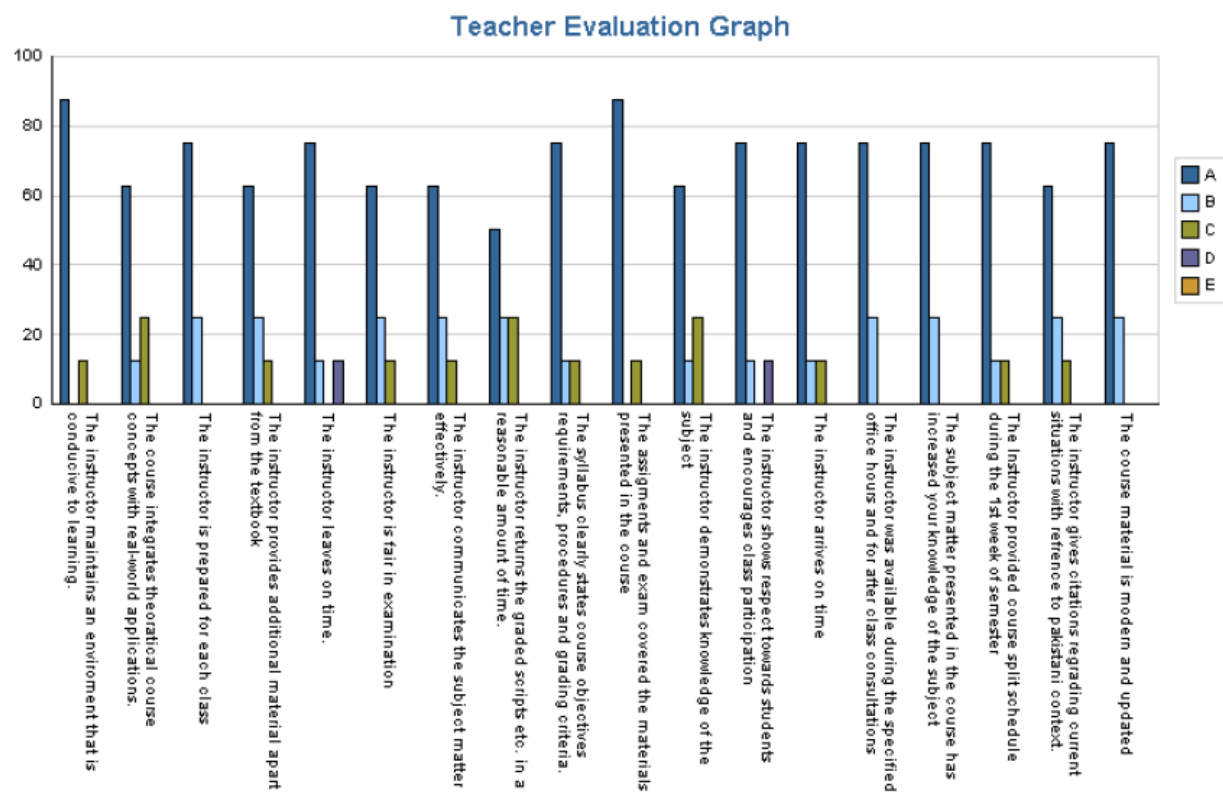
Section: B M/E: E Semester#: 1



Teacher Name: Muhammad Zubair Anjum

Course Name: Advances in Aquaculture

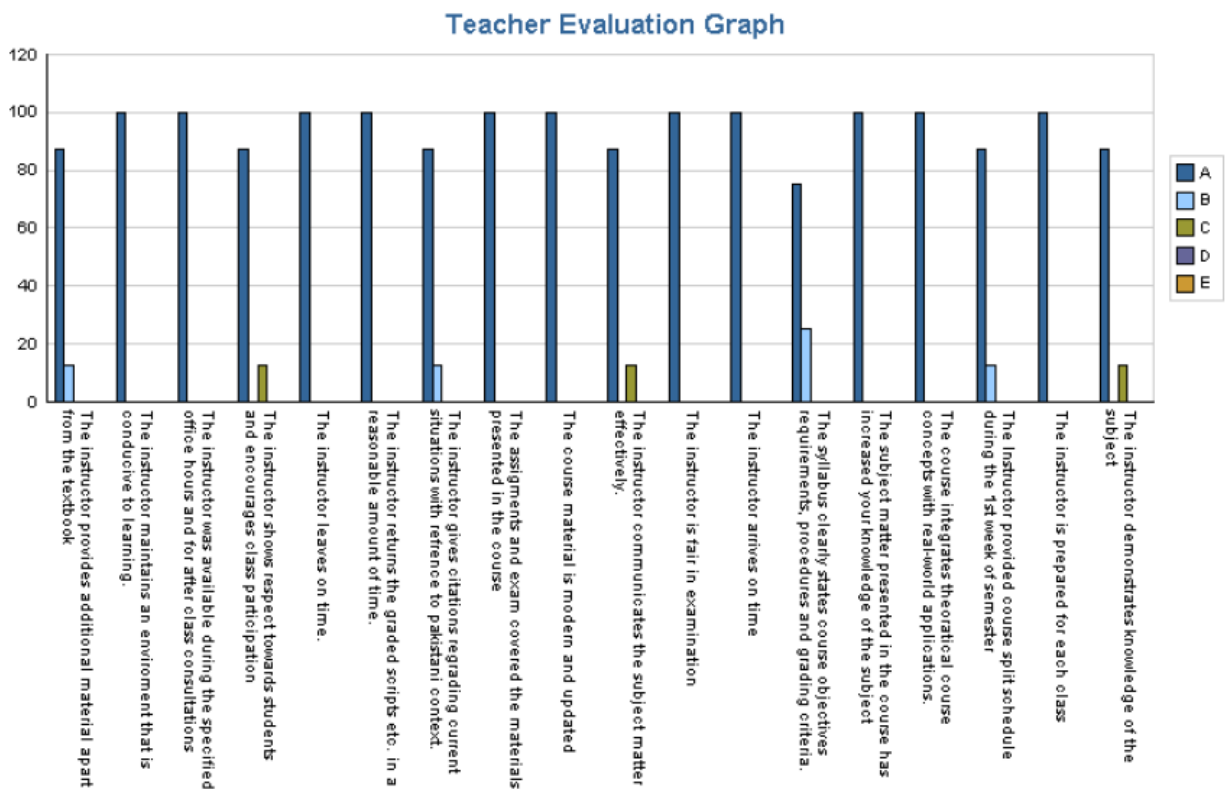
Section: A M/E: M Semester#: 1



Teacher Name: Muhammad Zubair Anjum

Course Name: Advances in Aquaculture

Section: B M/E: E Semester#: 1



COURSE EVALUATION

Courses were evaluated by students at the end of course completion through proforma-1 (Annex-I). Detail of evaluation of each course is given in figures bellow.

Course #	Courses Title	Credit Hours	Course Instructor
ZOOL-718	Applied Reproductive Physiology	3(2-2)	Dr. Shamim Akhter
ZOOL-732	Herpetology	3(2-2)	Dr. Muhammad Mushtaq
ZOOL-731	Behavioral Ecology	3(3-0)	Dr. Amjad Rashid Kayani
ZOOL-735	Advances in Aquaculture	3(3-0)	Dr. M. Zubair Anjum

Teacher Name: Shamim Akhtar

Course Name: Applied Reproductive Physiology

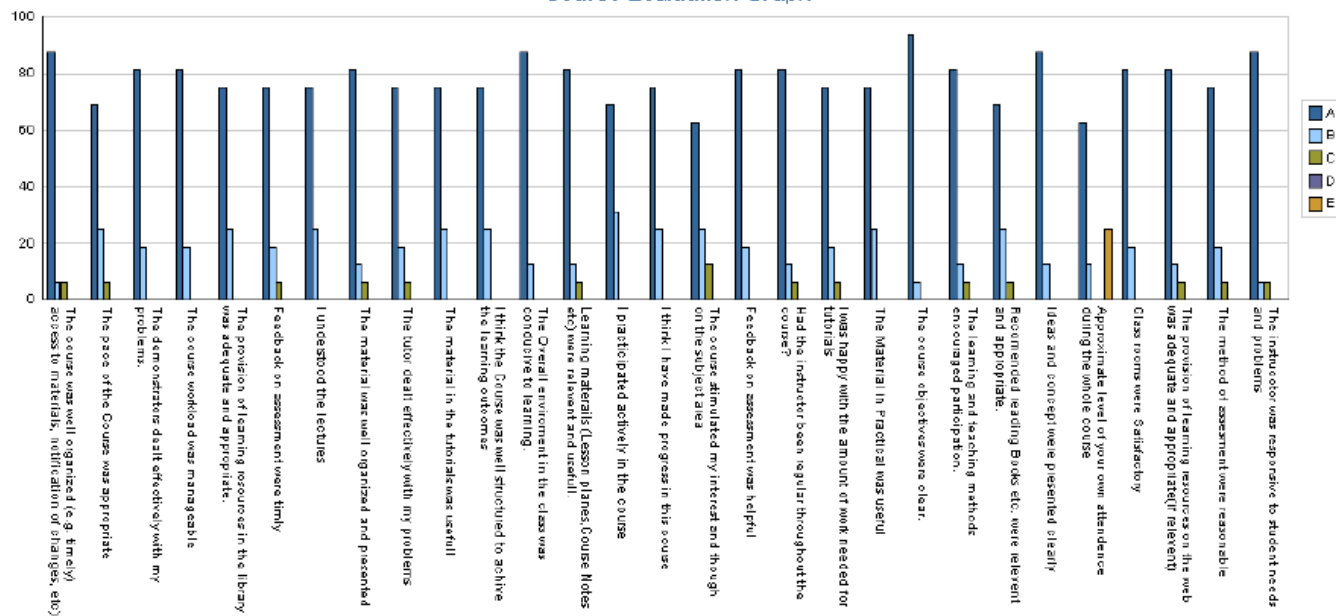
Section: A

M/E: M

Semester# 2

Class: M.Phil (Zoology)

Course Evaluation Graph



Teacher Name: Muhammad Mushtaq

Course Name: Herpetology

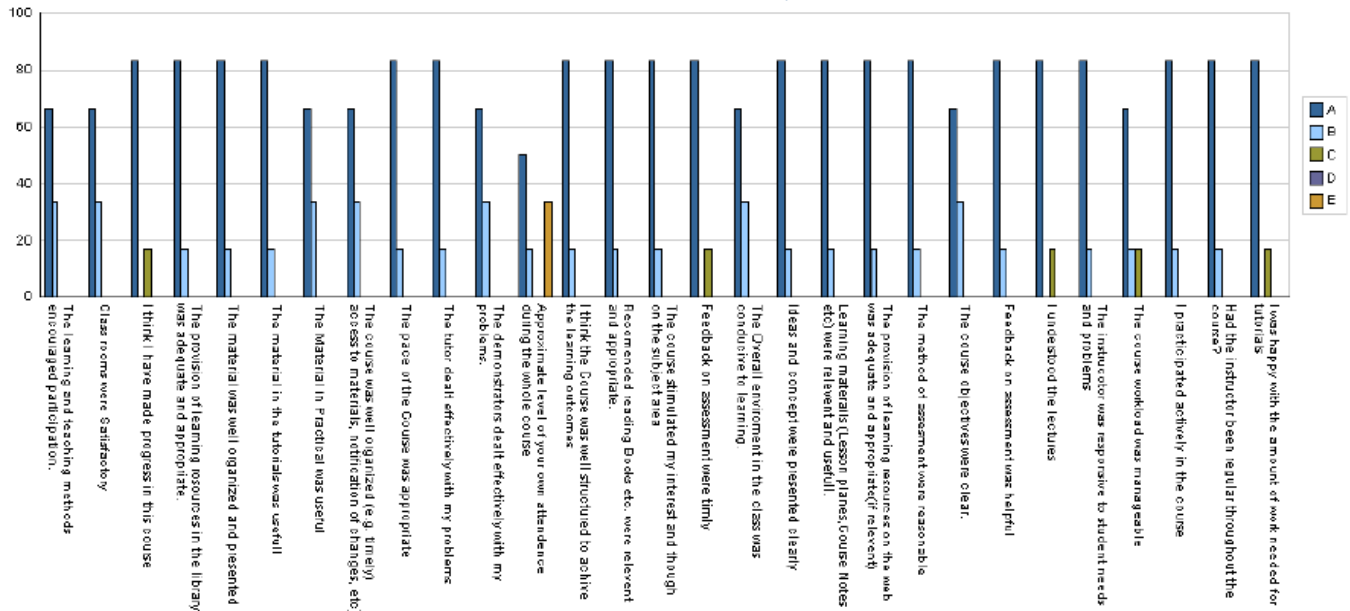
Section: A

M/E: M

Semester# 2

Class: M.Phil (Zoology)

Course Evaluation Graph



Teacher Name: Amjad Rashid Kayani

Course Name: Behavioral Ecology

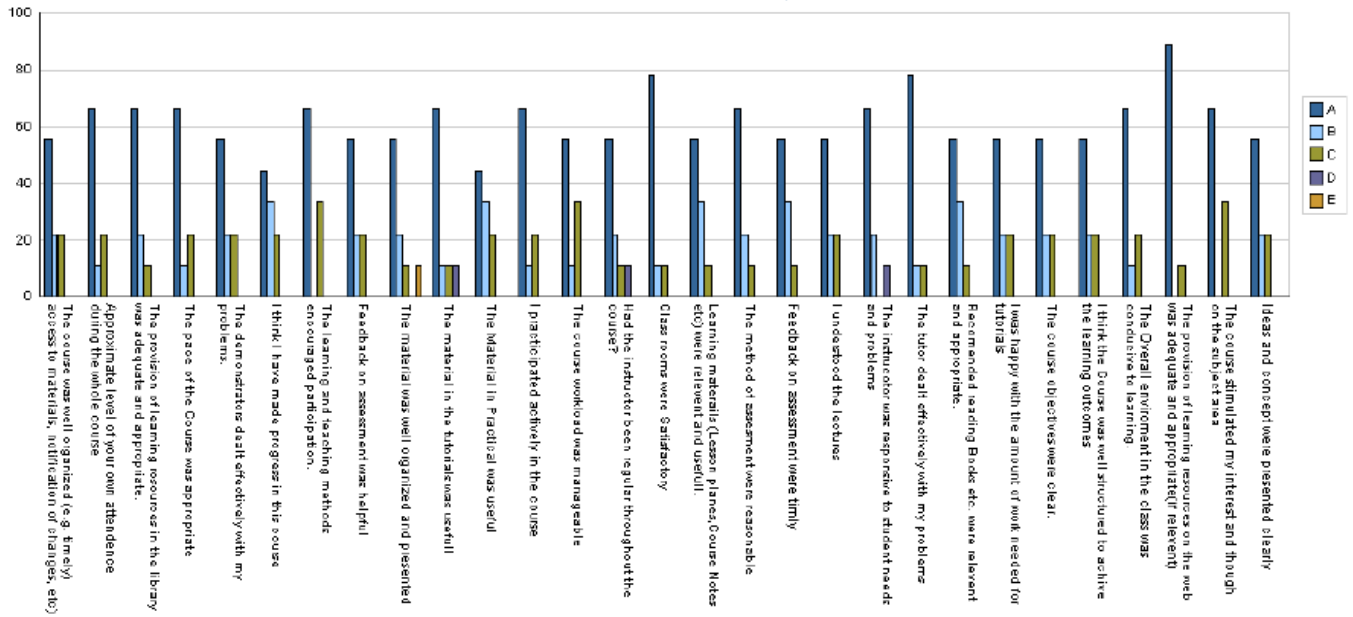
Section: A

M/E: M

Semester# 1

Class: M.Phil (Zoology)

Course Evaluation Graph



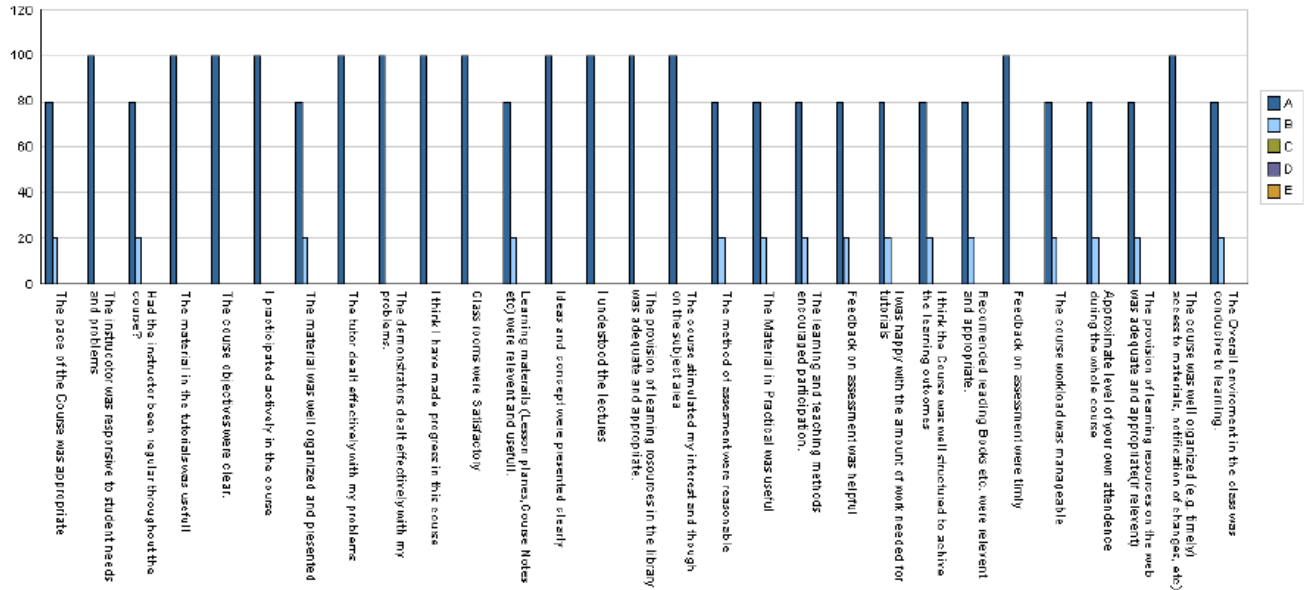
Teacher Name: Amjad Rashid Kayani

Course Name: Behavioral Ecology

Section: B M/E: B Semester# 1

Class: M.Phil (Zoology)

Course Evaluation Graph



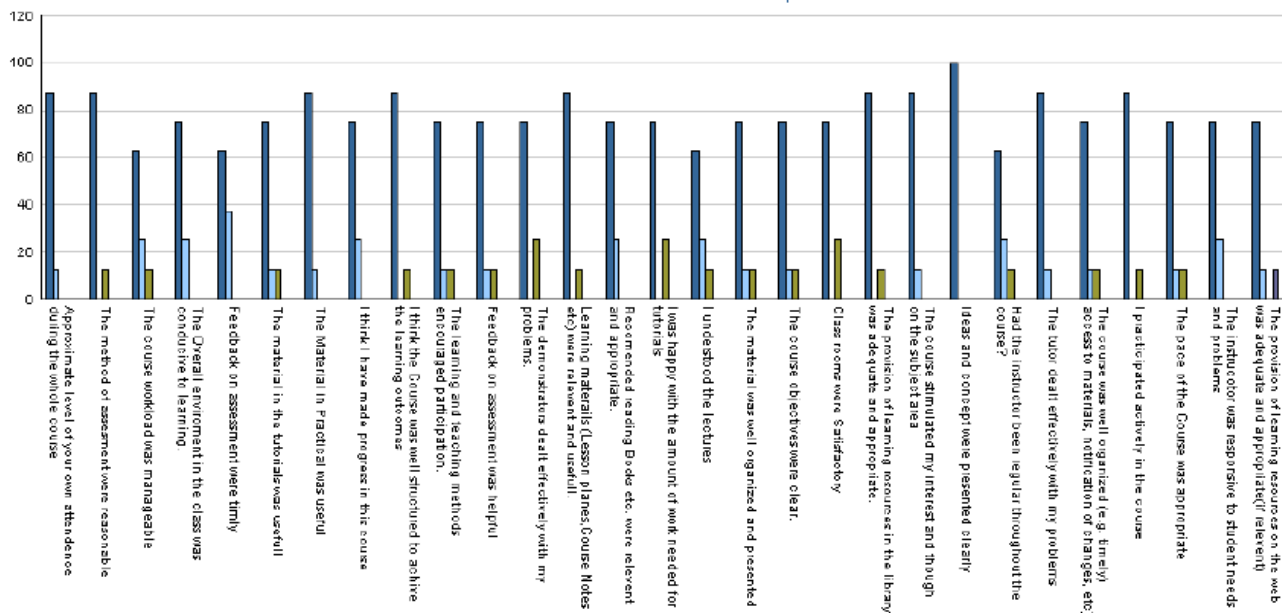
Teacher Name: Muhammad Zubair Anjum

Course Name: Advances in Aquaculture

Section: A M/E: M Semester# 1

Class: M.Phil (Zoology)

Course Evaluation Graph



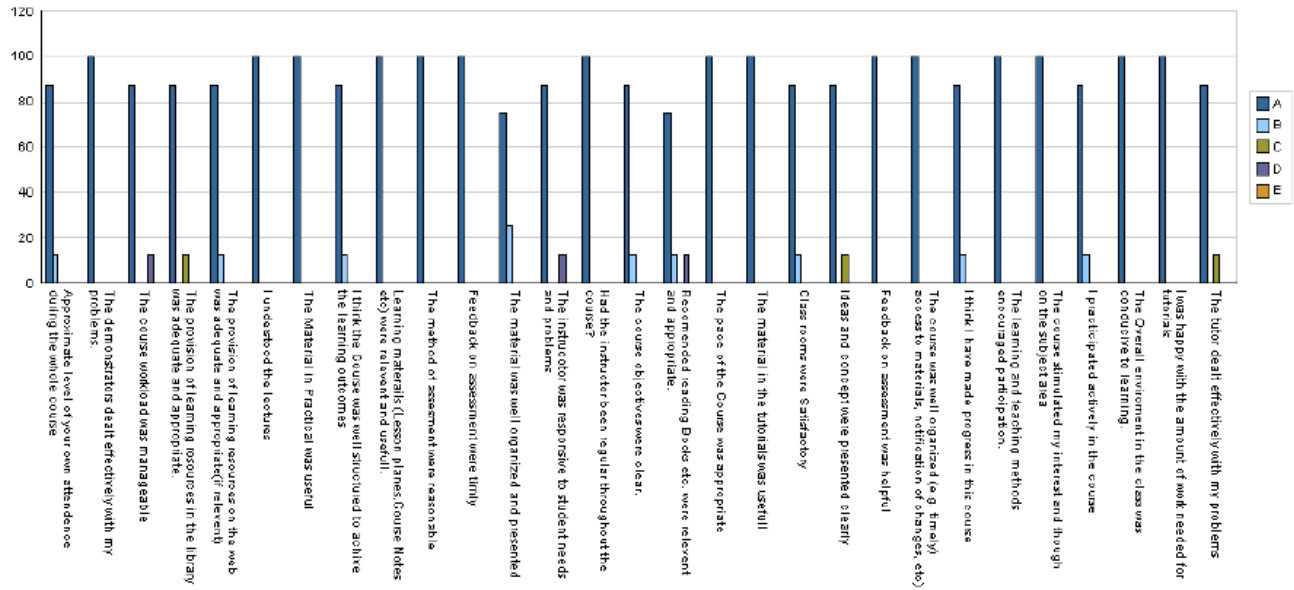
Teacher Name: Muhammad Zubair Anjum

Course Name: Advances in Aquaculture

Section: B M/E: E Semester# 1

Class: M.Phil (Zoology)

Course Evaluation Graph



Faculty Course Review Survey

The evaluation revealed that the faculty is satisfied with curriculum. Questionnaire for the evaluation has been filled and analyzed. The internal evaluation was done through mid and final term examinations for all courses offered by department. Some of the teachers suggested division of certain courses as they were lengthy.

Faculty Course Review Survey

Code	Title	Credit value	Assessment method	No. of Students	Comments on curriculum	Any Change for future in course	Semester	Grades						Teacher
								A	B	C	D	E	F	
ZOOL-715	Faunal Biodiversity of Pakistan	3(2-2)	Mid/Final Exam	25	Lengthy	Should be revised to short it	Spring	29	60	11	0	0	0	Dr. M. Sajid Nadeem
ZOOL-718	Applied Reproductive Physiology	3(2-2)	Mid/Final Exam	13	Lengthy	Should be revised to short it	Spring	30	60	9	1	0	0	Dr. Shamim Akhtar
ZOOL-731	Behavioural Ecology	3(2-2)	Mid/Final Exam	14	Appropriate	Not suggested	Spring	19	60	13	8	0	0	Dr. Amjad Rashid Kayani
ZOOL-732	Herpetology	3(2-2)	Mid/Final Exam	23	Appropriate	Not suggested	Spring	20	75	2	3	0	0	Dr. Mushtaq

ALUMNI SURVEY RESULTS

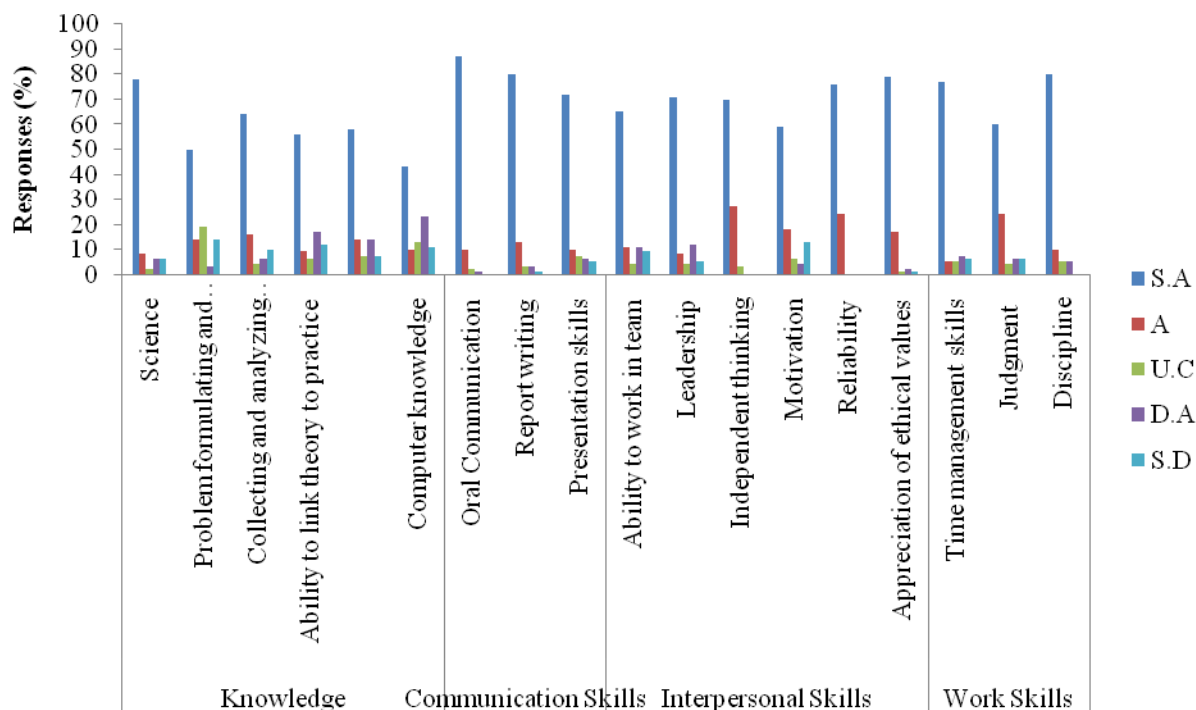
Feedback of M. Phil. students graduated was acquired through Proforma-7. Response from alumni was valuable as it not only appreciated the strengths of program but also pointed some weaknesses.

General comments:

Time table is mostly not suitable due to the unavailability of class rooms. More funding is required for general subject practicals and for student's thesis research. Laboratories are not well equipped and more facilities are required for both field work and laboratories.

Career opportunities:

Job opportunity after getting this degree is there in research laboratories, diagnostic centers, Non Governmental organizations (NGO) and in teaching etc



Key: SA=Strongly Agree, A=Agree, UC=Uncertain, D=Disagree, SD=Strongly Disagree

Fig.11 Alumni Survey

SURVEY OF GRADUATING STUDENTS

Survey of graduating students was conducted through Performa 3. Students demonstrated their satisfaction in M.phil program and found it effective in context to team work, learning, in attaining program objectives and about favorable environment. Other features of the program have also been evaluated well.

Best aspects of the Program:

- Program is beneficial and helped in improving learning abilities
- Confidence building, field work, research and writing abilities
- Improved writing skills, professional and management proficiency of wildlife , parasitology, fisheries, reproductive biology and genetics

Aspects of Program in need of improvement:

- Better infrastructure that include class rooms and well equipped laboratories
- More apparatus, research equipment/facilities in laboratories and for field
- More scholarships and fee waiver for the eligible students

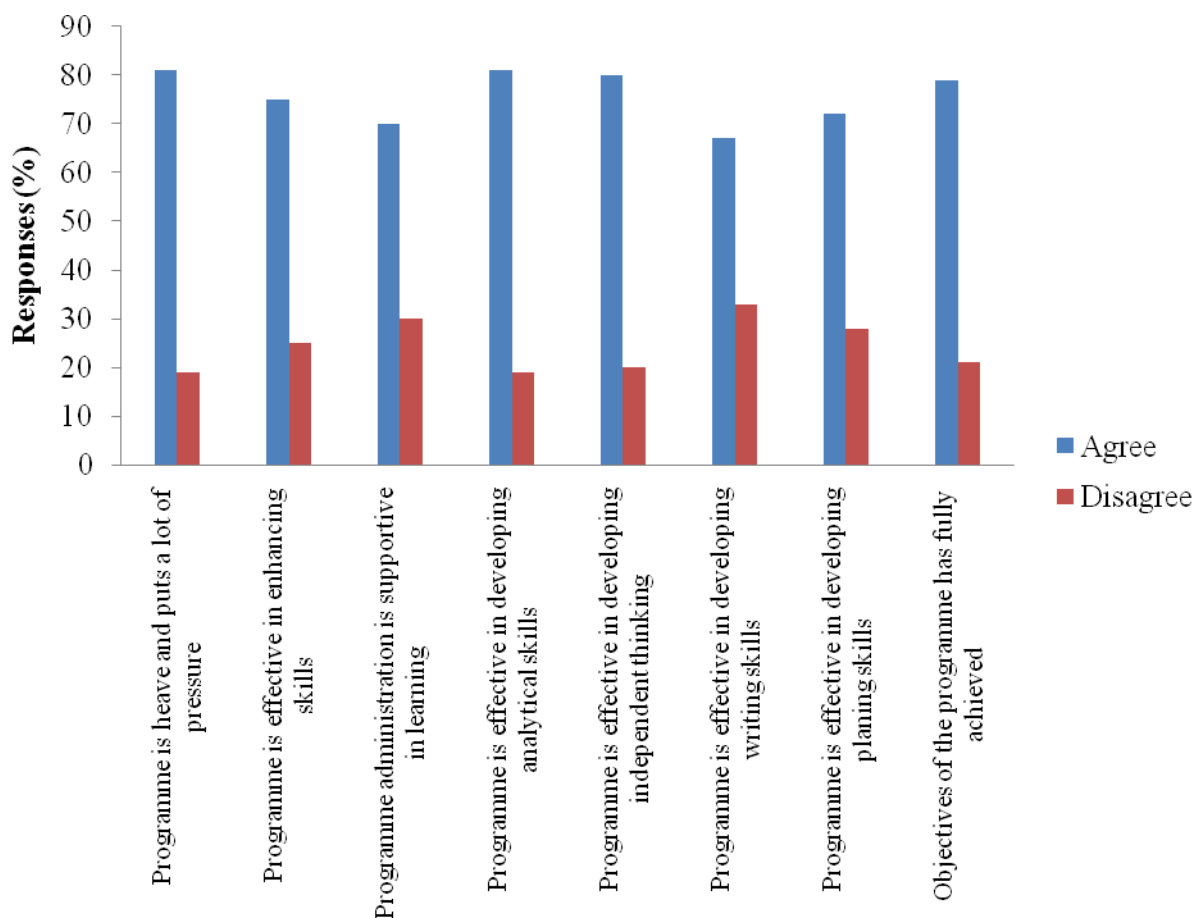


Fig. 12 Graduating Students Survey

RESEARCH STUDENTS PROGRESS REVIEW

Survey of M. Phil. research student's progress review was conducted through Performa 2.

Results are given below in graphs

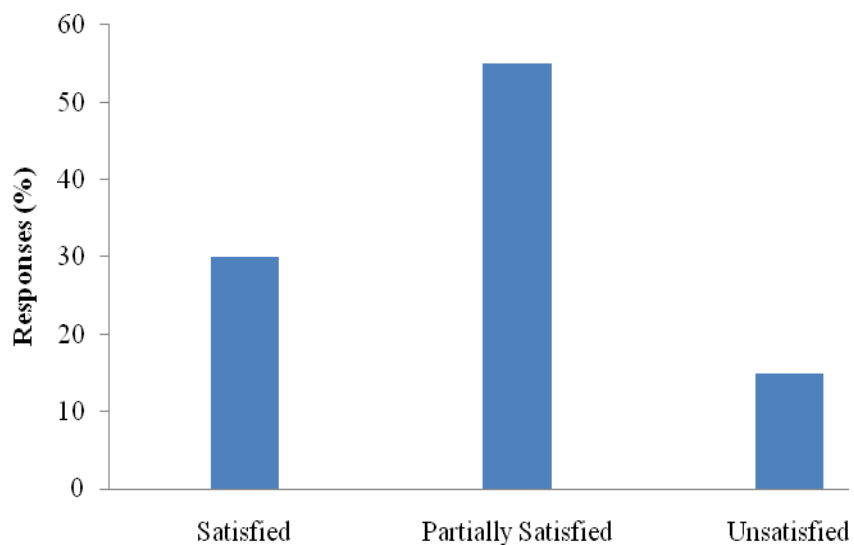


Fig.13 Level of supervision received

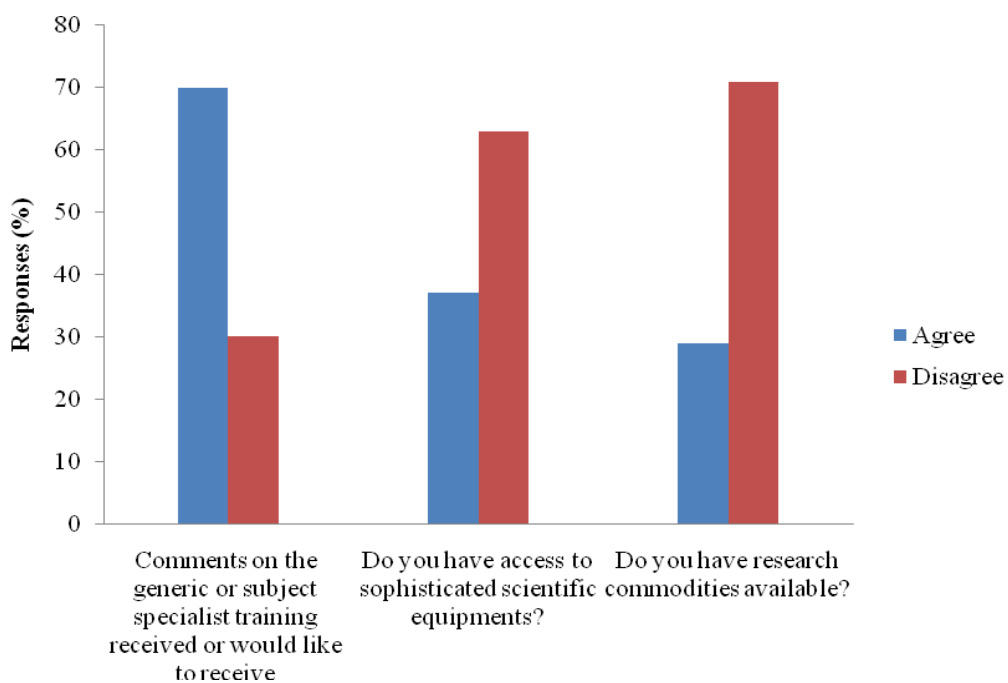


Fig.14 Response of students on Misc. issues

Results of Faculty Survey

	Dr. Shamim Akhter	Dr. Muhammad Mushtaq	Dr. Amjad Rashid Kayani	Dr. M. Zubair Anjum
Your mix of research, teaching and community service	Satisfied	V. Satisfied	Satisfied	V. Satisfied
The intellectual stimulation of your work	Satisfied	Satisfied	Satisfied	Satisfied
Type of teaching / research you currently do	V. Satisfied	V. Satisfied	Satisfied	V. Satisfied
Your interaction with students.	Satisfied	Satisfied	V. Satisfied	Satisfied
Cooperation you receive from colleagues	Satisfied	Satisfied	Satisfied	Satisfied
The mentoring available to you.	Satisfied	Satisfied	V. Satisfied	Satisfied
Administrative support from the department	V. Satisfied	V. Satisfied	Very satisfied	Satisfied
Providing clarity about the faculty promotion process	Satisfied	Satisfied	Satisfied	V. Satisfied
Your prospects for advancement and progress	Satisfied	Satisfied	V. Satisfied	Satisfied

STANDARD 1-3: The results of program's assessment and the extent to which they are used to improve the program must be documented.

There are certain short comes which were observed again and again. These are unavailability of apparatus, equipment and resources for practical's and for research. Laboratories should be well funded and university research grant to department is much needed for research activities. Moreover, museum and animal house must be a part of department. There is much need to improve facilities for practical aspects of the courses.

Major Future Improvement Plans

Teachers are submitting projects to upgrade laboratories with up to date facilities for the modern research and to expand department by the addition of facilities like museum and animal house.

STANDARD 1-4: The department must assess its overall performance periodically using quantifiable measures.

•

Table-1: QUANTITATIVE ASSESSMENT OF THE DEPARTMENT

S. No.	Particulars	No.	Remarks
1	M. Sc degree awarded	~30	Every year 30 students get enrolled most of them acquire degree and join different institutes for higher degree while other got employment in various fields. Few are part of the faculty of same university.

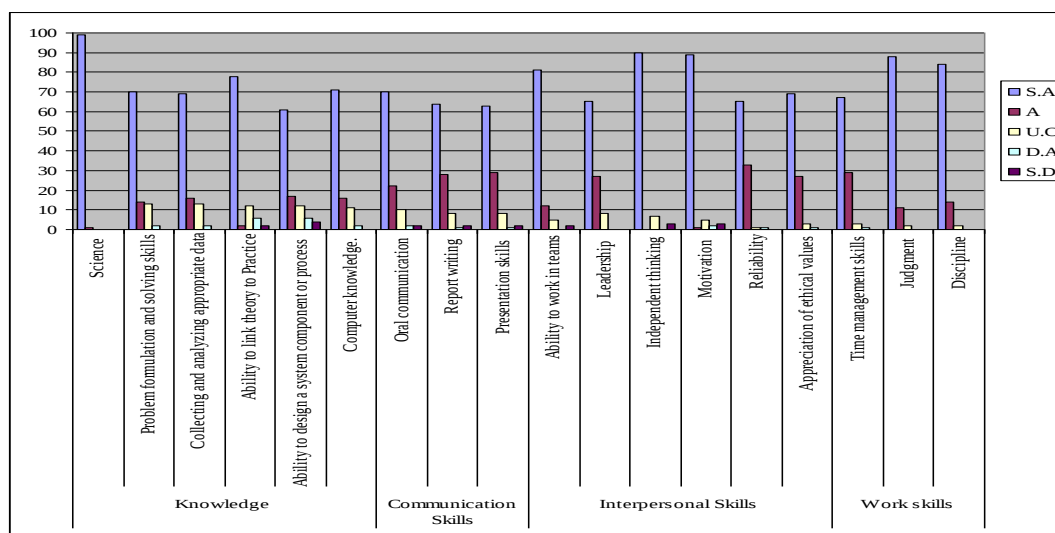
2	M. Phil produced	75	Program started in 2007-08
4	Students: Faculty (ratio)	8:1	This faculty ratio includes National Professors of HEC
5	Technical: non technical (ratio)	4:1	
6	Average grade point	3	

Research progress

Name of Faculty Member	Journal Publications	Conference publication	Projects	Short courses
Dr. Mazhar Qayyum	24	-	2	-
Dr. Shamim Akhtar	117	-	4	1
Dr. Muhammad Sajid Nadeem	23	-	3	-
Dr. Farhana Riaz	1	2	1	-
Dr. Amjad Rashid Kiyani	5	-	1	-
Dr. M. Mushtaq	12	-	2	-
Dr. M. Zubair Anjum	7	-	2	1
Dr Abida Arshad	14	-	1	-
Dr Ruqia Mehmood Baig	19	-	1	-
Mr. Muhammad Irfan	11	1	1	-

EMPLOYER'S SURVEY

The employer survey is conducted to obtain view of employers about education quality, department of Zoology is providing. This survey is to assess different skills and qualities of university graduated students which they are showing in their respective organizations. Overall the report is satisfactory and showed good organizational skills and knowledge of subject as well as good communicational and computer skills of our graduated students.



Key: SA=Strongly Agree, A=Agree, UC=Uncertain, D=Disagree, SD=Strongly Disagree

Fig. 15: Employer's survey

SECTION 2

CRITERION-2: CURRICULUM DESIGN AND ORGANIZATION

Curriculum in department of Zoology has been designed and now revised on regular basis after approval from Board of Studies. Senior faculty members and subject specialist from other relevant departments are part of Board of Studies in Zoology Department headed by Chairman of Zoology. After board of studies it is revised by Board of Faculty and Academic council which are headed by Dean of Faculty in Board of Faculty. Academic Council is comprised of Professors, Associate Professors, Faculty Representatives and very senior subject specialists.

Degree Title:

M.Phil. Zoology

Definition of Credit Hour:

One theory lecture or two hours laboratory (practical / week) is credited as one credit hour and carries 20 marks. Duration of a semester is of 18 weeks and lectures are distributed accordingly.

Degree Plan:

M.Phil degree duration is of 4 semesters/2 years that includes 32 credit hours course work and a 10 credits research thesis.

Pre-requisites

Academic Requirements:

M.Sc. Zoology or equivalent degree from any recognized institute with at least second division or 2.5/4CGPA is required for a student to take admission.

Past academic performance and entry test marks define the merit to get admission.

Degree Requirements:

Requirement is to complete 34 credit hours (courses) to obtain degree with minimum Grade Point Average 2.50/4.00 CGPA.

Examination

In course work, student's evaluation is done by mid-term examination, assignments/quizzes and final examination. A student, who misses the mid-term examination, is not allowed a make-up examination and is awarded zero marks in that examination. In case a student does not appear in the final examination of a course, he shall be deemed to have failed in that course. In theory, weightage to each component of examination is as prescribed here under: The qualification marks for each examination is 40%. .

Mid Examination	30%
Assignments	10%
Final Examination	60%

For practical examination (if applicable) 100% is given to practical as scored final examination. A student is eligible to sit for the examination provided that he/she has attended not less than 75% of the classes in theory and practical, separately

M. Phil Zoology

Course #	Course Title	Credit Hours
ZOOL-713	Clinical Bacteriology	3(2-2)
ZOOL-734	Mammalogy	3(2-2)
ZOOL-725	Human Genetics	3(2-2)
ZOOL-720	Seminar-I	1(1-0)
BIOL-724	Conservation Biology	3(2-2)
BCH-732	Medical Nutrition Therapy	3(2-2)
BCH-734	Numerical Problems in Biochemistry	3(3-0)
BCH-735	Principles of Advanced Biochemical Techniques	3(3-0)
BIOL-725	Animal Reproductive Biology	3(2-2)
ZOOL-714	Medical Virology	3(2-2)
ZOOL-718	Applied Reproductive Physiology	3(2-2)
ZOOL-733	Ornithology	3(2-2)
ZOOL-715	Faunal Biodiversity of Pakistan	3(2-2)
ZOOL-712	Clinical Endocrinology	3(2-2)
ZOOL-719	Special Problem	1(1-0)
ZOOL-720	Seminar-II	1(1-0)
STAT-701	Experimental Statistics	3(3-0)
BCH-731	Advances in Biochemistry	3(3-0)
BCH-708	Human Physiology	3(2-2)
BCH-721	Environmental Biochemistry	3(2-2)
BCH-736	Proteomics	3(2-2)
BIOL-722	Host Parasite Interactions in Animals	3(2-2)
BIOL-723	Immunology	3(2-2)

STANDARD 2-1: The curriculum must be consistent and supports the program's documented objectives

Courses	Objectives	
	1	2
ZOOL-718	*	*
ZOOL-732	***	***
ZOOL-731	*	*
ZOOL-735	***	**

Highly satisfactory

Satisfactory

**

Non satisfactory

*

STANDARD 2-2: ELEMENTS VS COURSES

Elements	M.Phil. Zoology/Biology Courses
Theoretical background	ZOOL-713, ZOOL-734, ZOOL-725, BIOL-724, BIOL-725, ZOOL-714, ZOOL-718, ZOOL-733, ZOOL-715, ZOOL-712, ZOOL-719, BIOL-722, BIOL-723
Problem analysis	ZOOL-719, ZOOL-720,
Solution Design	STAT-701

STANDARD 2-3:

The curriculum is designed and offered according to the requirements of HEC. There are compulsory basic and advance courses along with an applied course of statistics. Students have to take a minimum 32 credit hours courses. They have to write a thesis worth 10 credits

STANDARD 2-4:

Higher Education Commission (HEC) course work of 32 credit hours

Program	Credit hours/semester	Total Credit hours	Theory	Practical	Thesis
M. Phil.	16	32	24	8	10

STANDARD 2-5:

Courses being offered are highly informative and fulfilling the requirements but most of the courses are of basic nature and only one or two are applied.

STANDARD 2-6:

There is deficiency of information technology related courses but some activities and courses in program are useful to give basic training of computer use.

S. No.	Course No.	How applied and integrated through out the program
1	STAT-701	Use of statistical software pushes the students to learn basic use of computer
2	ZOOL-720, ZOOL-719	Seminar preparation requires the basic knowledge of computer sciences. It urges the students to learn basic use of computer. Same is the case with thesis writing
3	Synopsis and Thesis write up	

STANDARD 2-7:

Two seminars of one credit hour each are compulsory at the M. Phil. level. Moreover, students have to defend their research report. Assignments are given to M. Phil. students on specific titles (part of the

course) which are presented orally and given as written report (assignments) by the students which have increased their oral and written communication skills.

S. No.	Course No.	How applied and integrated through out the program
1	ZOOL-720	Two seminars of one credit hour each are compulsory at the M. Phil. level during course work
2	Courses presentations/assignments	During course work a presentation/assignment is obligatory for each course
3	Synopsis formation	Before commencing research in open forum
4	Thesis writing	Thesis viva to an external examination

SECTION-3

CRITERION-3: LABORATORIES AND COMPUTING FACILITIES

Laboratory Title:

1. Microbiology and Parasitology lab
2. Fishries
3. Molecular Genetics
4. Reproductive Physiology/Endocrinology
5. Wildlife & Biodiversity
6. Animal Physiology
7. General lab

Location and Area:

Faculty of Sciences, D-Block, 2nd Floor, New Academic Block and area of each laboratory is 450 square feet

Objectives:

Laboratories are used for:

1. Practical exercise and demonstrations to graduate students in their introductory and major courses
2. Research work for the Post-graduate students
3. Used for implementing the funded projects by the University, HEC, PSF, PARC and other agencies.
4. Laboratories are well specious and adequate.

Major apparatus viz equipments:

Microscopes, autoclave, incubator, deep freezer, refrigerators, laminar flow cabinet, pH meter, elective balance, slide and overhead projectors, shaker, hitter, Horizontal Gel-Electrophoresis apparatus, Centrifuge (simple and refrigerated) pipettes are present but some are out dated and out of order. However, department is in much need of, Vertical Gel-Electrophoresis apparatus, Thermocycler (PCR machine), Gel Documentation system, Spectrophotometer. Moreover, department also requires an animal house and a museum

Safety Regulations:

Safety measures are not available against fire (Extinguishers), minor hazards and accidents, injuries (First Aid Kit). However, the University maintains a Medical Dispensary for such incidents.

STANDARD-3.1: LABORATORY MANUALS:

- Laboratory manuals of each subject (Microbiology and Parasitology, Reproductive Physiology, Wildlife & Biodiversity, Animal Physiology, Genetics and Fishries) are not available. The department has no library at all. However, individual teachers have their books.

**STANDARD-3.2: SUPPORT/LABORATORY PERSONAL FOR MAINTENANCE OF
LABORATORY**

Laboratories are maintained by only one laboratory assistant (equipment, glassware, chemicals, material etc). A laboratory attendant assists the students in practical, cleaning and washing.

STANDARD-3.3: COMPUTING INFRASTRUCTURE AND FACILITIES

- **Computer facilities:** Not available to all faculty members and the post graduate students
- **Safety arrangements:** The labs have no exhaust fan. No first aid kits/facilities have been provided in the laboratories or in department.

- ***Water & Electricity Problems:*** Laboratories often are out of water and our building has more electricity short fall as compare to other buildings in university. This irregularity of water and electricity is affecting research and practical activities in department and especially in laboratories.

SECTION-4

CRITERION 4: STUDENT SUPPORT AND ADVISING

The university organizes support programs and provide information regarding admission, scholarship schemes etc. Department in its own capacity arrange orientation and guided tours of department.

STANDARD-4.1: FREQUENCY OF COURSES

- Courses are taught as per criteria laid down by HEC.
- Courses are offered according to the scheme of study approved by Academic Council and courses are offered as per the availability and expertise of the teachers.
- Elective courses are offered according to the policy of the university.
- For postgraduate programs, a variety of courses are offered according to demand of the profession.

STANDARD-4.2: STRUCTURE OF THE COURSES

Theoretical as well as practical aspects are focused in designing the courses. Theoretical problems are explained and assignments are also given to the students. Practical are carried out in the labs as well as in the field. Field visits to related research organizations are also organized for the awareness of the students about the latest developments in the area and to stimulate them for discussion and teacher/student interaction.

- Board of Studies approved the course contents
- Faculty members interact frequently to the students to solve their problems. Students are always welcome to ask questions in class rooms and teachers are also available even after the classes.

STANDARD-4.3: GUIDANCE TO THE STUDENTS

Following steps have been taken for the guidance of the students:

1. Information about the program requirements are provided to the students through the office of the head of the department.
2. Through the personal communication of the teachers with the students
3. Students can also contact with relevant teachers whenever they face any professional problem.
4. Students can interact with the teachers/scientists in the universities or research organization according to their requirement and there is open option for the students to get the membership in the professional societies like Pakistan Zoological Society and other relevant professional societies.

SECTION-5

CRITERION-5: PROCESS CONTROL

It includes student admission, student's registration, faculty requirement activities which are dealt by various statutory bodies and the university administration.

STANDARD-5.1: PROGRAM ADMISSION CRITERIA

- The admission advertisement is given in the National Papers by the Registrar office. The criteria and rules of the admission are followed set by the University.
- PhD admission is based on the recommendations of supervisory committee.
- Admission criteria are revised every year before the announcement of admissions.

STANDARD-5.2: PROCESS OF REGISTRATION

- The student's name, after completion of the admission process, is forwarded to the Registrar Office for proper registration in the specific program. Registration numbers are issued to the students and also registered in Campus Management System (CMS).
- Students are evaluated through Mid, Final and Practical exams and through assignments
- If the students fulfill the criteria of the university they are promoted to the next semester.
- In general, the students are registered on competition bases keeping in view the academic and research standards.

STANDARD-5.3: RECRUITING PROCESS FOR FACULTY

Recruitment policy developed by the university is according to HEC rules.

Induction of all posts is done as per rule:

- Vacant and newly created positions are advertised in the National newspapers, applications are received by the Registrar office, call letters are issued to the short-listed candidates on the basis of experience, qualification, publications and other qualities/activities as per rules of the university
- The candidates are interviewed by the University Selection Board, principal and alternate candidates are selected.

- Selection of candidates is further approved by the Syndicate and then candidates are invited to join the university within a specified period.
- Induction of new candidates depends upon the number of approved vacancies.
- At present, no procedure exists for retaining highly qualified faculty members. However, the revised pay scales of structure is quite attractive
- HEC also supports appointments of highly qualified members as foreign faculty Professors, National Professors and deposes them in various departments of the university.
- HEC also supports Interim Placement Program for Fresh PhDs (IPFP), that is helping in upgrading faculty for both academic and research purpose.

STANDARD-5.4: TEACHING AND DELIVERY OF COURSE MATERIAL

- The department revises the curriculum time to time depending upon the requirements, innovations and new technology to enhance the high quality teaching.
- With the emergence of new fields, new courses are designed and included in the scheme of study
- Related course books are available in the university library, where documentation, copying and internet facilities are available.
- Some teachers also provides notes to the students
- Most of the lectures are supplemented by overhead, slides and pictures.
- Board marker teaching technique is also appreciated as it helped student teacher communication and better understanding along with multimedia and slides etc.
- All efforts are made that courses and knowledge imparted meet the objectives and outcome. The progress is regularly reviewed in the staff meetings.

STANDARD-5.5: COMPLETION OF PROGRAM REQUIREMENTS

The controller of examinations announces the date of commencement of examination. After ~20-30 days of the examinations, the controller office notifies the results of the students. The evaluation procedure consists of mid and final examinations, practical formulas,

assignments and reports, oral and technical presentations. Some courses and teachers also include marks of practical note book. Candidates who secure 80% or more marks are awarded grade A. Gold medals are awarded to the students who secure highest marks. Degrees are awarded to the students on the annual convocation that is held every year.

SECTION-6

CRITERION-6: FACULTY: Standard 6.1: Full Time Faculty

Table: 4.6

Name	Designation	Qualification	Country Awarding Degree	Date of Birth	E-mail Address
Dr. Mazhar Qayyum	Associate Professor	Ph.D.	Pakistan	7.6.1963	Mazhar_dr@yahoo.com
Dr. Shamim Akhtar	Assistant Professor	Ph. D	Pakistan	13.06.1964	sashraf1993@yahoo.com
Dr. Muhammad Sajid Nadeem	Associate Professor	Ph. D	Pakistan	04.04.1970	sajidnm@hotmail.com
Dr. Farhana Riaz	Assistant Professor	Ph. D	Pakistan	25.07.1972	Farhana_ahmer@yahoo.com
Dr. Amjad Rashid Kiyani	Assistant Professor	Ph. D	UK	28-3-1966	ark120106@yahoo.co.uk
Dr. Muhammad Mushtaq	Assistant Professor	Ph. D	Pakistan	10.12.1970	mushtaq@uaar.edu.pk
Dr. M. Zubair Anjum	Assistant Professor	Ph. D	Austria	9-3-1978	zubair.anjum@uaar.edu.pk
Dr. Abida Arshad	Assistant Professor	Ph. D	China	23-3-1977	Abida.arshad6@gmail.com
Dr. Ruqia Mehmood Baig	Lecturer	Ph. D	Pakistan	7-8-1983	Dr.ruqia@uaar.edu.pk
Mr. Muhammad Irfan	Lecturer	Ph. D. student	Pakistan	16.02.1984	Muhammadirfan11@gmail.com

Table.4.7 Faculty Distribution by Program Areas in Zoology/Biology

Program area of specialization	Courses in the area and average number sections per year	Number of faculty members in each area	Number of faculty with Ph. D degree
Microbiology/Parasitology	7	2	2
Wildlife	6	2	2
Biodiversity	2	1	-
Reproductive physiology	2	1	1
Endocrinology	2	1	-
Fisheries	2	1	1
Genetics	3	2	2

STANDARD 6.2: EFFECTIVE PROGRAMS FOR FACULTY DEVELOPMENT

1. Professional training and availability of adequate research and academic facilities are not provided according to the faculty members
2. Library facility is not available in the department

STANDARD-6.3: FACULTY MEMBER MOTIVATION

- Time to time provision of enthusiasm to the young faculty by the senior faculty members.

SECTION-7

CRITERION-7: INSTITUTIONAL FACILITIES

INSTITUTIONAL FACILITIES

The institution must have the infrastructure to support new trends in learning

- University research grant to department and laboratories for practical and research activity is not sufficient.
- Research grant should be provided to department s per student per .annum/ semester.
- Insufficient facilities regarding the infrastructure to support new trends in learning or prevalent.

The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personal.

- Insufficient offices for staff.
- Recommended books, relevant journals of the programs are not available to the students.
- However, this aspect needs to be strengthening of discipline.

Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities.

STANDARD-7.1: INFRASTRUCTURE

The faculty doesn't have computers to access internet and to e-library which is very helpful for the high quality education and producing research of international standard.

The department has the following shortcomings/problems:

- Majority of the faculty members do not have access to the PCs as department have only one computers provided by the university and three are by projects and HEC scholars.
- Telephone sets/connections are not present.

STANDARD-7.2: LIBRARY FACILITIES

The university Central Library has very limited number of books, journals and periodicals. It's a small library in term of space and facilities with no catalogue systems. It does not meet the standards of a university library. Department itself does not have a library.

STANDARD-7.3: CLASS ROOM AND FACULTY OFFICES

Two class rooms are available without any multimedia. Two to three teachers are sharing rooms. Common room for students is also missing. No heater and air conditioner is installed in class rooms, labs and offices.

SECTION-8

CRITERION-8: INSTITUTIONAL SUPPORT

The university administration is trying to provide all the possible facilities to the departments and has been struggling hard for the up gradation of departments and establishing new faculties and institutes. The university is also trying to attract highly qualified faculty.

INTSTITUTIONAL SUPPORT:

- Faculty offices are inadequate and therefore two or three teachers have one office. The department at present avails all the human resources assigned

STANDARD-8-1: SUPPORT AND FINANCIAL RESOURCES

The department has limited funds and Individual research grants for students and faculty are insufficient to support the departmental research activities. There is a dire need for increasing the financial resources allocated to the department to establish a library, animal house, laboratories and computer facilities

STANDARD-8-2: HIGH QUALITY RESEARCH SCHOLARS

Research Assistants	Ph.D. Students
3	23

Faculty to Ph.D. student's ratio is 1:1.1

STANDARD-8-3: FINANCIAL RESOURCES

Total budget of the department of Zoology and Biology does not fulfills the departmental needs particularly for the purchase of equipment, chemicals etc.

SUMMARY

The Department of Zoology at PMAS-Arid Agriculture University, Rawalpindi was established in 1996. However, M. Phil. programme was started in 2006. The admissions are offered on merit and students have to fulfill certain prerequisite criteria for admission in M. Phil. program. The programs tend to impart basic knowledge of classical as well as modern Zoology. Moreover, M. Phil. programme gives the opportunity to specialize in one or more areas of particular interest. Graduates get equipped with key concepts of modern Zoology, and get aware of the scope and limitations of the subject. Graduates acquire a general biological and scientific background as well as gain experience in problem solving and develop the communication, numerical and computer skills required for a wide range of careers. In order to assess whether department is fulfilling its objectives or not, surveys on various aspects such as course evaluation, teacher evaluation, alumni survey, research/graduating students surveys and faculty survey etc. have been conducted by the departmental members of the program team and via CMS also. The data were collected on prescribed proformae and later on analyzed and presented in the form of graphs and tables. The data revealed that students are satisfied with the subject approach of faculty members, their fairness in examination, and level of knowledge. Course evaluation survey showed that students are satisfied with workload and value of knowledge provided to them. According to research student survey, access to various scientific journals is limited. Similarly, department has limited budget for research purposes which cannot support laboratories and research activities. The performance of the department may be further improved considering; a) Laboratory needs new equipments, b) Faculty members have pointed that in their workload research students (no. of M. Phil students) should also be considered, c) The budget allocated to the department does not meet the requirements of the research, e) At present there is no departmental library. Allocation of sufficient funds for this purpose will be helpful in subscribing reputed journals and purchase of books that will ultimately boost quality of learning, teaching and research, f) Animal house is required to house the experimental animals during the research.

COURSES OFFERED

M. Phil Zoology

Course #	Course Title	Credit Hours
ZOOL-713	Clinical Bacteriology	3(2-2)
ZOOL-734	Mammalogy	3(2-2)
ZOOL-725	Human Genetics	3(2-2)
ZOOL-720	Seminar-I	1(1-0)
BIOL-724	Conservation Biology	3(2-2)
BCH-732	Medical Nutrition Therapy	3(2-2)
BCH-734	Numerical Problems in Biochemistry	3(3-0)
BCH-735	Principles of Advanced Biochemical Techniques	3(3-0)
BIOL-725	Animal Reproductive Biology	3(2-2)
ZOOL-714	Medical Virology	3(2-2)
ZOOL-718	Applied Reproductive Physiology	3(2-2)
ZOOL-733	Ornithology	3(2-2)
ZOOL-715	Faunal Biodiversity of Pakistan	3(2-2)
ZOOL-712	Clinical Endocrinology	3(2-2)
ZOOL-719	Special Problem	1(1-0)
ZOOL-720	Seminar-II	1(1-0)
STAT-701	Experimental Statistics	3(3-0)
BCH-731	Advances in Biochemistry	3(3-0)
BCH-708	Human Physiology	3(2-2)
BCH-721	Environmental Biochemistry	3(2-2)
BCH-736	Proteomics	3(2-2)
BIOL-722	Host Parasite Interactions in Animals	3(2-2)
BIOL-723	Immunology	3(2-2)

FACULTY RESUMES

1. CURRICULUM VITAE

1. Personal Data

Name: Dr. Shamim Akhtar

Present Address: Associate Professor,
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Telephone:

E-mail sashraf1993@gmail.com

2. Academic Qualification

1. Ph.D. (Zoology)	University of Arid Agriculture, Rawalpindi	2006
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2	M.Phil. (Zoology)	University of Agriculture, Faisalabad.	1991
3	M.Sc. (Zoology)	University of Agriculture, Faisalabad.	1987
4	B.Sc (Zool, Bot, Chem)	University of the Punjab, Lahore	1985
	Post Doctoral Fellowship :	Commonwealth Post Doctoral Fellowship at “The Royal Veterinary College, University of London, UK. 2009	

3. Area of Specialization: Reproductive Physiology

4. HEC approved supervisor

5. Professional Experience (Research and Teaching): 15 years

6. Fellowship/Membership of Professional Associations/Societies: 02

7. Research Projects; Completed=06; ongoing=01

8. Participation in Conferences/Workshops: 20

9. Supervision of Post-Graduate Theses: a) Ph.D.:1; b) M.Phil.: 23; M.Sc. 20.

10: International collaborations = Three institutes/universities

11. Publications

Papers Published in Peer Reviewed Journals: 117

Publications during reported period

1. Ansari, M. S., B. A. Rakha, S. M.H. Andrabi, N.Ullah, R. Iqbal, W. V. Holt, **Shamim 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. (Impact factor: 1.222)
2. **Shamim Akhter**, M. S. Ansari, B. A. Rakha, N. Ullah, S. M. H. Andrabi and M. Khalid. 2012. In vitro evaluation of liquid-stored buffalo semen at 5°C diluted in soya lecithin based extender (Bioxcell®), tris-citric egg yolk, skim milk and egg yolk-citrate extenders. Reproduction in Domestic Animals, 46(1): 45-49. (Impact factor: 1.392)
3. **Shamim Akhter**, M. S. Ansari, S. M. H. Andrabi, B. A. Rakha, N. Ullah, M. Khalid. 2011. Soya-lecithin in extender improves the freezability and fertility of buffalo (*Bubalus bubalis*) bull spermatozoa. Reproduction in Domestic Animals, 47: 815-819. (Impact factor: 1.392)

4. **Shamim Akhter**, M. S. Ansari, B. A. Rakha, S. M. H. Andrabi, N. Ullah and M. Khalid. 2011. Effect of low density lipoproteins in extender on freezability and fertility of buffalo (*Bubalus bubalis*) bull semen. *Theriogenology*, 76(4): 759-764. (*Impact Factor: 2.082*)
5. Ansari, M. S., B. A. Rakha, S. M. H. Andrabi and **Shamim Akhter**. 2011. Effect of straw size and thawing time on quality of cryopreserved buffalo (*Bubalus bubalis*) semen. *Reproductive Biology*, 11(1): 49-54. (*Impact factor: 1.222*)
6. **Shamim Akhter**, M. S. Ansari, B. A. Rakha, S. M. H. Andrabi and N. Ullah. 2010. Cryopreservation of buffalo (*Bubalus bubalis*) semen in Bioxcell[®] extender. *Theriogenology*, 74: 951-955. (*Impact Factor: 2.082*)
7. Ansari, M. S., B. A. Rakha, N. Ullah, S. M. H. Andrabi, S. Iqbal, M. Khalid and **Shamim Akhter**. 2010. Effect of exogenous glutathione in extender on the freezability of Nili-Ravi buffalo (*Bubalus bubalis*) bull spermatozoa. *Animal Science Papers and Reports*, 28: 235-244. (*Impact factor: 0.918*)
8. Ansari, M. S., B. A. Rakha and **Shamim Akhter**. 2011. Effect of L-cysteine in extender on post-thaw quality of Sahiwal bull semen. *Animal Science Papers and Reports*, 29: 197-203. (*Impact factor: 0.918*)
9. Ansari, M. S., B. A. Rakha, S. M. H. Andrabi and **Shamim Akhter**. 2010. Usefulness of powdered and fresh egg yolk for cryopreservation of Zebu bull spermatozoa. *Reproductive Biology*, 10(3): 235-240. (*Impact factor: 1.222*)
10. **Shamim Akhter**, B. A. Rakha, M. S. Ansari. 2010. Comparison of egg yolks from three avian species in extender for cryopreservation of Sahiwal bull epididymal spermatozoa. *Animal Science Papers and Reports*, 29: 131-138 (*Impact factor: 0.918*)
11. Batool, K. Mehboob, S. Qadeer, M. S. Ansari, B. A. Rakha, N. Ullah, S. M. H. Andrabi, **Shamim Akhter**. 2012. Effect of α -tocopherol acetate and ascorbic acid in extender on quality of Zebu bull spermatozoa. *Pakistan Journal of Zoology*, 44 (6): 1487-1491. (*Impact Factor: 0.309*)
12. N. A. Qureshi, M. S. Ansari, **Shamim Akhter**, A. A. Khan, I. Hussain and B. A. Rakha. 2012. Feeding Habits of Common Quail (*Coturnix coturnix*) migrating through Rawalpindi, Pakistan. *Pakistan Journal of Zoology*, 44 (6): 1760-1762. (*Impact Factor: 0.309*)
13. Mehmood, A., M. S. Ansari, **Shamim Akhter**, A. A. Khan, I. Hussain, Shams-ul-Hassan, T. Z. Qureshi and B. A. Rakha. 2012. Occurrence of Pathogenic bacteria in small mammals-inhabiting

poultry farms of Rawalpindi/Islamabad, Pakistan. Pakistan Journal of Zoology, 44(4): 1185-1187. (Impact Factor: 0.309)

- 14.** Mehmood, A., M. S. Ansari, T. Hussain, **Shamim Akhter**, S. A. Khan, S. Hassan, A. A. Khan and B. A. Rakha. 2012. Common shrew (*Suncus murinus*): A potential reservoir of pathogenic bacteria at poultry farms, Rawalpindi, Pakistan. Pakistan Journal of Zoology, 44(3): 879-880. (Impact Factor: 0.309)
- 15.** Atiq, N., N. Ullah, S. M. H. Andrabi and **Shamim Akhter**. 2011. Comparison of Photometer with Improved Neubauer Hemocytometer and Makler Counting Chamber for Sperm Concentration Measurement in Cattle. Pak Vet J, 31(1): 83-84. (Impact Factor: 1.365)
- 16.** Ansari M. S., B. A. Rakha, **Shamim Akhter**. 2011. Effect of butylated hydroxytoluene in extender on motility, plasmalemma and viability of Sahiwal Bull Spermatozoa. Pakistan Journal of Zoology, 43: 311-314. (Impact Factor: 0.309)
- 17.** Ansari, M. S., B. A. Rakha, N. Ullah, S. M. H. Andrabi and **Shamim Akhter**. 2011. Glutathione addition in *tris*-egg yolk extender improves the quality of cooled buffalo (*Bubalus bubalis*) bull semen. Pakistan Journal of Zoology, 43: 46-55. (Impact Factor: 0.309)
- 18.** Ansari, M. S., B. A. Rakha, N. Ullah, S. M. H. Andrabi, M. Khalid and **Shamim Akhter**. 2011. Effect of L-cysteine in *tris*-citric egg yolk extender on post thaw quality of Nili-Ravi buffalo (*Bubals bubalis*) bull spermatozoa. Pakistan Journal of Zoology, 43: 41-47. (Impact Factor: 0.309)
- 19.** **Shamim Akhter**, B. A. Rakha, M. S. Ansari, S. M. H. Andrabi and N. Ullah. 2011. Effect of glucose supplementation in skim milk diluter on motility, plasma membrane and acrosomal integrity of Nili-Ravi buffalo bull spermatozoa stored at 5°C. Pakistan Journal of Zoology, 43(1): 291-294. (Impact Factor: 0.309)
- 20.** **Shamim Akhter**, B. A. Rakha, M. S. Ansari, S. M. H. Andrabi and N. Ullah. 2011. Storage of Nili-Ravi Buffalo (*Bubalus bubalis*) Semen in Skim Milk Extender Supplemented with Ascorbic Acid and α -Tocopherol. Pakistan Journal of Zoology, 43(1): 273-277. (Impact Factor: 0.309)
- 21.** Mehmood, A., M. S. Ansari, T. Hussain, **Shamim Akhter**, S. A. Khan, S. Hassan, A. A. Khan and B. A. Rakha. 2011. Bandicoot rat (*Bandicota bengalensis*): A novel reservoir of pathogenic bacteria at poultry farms, Rawalpindi/Islamabad, Pakistan. Pakistan Journal of Zoology, 43(1): 201-202. (Impact Factor: 0.309)
- 22.** **Shamim Akhter**, M. S. Ansari, B. A. Rakha, S. M. H. Andrabi M. Anwar and N. Ullah. 2010. Effect of fructose addition in skim milk extender on the quality of liquid Nili-Ravi buffalo (*Bubalus bubalis*) semen. Pakistan Journal of Zoology, 42: 227-231. (Impact Factor: 0.309)

- 23.** Begum I, A Azim, S Akhter, MI Anjum and M Afzal, 2010. Mineral dynamics of blood and milk in dairy buffaloes fed on calcium and phosphorus supplementation. Pakistan Veterinary Journal, 30(2): 105-109. (*Impact Factor: 1.365*)
- 24.** Ansari, M. S., B. A. Rakha, S. M. H. Andrabi, N. Ullah and **Shamim Akhter**. 2010. Cryopreservation of Sahiwal bull epididymal spermatozoa. Pakistan Journal of Zoology, 42: 241-243. (*Impact Factor: 0.309*)

2. CURRICULUM VITAE

1. Personal Data

Name: Dr. Muhammad Mushtaq

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E-mail mushtaq@uaar.edu.pk,

2. Academic Qualification

Ph. D.	2009	Zoology (Rodent Pest Management) PMAS Arid Agriculture University, Rawalpindi
M. Sc.	1995	Zoology (Specialization in Entomology) Punjab University, Lahore
B. Sc.	1991	Zoology, Botany, Psychology Punjab University, Lahore

3. Area of Specialization: Integrated Pest Management

4. HEC approved supervisor

5. Professional Experience (Research and Teaching): 18 years

6. Fellowship/Membership of Professional Associations/Societies: 02

7. Research Projects; Completed=01; ongoing=01

8. Participation in Conferences/Workshops: 10

9. Supervision of Post-Graduate Theses: M.Phil.: 4.

10. Publications

Papers Published in Peer Reviewed Journals:

06

Publications during reported period (2010-2012)

1. **Mushtaq, M.**, I. Hussain and A. Mian. **2012**. Effectiveness of Groundnut – Maize Bait as Carrier of Coumatetralyl Against Indian Crested Porcupine, *Hystrix indica* Kerr. **Pakistan J. Zool.**, 44(2): 579 – 581. (IF = **0.309**)
2. Anwar, M. B., M. S. Nadeem, S. I., Shah, A. R. Kayani and **M. Mushtaq**. **2012**. A Note on the Diet of Indian Wolf (*Canis lupus*) in Baltistan, Pakistan. **Pakistan J. Zool.**, 44(2): 588 – 591. (IF = **0.309**).
3. **Mushtaq, M.**, A. Mian, I. Hussain, S. Munir, I. Ahmed and A. A. Khan. **2010**. Field evaluation of different fresh food baits against Indian crested porcupine, *Hystrix indica*. **Pakistan J. Zool.**, 42(5): 507 – 513. (IF = **0.309**)

3. CURRICULUM VITAE

1. Personal Data

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Department of Zoology, Pir Mehr Ali Shah Arid Agriculture University,
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2. Academic Qualification

Year	Degree/Diploma	Institute
2007	Ph.D (Zoology)	University of Arid Agriculture, Rawalpindi-Pakistan
1996	M.Sc.(Zoology)	Punjab University, Lahore-Pakistan
1994	B.Sc. (Pre-medical)	Punjab University, Lahore-Pakistan

3. Area of Specialization: Parasitology

4. HEC approved supervisor

5. Professional Experience (Research and Teaching): 06 years

6. Fellowship/Membership of Professional Associations/Societies: 02

7. Research Projects; Completed=02; On-going =01

8. Participation in Conferences/Workshops: 10

9. Supervision of Post-Graduate Theses: M.Phil.: 18.

10. Publications

Papers Published in Peer Reviewed Journals: 04

Publications during reported period (2010-2012)

1. Rubaba, M. Inam, M. Ismail and **F. R. Chaudhry**. (2012). Group 10 allergens (tropomyosin) from house dust mites may cause covariation of sensitization to allergens from other invertebrates. European Journal of Allergy and Clinical Immunology.

4. CURRICULUM VITAE

1. Personal Data

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2. Academic Qualification

- Ph. D. in Zoology from University of the Punjab, specializing in wildlife. (Year 2005)
Thesis: Ecology of Houbara Bustard (*Chlamydotis undulata macqueenii*) in Punjab Nag Valley (Balochistan) and Uzbekistan.
- Master of Science in Zoology from University of The Punjab, specializing in wildlife research and fieldwork (year 1994).
Thesis: Behavioural patterns of Blue Peafowl (*Pavo cristatus*) in Changa Manga Wildlife Sanctuary.

- Bachelor of Science with Botany, Geography and Zoology from Islamia University Bahawalpur. (Year 1990)

3. Area of Specialization: Wildlife / ecology / conservation

4. HEC approved supervisor

5. Professional Experience (Research and Teaching): 15 years

6. Fellowship/Membership of Professional Associations/Societies: 05

7. Research Projects; Completed=02; ongoing=01

8. Participation in Conferences/Workshops: 22

9. Supervision of Post-Graduate Theses: a) Ph.D.:2; b)M.Phil.: 14.

10. Publications

- | | |
|--|----|
| a. Papers Published in Peer Reviewed Journals: | 50 |
| b. Books / proceedings: | 02 |
| c. Research/Technical Reports (Unpublished): | 13 |

Publications during reported period (2010-2012)

- 1) Anwar, M.B; Jackson, R; **Nadeem, M. S**; Janečka, J. E; Hussain, S; Beg, M. A; Muhammad, G. and Qayyum, M. 2011. Food Habits of Snow Leopard *Panthera unica* (Schreber, 1775) in Baltistan, Northern Pakistan. *European Journal of Wildlife Research*. 57 (5): 1077-1083.
- 2) **Nadeem, M. S**; Imran, S. M. K; Mahmood, T; Kayani, A. R; and Shah, S. I. 2012. A Comparative Study of the Diets of Barn Owl (*Tyto alba*) and Spotted Owlet (*Athene brama*) Inhabiting Ahmadpur East, Southern Punjab, Pakistan. *Animal Biology*, 62(1): 13-28.
- 3) Mahmood-ul-Hassan, M; Javid, A; **Nadeem, M. S**; and Ashraf, S. 2012. An extralimital record of the Egyptian tomb bat *Taphozous perforatus* from Pakistan. *Mammalia*, 76(2):227-229.
- 4) **Nadeem, M. S**; Naz, R; Shah, S. I; Beg, M. A; Kayani, A. R; Mushtaq, M; and Mahmood, T. 2012. Season and locality related changes in the diet of Asiatic jackal (*Canis aureus*) in Potohar, Pakistan. *Turk. J. Zool.* 36(6):798-805.
- 5) Mahmood, S; Mahmood, T; Rais, M; Qureshi, I. Z; and **Nadeem, M. S**. 2010. A comparative study on the populations and habitats of the Grey Francolin *Francolinus pondicerianus* and Black Francolin *Francolinus francolinus* in Lehri Nature Park, Punjab, Pakistan. *Podoces* 5(1):42-53.
- 6) **Nadeem, M. S**; Mahmood, T; and Asif, M; 2010. Wintering Population of Houbara Bustard in Punjab, Pakistan (2002-2003). *Berkut*. Vol. 19 (1):133-140.
- 7) Bilal, S; Rais, M; Anwar, M; Mahmood, T; Hussain, I; and **Nadeem, M. S**. 2011. Trends in the diversity of migratory ducks at Rawal Lake, Islamabad. *Berkut*. Vol. 20 (2):65-69.

- 8) Beg, M. A; Mushtaq-ul-Hassan, M; Durr-i-Shahwar, and **Nadeem, M. S.** 2010. The Dynamics of Rats and Mice Populations Inhabiting Wheat-Sugarcane based croplands in Central Punjab (Pakistan). *Pak. J. Zool.* 42(3):311-323.
- 9) Mahmood, T; Hussain, I; and **Nadeem, M. S.** 2011. Population estimate, Habitat preference and the diet of Small Indian Mongoose (*Herpestes javanicus*) in Potohar Plateau, Pakistan. *Pak. J. Zool.* 43(1):103-111.
- 10) **Nadeem, M. S;** Mahmood, T; Asif, M; and Mahmood-ul-Hassan, M. 2011. Annual Reproductive Success of the Hoopoe Lark *Alaemon alaudipes* in Nag Valley (1999-2001), Kharan, Pakistan. *Pak. J. Zool.* 43(2):279-284.
- 11) Anwar, M. B; **Nadeem, M. S;** Kayani, A. R; and Qayyum, M. 2011. Is mammalian hair fiber analysis by optical fiber diameter analyzer (OFDA) helpful to identify prey in scats of carnivores? *Pak. J. Zool.* 43(6): 1218-1220.
- 12) Mahmood, T; Shah, S.M.A; Rais, M; **Nadeem, M.S.** 2011. An investigation of animal species trade at pet shops of Rawalpindi and Multan cities. *J. Anim. Plant Sci.* 21(4): 822-829.
- 13) Anwar, M. B; **Nadeem, M. S;** Shah, S.I; Kayani, A. R; and Mushtaq, M. 2012. A Note on the diet of Indian Wolf (*Canis lupus*) in Baltistan, Pakistan. *Pak. J. Zool.* 44(2):588-591.
- 14) Mahmood, T; Hussain, R; Rais, M; Hussain, I; and **Nadeem, M.S.** 2012. Habitat analysis and population estimates of three falcon species, Red-headed Merlin (*Falco chicquera*), Common Kestrel (*Falco tinnunculus*) and Saker Falcon (*Falco cherrug*), inhabiting District Chakwal, Pakistan. *Pak. J. Zool.* 44(3):787-798.
- 15) Anwar, M. B; **Nadeem, M. S;** Beg, M.A; Kayani, A. R; and Muhammad, G. 2012. A Photographic Key for the Identification of Mammalian Hairs of Prey Species in Snow Leopard (*Panthera uncia*) Habitats of Gilgit-Baltistan Province of Pakistan. *Pak. J. Zool.* 44(3):737-743.
- 16) Mahmood, T; Siddiq, M. K; Rais, M; and **Nadeem, M. S.** 2012. Distribution and Relative Abundance of Freshwater Turtles in Korang River Islamabad- Rawalpindi, Pakistan. *Pak. J. Zool.* 44(3):889-893.
- 17) Javid, A; Mahmood-ul-Hassan, M; **Nadeem, M. S;** Rana, N; and Khan, N. 2012. First record of the Lesser Mouse-tailed Bat *Rhinopoma hardwickii* (Rhinopomatidae:Chiroptera) from southern Punjab, Pakistan. *J. Anim. Plant Sci.* 22 (2):278-282.
- 18) Mahmood, T; Hussain, R; Irshad, N; Akrim, F; and **Nadeem, M. S.** 2012. Illegal mass killing of Indian Pangolin (*Manis crassicaudata*) in Potohar Region, Pakistan. *Pak. J. Zool.* 44(5):1457-1461.

- 19) Mirza, Z.S; **Nadeem, M. S**; Mirza, M. A; and Qayyum. 2012. Population status and biological characteristics of Common Carp *Cyprinus carpio* in Mangla Reservoir. *J. Anim. Plant Sci.* 22 (4):933-938.
- 20) Javid, A; Mahmood-ul-Hassan, M; Afzal, M; **Nadeem, M. S**; Hussain, S. M. 2012. Recent record of least pipistrelle (*pipistrellus tenuis*) (vespertilionidae: chiroptera) from Islamabad. *J. Anim. Plant Sci.* 22 (4):1042-1047.

5. CURRICULUM VITAE

1. Personal Data

Name: Dr. Amjad Rashid Kayani

Present Address: Assistant Professor,
Department of Zoology, Pir Mehr Ali Shah Arid Agriculture University,
Murree road, Rawalpindi, Pakistan.

Telephone 0332- 5268134

E-mail ark120106@yahoo.co.uk

2. Academic Qualification

- **Ph.D.** (Zoology) 2006 The University of Reading, UK
- **M.Sc.** (Zoology) 1988 University of Agriculture, Faisalabad
(Marks obtained 751 out of 920; 83%; **Ist Div.; CGPA 3.93**)
- **B.Sc.** (Zoology, Botany & Geography) 1985 Govt. Postgraduate College Jhelum,
The University of Punjab, Lahore
(Marks obtained 496 out of 800; 62%; **Ist Div.**)

3. Area of Specialization: Animal and reproductive ecology

4. HEC approved supervisor

5. Professional Experience (Research and Teaching): 23 years

6. Fellowship/Membership of Professional Associations/Societies: 03

7. Research Projects; Completed=01; ongoing=01

8. Participation in Conferences/Workshops: 08

9. Supervision of Post-Graduate Theses: a) Ph.D.:2 (in progress); b) M.Phil.: 08.

10. Publications

Papers Published in Peer Reviewed Journals:

10

Publications during reported period (2010-2012)

- 1) **Nadeem, M. S**; Imran, S. M. K; Mahmood, T; Kayani, A. R; and Shah, S. I. 2012. A Comparative Study of the Diets of Barn Owl (*Tyto alba*) and Spotted Owlet (*Athene brama*) Inhabiting Ahmadpur East, Southern Punjab, Pakistan. *Animal Biology*, 62(1): 13-28.
- 2) **Nadeem, M. S**; Naz, R; Shah, S. I; Beg, M. A; Kayani, A. R; Mushtaq, M; and Mahmood, T. 2012. Season and locality related changes in the diet of Asiatic jackal (*Canis aureus*) in Potohar, Pakistan. *Turk. J. Zool.* 36(6):798-805.
- 3) Anwar, M. B; **Nadeem, M. S**; Kayani, A. R; and Qayyum, M. 2011. Is mammalian hair fiber analysis by optical fiber diameter analyzer (OFDA) helpful to identify prey in scats of carnivores? *Pak. J. Zool.* 43(6): 1218-1220.
- 4) Anwar, M. B; **Nadeem, M. S**; Shah, S.I; Kayani, A. R; and Mushtaq, M. 2012. A Note on the diet of Indian Wolf (*Canis lupus*) in Baltistan, Pakistan. *Pak. J. Zool.* 44(2):588-591.
- 5) Anwar, M. B; **Nadeem, M. S**; Beg, M.A; Kayani, A. R; and Muhammad, G. 2012. A Photographic Key for the Identification of Mammalian Hairs of Prey Species in Snow Leopard (*Panthera uncia*) Habitats of Gilgit-Baltistan Province of Pakistan. *Pak. J. Zool.* 44(3):737-743.

ABIDA ARSHAD

PERSONAL PROFILE

Current Status: Assistant Professor

Husband's Name: Muhammad Arshad

Date of Birth: March 23, 1977

Current Address: Department of Biology, PMAS-Arid Agriculture University Rawalpindi, Pakistan.

Contact No.: 0092-3334191470

Email Address: abida.arshad6@gmail.com

EDUCATIONAL QUALIFICATION

Degree	Session	Institutes	Marks Obtained/Total Marks	Major Subject(s)
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PhD	2008-2012	Beijing Institute of Technology Beijing, China	519/600 First Class Marks 87%	Biosciences (Biochemical Engineering)
M.Sc.	1998-2000	Department of Zoology, University of the Punjab Lahore, Pakistan	807/1200 First Class Marks 67%	Zoology
B.Ed	2001-2002	Allama Iqbal Open University, Islamabad	570/900 First Class Marks 63%	Education
B.Sc.	1996-1998	Government College for women Mianwali, University of the Punjab Lahore, Pakistan	495/800 First Class Marks 61%	Zoology, Botany, Chemistry
H.S.S.C	1994-1996	Government College for women S/town Rawalpindi, Rawalpindi Board	740/1100 First Class Marks 67%	Biology, Physics, Chemistry
S.S.C	1992-1994	Govt. Girls High School Iskanderabad (Mianwali). Sargodha Board	686/850 First Class Marks 81%	Biology, Maths, Physics, Chemistry

RESEARCH PUBLICATIONS

International Publications

1. Abida Arshad, Xuechai Chen, Zhenzhen Cong, Hong Qing, and Yulin Deng. TRPC1 protects dopaminergic SH-SY5Y cells from MPP1, salsolinol, and N-methyl-(R)-salsolinol-induced

- cytotoxicity. *Acta Biochimica et Biophysica sinica (Oxford Journal)* 2013. DOI: 10.1093/ab/s/gmt127.
2. Abida Arshad, Xiaofeng Gu, and Muhammad Arshad. RNF13 protein regulates endoplasmic reticulum stress induced apoptosis in dopaminergic SH-SY5Y cells by enhancing IRE1a stability. *Journal of receptor and signal transduction* 2013. DOI:10.3109/10799893.2013.863920.
 3. Zhengxin Ying, Fankai Lin, Weihong Gu, Yang Su, Abida Arshad, Hong Qing, Yulin Deng. Alpha-synuclein increases U251 cells vulnerability to Hydrogen Peroxide by Disrupting Calcium Homeostasis. *J Neural Transm* 2011. 118:1165-1172.
 4. Chen Xue Chai, Wang Rui, Abida Arshad, Yu-Lin Deng. *Pictet-Spenglerases* and their related biological properties. *Chemistry* 2010. 2011-03.
 5. Xue-Chai Chen, Abida Arshad, Hong Qing, Rui Wang, Jian-Qing Lu, Yu-Lin Deng. Enzymatic condensation of dopamine and acetaldehyde: a salsolinol synthase from rat brain. *Biologia* 2011 (66)6: 1183-1188.
 6. Abida Arshad Xue-Chai Chen, Yi Chen, Sheng-Ping Dai, Yu-Lin Deng. Characterization of salsolinol synthase from rat brain. *IEEE/ICME International Conference on Complex Medical Engineering-CME2011*.
 7. Xue-Chai Chen, Abida Arshad, Xiaoyin Lin, Yi Chen, Jin Shen, Yongqian Zhang, Yu-Lin Deng. Preliminary purification of salsolinol synthase from rat brain. *IEEE/ICME International Conference on Complex Medical Engineering-CME2011*.
 8. *In silico analysis of mutations in PITX3 gene*. 2014 The 8th International Conference on Systems Biology (ISB) 978-1-4799-7294-4/14/\$31.00 ©2014 IEEE

National Publications

9. Hazrat Hussain, Abida Arshad, Ijaz Ali, Muhammad Arshad, Muhammad Saad Ahmed, Mukhtar Alam, Ahmad ur Rehman Saljoqi, Aqeel Javed, Naeem ud Din Ahmad, Zahoor Ahmad Swati. Evaluation of Genetic Diversity in Peafowl Color Mutants. *Science International* 2012. 25(1), 107-110.
10. Arshad, M., Abida Arshad, Rauf, A., Murtaza, G., Akhtar, M., and Nayyer, A.Q. "Dental Morphological Studies of *Cormohipparion theobaldi*". *Science International* 2003. 15(2): 157-160.
11. Abida Arshad, Arshad M, Pervaiz R, Farzana, Javed A, Ahmad NUD, Ali I, Saljoqi AUR. Prevalence of active Hepatitis C infection in the general population of District Mardan, KPK, Pakistan. *J Pub Health Biol Sci*. 2012; 1(1):3-8.
12. Abida Arshad, Habib Ullah Khan, Farzana, Mehwish Saba Aslam, Tayyab Rehman, Muhammad Arshad,*Muhammad Saad Ahmed, Ijaz Ali and Ahmad Ur Rehman Saljoqi "Seropositivity and Active HCV Infection in Patients from Peshawar Division of Khyber Pakhtunkhwa Province, Pakistan.
13. Abida Arshad, Khaleeq-Uz-Zaman, Ijaz Ali, 4Muhammad Arshad, Muhammad Saad Ahmed 5Mukhtar Alam, Ahmad ur Rehman Saljoqi, Aqeel Javed, Naeemud Din Ahmadan Zahoor Ahmad Swati "Development of Duplex PCR Assay for the Detection of Mycoplasma Gallisepticum and Mycoplasma Synoviae Prevalence in Pakistan.
14. Usman Waheed, Abida Arshad, Muhammad Arshad Malik, Hasan Abbas Zaheer "The Evolution of Medical Laboratory Technology in Pakistan.

1.

TEACHING EXPERIENCE

1. Assistant Professor Biology, Arid Agriculture University Rawalpindi
After completion of PhD, joined Department of Biology at PMAS-AAUR since October 2012 till date. Engaged in teaching Neurobiology and Neurochemistry, and Human Genetics to M.Phil students. Also involved in laboratory practicals at M.Phil Level. Currently supervising 2 M.Phil students in their research work.
2. Principal Muhammadan Educomplex
I have worked as owner and Principal at Muhammadan Educomplex Chah Kalalan wala (Kasur) October 2004 - August 2008. Job description included teaching Biology, Physics and Chemistry to SSC classes and to deal with all academic and administrative affairs of this private secondary institute.
3. Lecturer at Pakistan International School Taif, Kingdom of Saudi Arabia
I worked as lecturer Biology at Pakistan International School Taif, Saudi Arabia during the period of Sep. 2003-Sep. 2004. I taught Biology to SSC and HSSC classes.
4. Teaching Experience at DPS Khushab:
I worked as a science teacher at District Public School Khushab (Jauharabad) from Dec. 2000 to Feb. 2003. I used to teach Science and Mathematics at elementary level.

SCHOLARSHIPS AND AWARDS

1. Higher Education Commission Partial Support Award for PhD Studies 2011.
2. China Scholarship Council PhD Award, 2008-2012.
3. President Talent Farming Scheme Award for M.Sc. 1998- 2000.
4. Merit Scholarship for Matric (S.S.C.) Sargodha Board, 1995-1996.

RESEARCH PROJECTS

1. Received an HEC research grant of amount Rs. 0.5 Million for Project “Investigating the potential genetic risk factors for Parkinson’s Disease in Pakistani Population”.
2. Completed a project with a proposal entitled “Purification and Characterization of Salsolinol synthase” by China Science Foundation worth 85,000 Chinese RMB during 2009-2011.
3. Completed a project name with proposal entitled “Cytoprotective Role of TRPC1 protein in endogenous neurotoxins based neurotoxicity” of worth 50,000 Chinese RMB funded by National Natural Science Foundation of China 2008-2010.

SUBJECTS STUDIED DURING Ph.D.

Biotechnology, Biology Analysis, Chemical Engineering and Technology Preview, Chemical Experiments, Chinese Language, Chinese Culture.

SUBJECTS STUDIED DURING M.Sc.

Cell Biology, Biochemistry, Genetics, Developmental Biology, Biostatistics, Animal Physiology, Environmental Biology, Evolution and Taxonomy, Wild Life, Mammology, Evolutionary Biology, Zoogeography and Paleontology.

REFERENCES

1. Professor Yulin Deng, Dean and Chairman, School of Life Sciences, Beijing Institute of Technology Beijing China. deng@bit.edu.cn

2. Prof. Dr. Muhammad Akhtar, Chairman, Department of Zoology, University of the Punjab Lahore, Pakistan. 54590. E-mail: drakhtar@drc.zool@pu.edu.pk
3. Prof. Dr. Nadeem Abbasi, Chairman Horticulture Department, PMAS-Arid Agriculture University Rawalpindi, Pakistan. nadeem.abbasi@uaar.edu.pk

Muhammad Sajid Nadeem

Personal Profile

Personal Information

Name: Muhammad Sajid Nadeem
 Father's Name: Abdul Majeed
 Date of birth: 04-04-1970
 Domicile: Bahawalnagar (Punjab)
 Marital Status: Married
 Postal Address: a) Zoology Department
 Pir Mehr Ali Shah, Arid Agriculture
 University, Murree Road, Rawalpindi, Pakistan.
 b) H#07, ST#23, Block-H, Soan Garden, Islamabad
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 b) Chak No. 169/M P.O. Dahranwala,
 Tehsil Chishtian District Bahawalnagar
 Punjab, Pakistan
 Cell: 0300-8539455
 E-mail: sajidnm@uaar.edu.pk sajidaaur@gmail.com

Academic Qualification

- Ph. D. in Zoology from University of the Punjab, specializing in wildlife. (Year 2005)
 Thesis: Ecology of Houbara Bustard (*Chlamydotis undulata macqueenii*) in Punjab, Nag Valley (Balochistan), and Uzbekistan.
- Master of Science in Zoology from University of The Punjab, specializing in wildlife research and fieldwork (year 1994).
 Thesis: Behavioural patterns of Blue Peafowl (*Pavo cristatus*) in Changa Manga Wildlife Sanctuary.
- Bachelor of Science with Botany, Geography and Zoology from Islamia University Bahawalpur. (Year 1990)

Area of Research

Field Zoology/Ornithology/Ecology: focus on population estimates, habitat evaluation, food preferences and conservation of species.

Foreign Training

Attended three months training of radio tracking and bird handling from National Avian Research Center Abu Dhabi in 1998 with special emphasis on Houbara Bustard (*Chlamydotis macqueenii*).
Professional Experience

Present Post: Assistant Professor, Zoology Department, PMAS-Arid Agriculture University Rawalpindi. 01 Feb. 2006-todate.

Teaching Experience: Assistant Professor Hazara University, Mansehra

10 February 2005 – 31 January 2006.

Research Experience: Seven years (1996-2003) of extensive research experience as Research Scholar at Houbara Foundation International Pakistan (NGO). During this period surveys were conducted in Desert areas of Dera Ghazi Khan, Thal, Cholistan and Nag valley regarding environment, ecology, population, behavior and threats to the survival of Houbara Bustard (*Chlamydotis macqueenii*). Surveys were also conducted with foreigner scientists from National Avian Research Center Abu Dhabi, Uzbekistan, Kazakhstan, China, United Kingdom, and National Environment Research Center, Saudi Arabia in Nag Valley (Balochistan) and Punjab. The core responsibilities included radio tracking of Houbara, study of its diseases and managing Houbara Research and Rehabilitation Center Rahim Yar Khan.

Peripheral Skills

- Stuffing of birds and animals (15 years experience)
- Computer applications such as Microsoft office, Map Point, Internet communication etc.

Reviewer

- IBIS, International Journal of Avian Sciences; British Ornithologists Union; Wiley publishers
- Mammalia, France; De Gruyter Publishers
- Italian Journal of Zoology, Italian Society of Zoologists; Taylor and Francis Publisher
- Turkish Journal of Zoology, Published by Scientific and Technological Research Council of Turkey (TUBITAK)
- PODOCES, West and Central Asian Ornithological Journal, published from Iran
- International Journal of Biodiversity and Conservation; Academic Journals
- Journal of Threatened Taxa (JOTT), India; Open Access Journal
- Net Journal of Agriculture Sciences; Open access Journal

Memberships

Member:

- Advisory Board of the journal PODOCES, published from Iran
- Afro-Asian Taxonomic Network
- Threatened Waterfowl Specialist Group, IUCN
- Canid Specialist Group, IUCN
- Life fellow of Zoological Society of Pakistan
- Founder member of Pakistan Wildlife Foundation

Distinction

- Dr. Mirza Azhar Beg Gold Medal for the year 2012 by The Zoological Society of Pakistan

Languages: English, Urdu, Punjabi

Research Projects

□ Repercussion of depletions in vulture populations on the ecology of the Potohar region, Amount Rs. 2.5 million, duration 36 months, July, 2008-2011. Funded by Higher Education Commission.

□ Ecology, status and management of fisheries in Mangla Dam, Amount Rs. one million, duration 24 months, October 2009-2011. Funded by Pakistan Science Foundation.

□ Biodiversity and Ecology of Bats and Rodents in the thorn forests and croplands of the Potohar Plateau. Amount-2.2 million, duration 36 months, June 2011-2014. Funded by Pakistan Science Foundation. Co-PI.

□ Biological control of rats and mice in agricultural areas of Pothwar using Barn Owl (*Tyto alba*), Amount Rs. 6.25 million, duration 36 months, October, 2013-2016. Funded by Higher Education Commission.

Workshops/Congresses/Seminars Attended

- Zoological Congress by Zoological Society of Pakistan 1993-1995.
- Presented paper in Zoological Congress of Pakistan in Karachi 1997
- Houbara and Falcon workshop by Houbara Foundation International 1998
- Houbara International Symposium by Houbara Foundation International 1999
- Indus Dolphin Workshop arranged by WWF-Pakistan, 1999
- Consultative Workshop on Pakistan Important Bird areas. July, 30-31, 2001. BZU-Multan.
- Biochemical Engineering and Farmer Application. One day workshop, 15, August 2006. Microbiology Department, Quaid-i-Azam University Islamabad.
- International Conference on Biodiversity as Renewable Resource of Pakistan. 13-14 March 2007, Zoology/Biology Department, University of Arid Agriculture Rawalpindi.
- Effect of pollution on water quality and aquatic life. 26-27 June 2007, Pakistan Agriculture Research Council (NARC).
- Controlled and modified atmosphere to preserve post harvest quality of stored grains. 30-31 July 2007, Entomology Department, University of Arid Agriculture Rawalpindi.
- Professional Competency Enhancement Program for Teachers (PCEPT), Arid Agriculture University Rawalpindi (July 27 to August 22, 2009).
- Dynamic Learning and Management Skills, Higher Education Commission Islamabad (14-17 December 2009).
- International workshop on “Modern Techniques for the analysis of Ecological Data” Pakistan Museum of natural History, Islamabad, 29-30 September, 2009.
- Pakistan Congress of Zoology (international), 2-4 March, 2010, University of Agriculture Faisalabad.
- International Workshop on Climate Change and Sustainability of Agro-Environment: Challenges and Interventions 3-4 June 2010.
- National Symposium on Biodiversity of Pakistan 2011. June 7-9, 2011, Islamabad.
- Resource person for the workshop “Training in Field and Laboratory Techniques for Studying Volant and non-Volant Small Mammals” 26-30 July 2011 at Zoology Department, University of Agriculture, Faisalabad.
- Pakistan Congress of Zoology (international), 6-8 March, 2012, Government College University, Lahore; Co-chaired a technical session.
- International training workshop “Species distribution modeling techniques” 10-14 April, 2012 University of Agriculture, Faisalabad.
- Pakistan Congress of Zoology (international), 2-4 April, 2013, Pakistan Museum of Natural History, Islamabad; Co-chaired a technical session.

Publications

i. Books/Articles in Books

- 1) Nadeem, M. 2009. Ecology of Houbara Bustard in Punjab and Nag Valley (Balochistan). VDM Verlag Dr. Müller AG & Co. Germany. pp 268.
- 2) Sheikh, K. M; Mahmood, J. A. and Nadeem, M. S. 1997. Conservation: A must to safeguard the biodiversity of Rangla Wetland Complex. In: Biodiversity of Pakistan (eds. S. A. Mufti; Charles A. Wood; S. A. Hasan). 1997. Pakistan Museum of Natural History Islamabad, Florida Museum of Natural History Gainesville. 127-132 pp.
- ii. International Research Papers
 - a) with Impact Factor
 - 3) Nadeem, M. S. Asif, M. and Maan, M. A. 2004. Estimation of the Punjab (Pakistan) wintering population of the Houbara Bustard *Chlamydotis macqueenii*. *Acta Ornithologica* Vol.39 (1):75-78.
 - 4) Nadeem, M. S; Ali, F. and Akhtar, M. S. 2004. Diet of Houbara Bustard *Chlamydotis undulata* in Punjab, Pakistan. *Forktail*. No.20 August, 2004: 91-93.
 - 5) Nadeem, M. S; Maan, A. A; Mahmood, T. and Abbasi, A. I. 2005. Population Estimates of Houbara Bustard *Chlamydotis undulata macqueenii* in Punjab, Pakistan, November 1999. *Ardeola* Vol. 52 (1):163-166.
 - 6) Anwar, M.B; Jackson, R; Nadeem, M. S; Janečka, J. E; Hussain, S; Beg, M. A; Muhammad, G. and Qayyum, M. 2011. Food Habits of Snow Leopard *Panthera unica* (Schreber, 1775) in Baltistan, Northern Pakistan. *European Journal of Wildlife Research*. 57 (5): 1077-1083.
 - 7) Nadeem, M. S; Imran, S. M. K; Mahmood, T; Kayani, A. R; and Shah, S. I. 2012. A Comparative Study of the Diets of Barn Owl (*Tyto alba*) and Spotted Owlet (*Athene brama*) Inhabiting Ahmadpur East, Southern Punjab, Pakistan. *Animal Biology*, 62(1): 13-28.
 - 8) Mahmood-ul-Hassan, M; Javid, A; Nadeem, M. S; and Ashraf, S. 2012. An extralimital record of the Egyptian tomb bat *Taphozous perforatus* from Pakistan. *Mammalia*, 76(2):227-229.
 - 9) Nadeem, M. S; Naz, R; Shah, S. I; Beg, M. A; Kayani, A. R; Mushtaq, M; and Mahmood, T. 2012. Season and locality related changes in the diet of Asiatic jackal (*Canis aureus*) in Potohar, Pakistan. *Turk. J. Zool.* 36(6):798-805.
 - 10) Nighat, S; Iqbal, S; Nadeem, M. S; Mahmood, T. and Shah, S. I. 2013. Estimation of heavy metal residues from the feathers of Falconidae, Accipitridae, and Strigidae in Punjab, Pakistan. *Turk. J. Zool.* 37(4):488-500.
 - 11) Mahmood, T; Usman-Ul-Hassan, S.M; Nadeem, M.S; and Kayani, A.R. 2013. Population and diet of migratory Common Starling *Sturnus vulgaris* wintering in agricultural areas of Sialkot District, Pakistan. *Forktail*, 29:102-103.
 - 12) Nadeem, M. S; Mahmood, T; and Mahmood-ul-Hassan, M. 2014. Breeding success of Stone Curlew *Burhinus oedicnemus* in Nag Valley (1999-2001), Kharan, Pakistan. *Turk. J. Zool.* 38(4): 510-514.
 - 13) Noureen, S; Nadeem, M. S; Beg, M. A; and Anwar, M. 2014. Seasonal variation in the reproductive tract of the Indian flying fox, *Pteropus giganteus* (Brünnich, 1782). *Animal Biology*, 64(4):343-364.
 - b) without Impact Factor (included in ISI list)
 - 14) Nadeem, M. S; Asif, M. and Rashid, H. 2003. Survival ratio of released Houbara Bustard from Houbara Research and Rehabilitation Center (Salluwali) Rahim Yar Khan, Punjab, Pakistan. *Berkut (Ukrainian Ornithological Journal)*, Vol. 12 (1):83-92.
 - 15) Nadeem, M. S; Kamal, S; Asif, M. and Rashid, H. 2003. Morphometric Variations of Houbara Bustard. *Berkut (Ukrainian Ornithological Journal)*, Vol. 12 (1):161-163.
 - 16) Mahmood, T; Ahmed, M. M. and Nadeem, M. S; 2004. Profile of Gonadal Hormones in the male and female Houbara Bustard during the year. *Berkut (Ukrainian Ornithological Journal)*, Vol. 13 (1):110-114.

- 17) Nadeem, M. S; Tanvir, A. and Akhtar, M. S. 2004. A study of Parasites of Houbara Bustard in Punjab, Pakistan. *Berkut (Ukrainian Ornithological Journal)*, Vol. 13 (1):122-126.
- 18) Nadeem, M. S; Mian, A. A; Rashid, H. and Asif, M. 2004. Habitat, Population, Breeding Activities and Threats to Houbara Bustard *Chlamydotis undulata macqueenii* in Nag Valley (1999-2001) *Berkut (Ukrainian Ornithological Journal)*, Vol. 13 (2):244-257.
- 19) Nadeem, M. S; Mian, A. A; Asif, M; Rashid, H; Akhtar, M. S. and Mujtaba, G. 2005. Houbara Bustard: An Experience of Rearing Chicks in Nag Valley (Balochistan), Pakistan. *Berkut (Ukrainian Ornithological Journal)*, Vol. 14 (2):246-254
- 20) Nadeem, M. S; Maan, A. A; Mahmood, T. and Ikram, R. I. 2005. Houbara Population Estimates in Punjab, Pakistan (November 2000). *Berkut*. Vol. 14 (1):71-75.
- 21) Mujtaba, G. and Nadeem, M. S. 2006. Sex identification in birds based on Polymerase Chain Reaction (PCR) and Polyacrylamide Gel Electrophoresis. *Berkut*, Vol. 15 (1):166-168.
- 22) Nadeem, M. S; Asif, M; Mahmood, T; and Mujtaba, G. 2007. Reappearance of Red-headed Vulture *Sarcogyps calvus* in Tharparker, Southeast Pakistan. *Podoces* 2 (2):146-147.
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- 24) Nadeem, M. S; Mahmood, T; and Asif, M; 2010. Wintering Population of Houbara Bustard in Punjab, Pakistan (2002-2003). *Berkut*. Vol. 19 (1):133-140.
- 25) Bilal, S; Rais, M; Anwar, M; Mahmood, T; Hussain, I; and Nadeem, M. S. 2011. Trends in the diversity of migratory ducks at Rawal Lake, Islamabad. *Berkut*. Vol. 20 (2):65-69.
- c) Others
- 26) Sheikh, K. M; Nadeem, M. S. and Gishkori, M. H. 1995. Marbled Teal, study at the Rangla Complex Pakistan. *Threatened Waterfowl Research Group (TWRG) Newsletter* No. 7. May 1995: 13-15
- 27) Maan, M. A; Chaudhry, A. A. and Nadeem, M. S. 2003. Wildlife Diversity in Lal Suhanara National Park, Bahawalpur, Pakistan. *Tiger Paper*. Vol. 30: No. 3 Jul.-Sept. 2003:4-10.
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- 29) Nadeem, M. S; Asif, M; Mujtaba, G; and Mahmood, T. 2006. Apparent unrecorded migratory route of Dalmatian Pelican *Pelecanus crispus* in Nag Valley, Pakistan. *Birding ASIA*:73-4.
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- iii. National Research Papers
- a) with Impact Factor
- 31) Zareef, S; Nasim, S; Kalsoom, S; Jabeen, F; Javed, Z; Nadeem, M. S; and Beg, M. A. 2009. Occurrence of the Norway Rat, *Rattus norvegicus*, in Rawalpindi and Islamabad. *Pak. J. Zool.* 41(5):415-416.
- 32) Nadeem, M. S; Asif, M; and Mahmood, T. 2009. A rare Skink, *Novoeumeces blythianus* recorded from Nag Valley, Kharan, Balochistan. *Pak. J. Zool.* 41(5):416-417.
- 33) Beg, M. A; Mushtaq-ul-Hassan, M; Durr-i-Shahwar, and Nadeem, M. S. 2010. The Dynamics of Rats and Mice Populations Inhabiting Wheat-Sugarcane based croplands in Central Punjab (Pakistan). *Pak. J. Zool.* 42(3):311-323.

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- 35) Nadeem, M. S; Mahmood, T; Asif, M; and Mahmood-ul-Hassan, M. 2011. Annual Reproductive Success of the Hoopoe Lark *Alaemon alaudipes* in Nag Valley (1999-2001), Kharan, Pakistan. *Pak. J. Zool.* 43(2):279-284.
- 36) Anwar, M. B; Nadeem, M. S; Kayani, A. R; and Qayyum, M. 2011. Is mammalian hair fiber analysis by optical fiber diameter analyzer (OFDA) helpful to identify prey in scats of carnivores? *Pak. J. Zool.* 43(6): 1218-1220.
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- 38) Anwar, M. B; Nadeem, M. S; Shah, S.I; Kayani, A. R; and Mushtaq, M. 2012. A Note on the diet of Indian Wolf (*Canis lupus*) in Baltistan, Pakistan. *Pak. J. Zool.* 44(2):588-591.
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- 41) Mahmood, T; Siddiq, M. K; Rais, M; and Nadeem, M. S. 2012. Distribution and Relative Abundance of Freshwater Turtles in Korang River Islamabad- Rawalpindi, Pakistan. *Pak. J. Zool.* 44(3):889-893.
- 42) Javid, A; Mahmood-ul-Hassan, M; Nadeem, M. S; Rana, N; and Khan, N. 2012. First record of the Lesser Mouse-tailed Bat *Rhinopoma hardwickii* (*Rhinopomatidae: Chiroptera*) from southern Punjab, Pakistan. *J. Anim. Plant Sci.* 22 (2):278-282.
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- 44) Mirza, Z.S; Nadeem, M. S; Mirza, M. A; and Qayyum. 2012. Population status and biological characteristics of Common Carp *Cyprinus carpio* in Mangla Reservoir. *J. Anim. Plant Sci.* 22 (4):933-938.
- 45) Javid, A; Mahmood-ul-Hassan, M; Afzal, M; Nadeem, M. S; Hussain, S. M. 2012. Recent record of least pipistrelle (*Pipistrellus tenuis*) (*Vespertilionidae: Chiroptera*) from Islamabad. *J. Anim. Plant Sci.* 22 (4):1042-1047.
- 46) Nadeem, M. S; Zafar, S; Kayani, A. R; Mushtaq, M; Beg, M. A; and Nasir, M. F. 2013. Distribution and Roosting Habitats of Some Microchiropteran Bats in Rawalpindi District, Pakistan. *Pak. J. Zool.* 45(2):565-569.
- 47) Naqvi, S. R; Mushtaq, M; Beg, M. A; Nadeem, M. S; and Kayani, A. R. 2013. Dietary Habits of the House Rat (*Rattus rattus*) in Urban Rawalpindi, Pakistan. *Pak. J. Zool.* 45(2):531-536.
- 48) Mahmood, T; Niazi, F; and Nadeem, M. S. 2013. Diet composition of Asiatic Jackal (*Canis aureus*) in Margallah Hills National Park, Islamabad, Pakistan. *J. Anim. Plant Sci.* 23 (2):446-456.
- 49) Mirza, Z.S; Nadeem, M. S; Mirza, M. A; and Malik, I. 2013. Spatial and Temporal Fluctuations in the Physico-Chemical Limnology of Mangla Dam (Pakistan). *Pak. J. Zool.* 45(3):679-686.

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- 51) Mushtaq, M; Kayani, A.R; Nadeem, M. S; and Beg, M.A. 2014. Distribution Pattern of Commensal Rodents in shops of Urban Rawalpindi. Pak. J. Zool. 46(6):1585-1589.
- b) without Impact Factor (HEC Approved)
- 52) Mirza, Z. S; Nadeem, M. S; Mirza, M. A; Sulehria, A.Q.K; and Shah, S. I. 2012. Current status of fisheries in Mangla Reservoir, Pakistan. Biologia (Pak). 58(1&2):31-39.
- 53) Mirza, Z.S; Mirza, M.R; Nadeem, M. S; and Sulehria, A.Q.K 2013. Revised Checklist of fishes of Mangla Reservoir, Pakistan. Biologia (Pak). 59(1):1-6.
- c) Others
- 54) Chaudhary, A. A; Akhtar, T. and Nadeem, M. S. 1995. Blue Peafowl (*Pavo cristatus*) Behaviour and management in Changa Manga Wildlife Sanctuary. WPA News Pakistan No. 1 July 1995: 1-5.
- 55) Nadeem, M. S; Chaudhry, A. A. and Akhtar, M. S. 1997. Breeding of Houbara Bustard *Chlamydotis undulata macqueenii* in Nag Valley Kharan, Balochistan Pakistan. Pakistan Journal of Ornithology. 1(1-2): 59-65.
- 56) Nadeem, M. S; Chaudhry, A. A. and Akhtar, T. 1998. An Ethological study on Blue Peafowl (*Pavo cristatus*) at Changa Manga Wildlife Sanctuary Pakistan. Pakistan Journal of Ornithology, Vol. 2(1-2): 25-36.
- 57) Sheikh, K. M; Khan, A. A. and Nadeem, M. S. 1998. Wise Use: A traditional approach to utilize the resources of Rangla Wetland Complex. Pakistan Journal of Ornithology. Vol. 2(1-2):62-75.
- 58) Nadeem, M. S. 1999. Nag Valley, Breeding Houbara demands urgent conservation. Natura, WWF, Vol. 27, Issue 3:13-14.
- 59) Maan, M. A; Chaudhry, A. A. and Nadeem, M. S. 1999. Habitat: An important factor in population estimation for Houbara Bustard (*Chlamydotis undulata macqueenii*). Pakistan Journal of Ornithology 3(1-2):18-26.
- 60) Rashid, H. and Nadeem, M. S. 2000. The Houbara. Wildlife and Environment, Special Issue, -Houbara Bustard. Vol. 9, No. 2. November 2000:12-13.
- iv. Unpublished Reports
- 1) Sheiks, K.M; Nadeem, M.S; and Qureshi, R. 2012. Detailed Design Report: Environmental Management Action Plan: Terrestrial Ecology Report, Vol. 3. Dasu Hydropower Consultants (DHC).
- 2) A study of Disease of Houbara Bustard in Houbara Research and Rehabilitation Center Rahim Yar Khan Punjab. Houbara Foundation International Pakistan. December 1998 to March 1999.
- 3) Survey of Houbara Bustard in Lower Sindh. Report Houbara Foundation International Pakistan. November 1999. Co-author with Haroon Rashid.
- 4) Preliminary report on Houbara Bustard at Houbara Research and Rehabilitation Center Rahim Yar Khan Punjab. Houbara Foundation International Pakistan.1998. Co-author with Haroon Rashid.
- 5) First report on release of Houbara Bustard in their breeding grounds, Pakistan. Houbara Foundation International Pakistan. 1999. Co-author with Haroon Rashid.
- 6) A study of ponds developed by Salinity Control and Reclamation WAPDA, in Cholistan (Sadiq Abad). Houbara Foundation International Pakistan. Oct. 2000.
- 7) Survey of Wetlands in Sindh. Houbara Foundation International Pakistan. January 2001.

- 8) Breeding Biology and Potential of Houbara bustard (*Chlamydotis undulata macqueenii*) Nag Valley Distt. Kharan, Balochistan. Houbara Foundation International Pakistan. 12 March-13 May, 1997. Co-author with Haroon Rashid.
- 9) Population Density and Ecology of Houbara bustard (*Chlamydotis undulata macqueenii*) in Cholistan. Houbara Foundation International Pakistan. Nov. 1996 - Jan. 1997. Co-author with Haroon Rashid.
- 10) Ecology and Socio-Economic of Houbara bustard (*Chlamydotis undulata macqueenii*) in Tehsil Rojhan Distt. Rajanpur Houbara Foundation International Pakistan. 15 Oct.-12 Nov.1996 Co-author with Haroon Rashid.
- 11) Breeding potential of Houbara bustard in Nag Valley and first step toward propagation of Houbara bustard at Houbara Research Rehabilitation and Breeding Center Kirichi, Nag District Kharan. March-June 1999. Houbara Foundation International Pakistan. Co-author with Haroon Rashid.
- 12) Progress toward imprinting of wild Houbara bustard in captivity. Houbara Research and Rehabilitation Center, Rahim Yar Khan May 1999. Houbara Foundation International Pakistan. Co-author with Haroon Rashid.
- 12) Captive Management of Houbara bustard in Houbara Research and Rehabilitation Center Rahim Yar Khan Punjab. Houbara Foundation International Pakistan. Oct.1997-Feb.1998. Co-author with Haroon Rashid.
- 13) Study of Birds of His Highness Sheikh Zayed Bin Sultan Al Nahyan's Agriculture Farm, Salluwali, Rahim Yar Khan. Houbara Foundation International Pakistan. May, 2003.

Thesis Supervised

Ph. D

- | | | | |
|----|--------------------|-----------------|--|
| 01 | Zahid Sharif Mirza | 2012 | An Ecological study on some commercial fishes in the Mangla Dam Ecosystem. |
| 02 | Inayat Ullah | 2013 | Some studies on Molecular Diversity in different populations of Musk Deer (<i>Moschus chrysogaster</i>). |
| 03 | Sajida Noureen | 2014 | Ecology, Roosting habits and Reproduction in the Megachiroptera Bats of Pothwar Region (Pakistan) |
| 04 | Shagufta Nighat | thesis defended | Heavy Metals residues in the Bat Fauna of Central and Northern Punjab |
| 05 | Shahnaz Bibi | In process | Habitat distribution, diversity and systematic of <i>Mus</i> spp. in Pothwar, Pakistan |
| 06 | Nosheen Rashid | In process | Diversity, Distribution and Diet of some microchiropteran bats in rural and urban environment of Pothwar Region. |
| 07 | Atufa Kawan | In process | Genetic diversity and phylogeny of selected Murid species found in Pothwar region Pakistan |

M. Phil

- | | | | |
|----|----------------------|------|--|
| 01 | Muhammad Bilal Anwar | 2008 | Food preferences of Snow Leopard (<i>Uncia uncia</i>) in Himalayas, Northern Pakistan |
| 02 | Abu-ul-Hassan Faiz | 2009 | Studies on the changes in Avian Community Structure of the River Ravi, Lahore |
| 03 | Shagufta Nighat | 2009 | Study on the heavy metals residues from the feathers of some raptors in Punjab |
| 04 | Syed Israr Shah | 2009 | Studies on some avian scavengers of carcasses of livestock animals in the Pothwar Region |
| 05 | Syed M. Khalid Imran | 2009 | Feeding habits of some owls in Ahmad Pur Sharkia, Punjab. |

- 06 Asif Ali 2010 Occurrence of heavy metals and organic solvents in fishes and amphibians of Galpani Nalla, Mardan, NWFP.
- 07 Aasma Akram 2010 Optimization of the conditions for the assessment of genetic diversity in Asiatic Bears
- 08 Shahnaz Bibi 2010 Seasonal changes in the reproductive tracts of Megachiropteran Bats of Pothwar
- 09 Rubina Naz 2010 Morphometric and distributional variations in Rattus species in Rawalpindi-Islamabad
- 10 Ruqyya Naz 2010 Food habits of the Pothwar Jackals (*Canis aureus*) as determined from their faecal materials.
- 11 Muhammad Aamir Khan 2010 Morphometry of the Frugivorous Bats of the Pteropidae Family in Pothwar.
- 12
- 13 Rabia Zaman Bhatti
- Lubna Shehnaz 2011
- 2012 Comparative study of the cranial morphometry of different Microchiropteran bats in Pothwar.
- Food habits of Spotted Owlet in Jhelum District
- 14 Raja Imran Hussain 2013 Distribution and abundance of small rodents in rural, Islamabad
- 15 Freeha Gul 2013 Molar teeth variations in the rodent of Pothwar
- 16 Iftikhar Hussain 2014 Ecological Distribution of Bat species of Chakwal District

Profile

Name: Dr. Mazhar Qayyum
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 Organization: PirMeharAliShah-AridAgricultureUniversity
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 Cell Phone:
 E-mail: mazhar_dr@yahoo.com
 Educational Qualification:
 Field of specialization:

Academic Qualifications

DEGREE	YEAR	SUBJECTS	INSTITUTIONS
Post Doctorate	2003	Parasitology	Louisiana State University, USA

Ph.D	1997	Parasitology	Quaid-I-Azam University, Islamabad, Pakistan
M.Phil	1991	Parasitology	Quaid-I-Azam University, Islamabad, Pakistan
M.Sc	1989	Biology (Animal Sciences)	Quaid-I-Azam University (Animal Sciences), Islamabad, Pakistan

Professional Experience

post held	organization	period served	description of job	reasons of leaving	experience
Professor	Department of Zoology, Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi, Pakistan	Jan, 2010-to-Date	Teaching and Research	n/a	1 Year
Associate Professor	Department of Zoology, Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi, Pakistan	Feb, 2005-to-Jan 2010	Teaching and Research	n/a	5 Years
Assistant Professor	Department of Zoology, Pir Mehr Ali Shah, Arid Agriculture University, Rawalpindi, Pakistan	Jan, 98-to-Feb, 2005	Teaching and Research	n/a	7 Years
Scientific Officer	Aquaculture and Fisheries Research Institute, National Agriculture Research Council, Islamabad	July, 94-to-Dec, 1997	Research	N/A	3 Years 5 Months

TRAININGS/ WORKSHOP

November, 22-23, 1997 Current Trends in Developmental and Reproductive Biology organized by Pakistan Academy of Sciences, Islamabad.

October, 1-7, 1998 Latest Developments in Molecular Biology and Biotechnology at UGC Regional Centre, Lahore in Collaboration with National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore.

June 18-19, 2007 "National Training Seminar on Biosafety and Biosecurity Initiatives" at Islamabad Under the Supervision of U.S. Department of State's Biosecurity Engagement Program Pakistan Agricultural Research Council (PARK) Planning Commission of Pakistan.

December 10-12, 2002 Training Course on “Reproductive Health and the Youth” at Islamabad organized by Population & Environment Communication Centre.

April 28-30, 2004 Participation in International Workshop on “Intensive Farming & Integrated Resource Management: Traditional & Non-Traditional Approaches”.

July, 9, 2009 Training Workshop on “Application of Participatory Epidemiology in Developing Countries” Organized by Faculty of Veterinary and Animal Sciences, PMAS-Arid Agriculture University, Rawalpindi

Society Memberships

- Zoological Society of Pakistan
- Pakistan Fisheries Society
- Member World Association for the Advancement of Veterinary Parasitology

RESEARCH INTEREST

- Biology of parasites including Parasites pathogenic to Fish species.
- Ecology, epizootiology, field studies, life cycles and development, pathology, control and taxonomy of nematodes, cestodes and trematodes of domestic and wild animal.
- Laboratory studies of host-parasitic interactions.

POST-GRADUATE COURESES TAUGHT

1. Parasitology
2. Helminthology
3. Protozoology
4. Principal of Genetics
5. Fundamentals of Microbiology and Immunology
6. Economic Zoology
7. Aquaculture and Fisheries
8. Cell Biology
9. Clinical Bacteriology
10. Medical Virology

M.Sc/M.Phil Examiner

- M. Sc/ M.Phil Papers and Theses, University of Peshawar, Peshawar.
- M.Sc Papers andTheses, BahuuddinZakriaUniversity, Multan.
- M.Phil Theses, Quaid-i-AzamUniversity, Islamabad
- M.Phil Theses, GovernmentCollegeUniversity, Lahore
- M.S Theses COMSATS, Islamabad.
- B.S (Hons), University of Wah

RESOURCE PERSON

March 13-14, 2007 Participation in “International Conference on Biodiversity as Renewable Resource of Pakistan” held at University of Arid Agriculture, Rawalpindi, Pakistan.

June 26-27, 2007 Participation in National Seminar on “Effect of Pollution on Water Quality and Aquatic Life” held at National Agricultural Research Centre, Islamabad, Pakistan.

December 18-23, 2006 Participation in International Workshop on “Techniques Related to Molecular Biology and Immunology” held at Department of Biochemistry University of Arid Agriculture, Rawalpindi, Pakistan.

December 05-09, 2006 Participation in”UAAR/NCB Workshop on Biotechnology for Secondary School Teachers” held at Department of Biochemistry, University of Arid Agriculture, Rawalpindi.

December 19-31, 2005 Participation in “Teacher’s Training Workshop on Biotechnology and Bioinformatics” held at the department of Bio-Sciences, Faculty of Computer Sciences, MuhammadAliJinnahUniversity, Islamabad

December 17-20, 2008 Organized by Pakistan Society for Biochemistry and Molecular Biology

Expertise in Computer

- Word Processing
- Graphics
- Windows

Research Projects (Principal Investigator)

Project Title's (Million Rs)	Agency	Amount	Sponsoring
Epidemiology of Fasciolosis in large ruminants of Potohar Region.		2.1	Higher Education Commission
Detection of anthelmintic resistance in gastrointestinal nematodes in small Ruminants		1.3	Pakistan Science Foundation
Observation of malarial infection in the inhabitants of Rawalpindi-Islamabad		0.087	University Research Fund
Distribution patterns of fish parasites among commercially important fish species inhabiting RawalLakes, Islamabad		0.098	University Research Fund

Publications (Impact factor)

International Journals

1. ATEEQ-UR-REHMAN, ABDUL MANNAN, SAMIAINAYATULLAH, M. ZAEEM AKHTAR, MAZHAR QAYYUM AND BUSHRA MIRZA. 2009. Biological evaluation of wild thyme (*Thymus serpyllum*). *Pharmaceutical Biology*, 47(7): 628-633.
2. FARHANA RIAZ CHAUDHRY AND MAZHAR QAYYUM, 2008. Development and survival of *Haemonchus contortus* infective larvae derived from sheep faeces under sub-tropical conditions in the Potohar region of Pakistan. *Trop Anim. Health Prod* 40:85-92.
3. MUHAMMAD SHERAZ AHMAD, MUKHTAR HUSSAIN, MUHAMMAD HANIF, SAQIB ALI, MAZHAR QAYYUM AND BUSHRA MIRZA, 2008. Di- and Triorganotin (IV) Esters of 3, 4- Methylenedioxyphenylpropenic Acid: Synthesis, Spectroscopic Characterization and Biological Screening for Antimicrobial, Cytotoxic and Antitumor Activities. *Chem. Biol. Drug Desig.*, 2008; 71:568-576.

4. SYED SHAKEEL RAZA RIZVI, SHAZIA ALTAF, AFZAAL AHMAD NASIM, M. ASIF, ZAHID RASUL AND MAZHAR QAYYUM, 2001. The effect of ketamine hydrochloride anesthesia on basal and N-methyl-D, L-Aspartate induced plasma prolactin secretion in the adult male Rhesus monkey. *Life Sciences (USA)*, 68:1083-1093.
5. SYED SHAKEEL RAZA RIZVI, SHAZIA ALTAF, SADAF LATIF, AFZAAL AHMAD NASIM, AND MAZHAR QAYYUM, 2004. Chronic Orchidectomy does not influence the sensitivity of the pituitary somatotropes to varying doses of GNRH administered intravenously to the adult male Rhesus monkey. *Life Sciences (USA)*, 75: 1041-1050.
6. ABDUL RAB, M.AFZAL, N. BARLAS AND MAZHAR QAYYUM, 2001. Incidence of epizootic ulcerative syndrome (EUS) in freshwater fishes in the endemic area of Punjab, Pakistan. *Bangladesh J. Fish. Res.*, 5(1):45-52.
7. MUHAMMAD BILAL ANWAR, RODNEY JACKSON, MUHAMMAD SAJID NADEEM, JAN E. JANECKA, SHAFQAT HUSSAIN, MIRZA AZHAR BEG, GHULAM MUHAMMAD, MAZHAR QAYYUM, 2011. Food habits of the snow leopard *Panthera uncia* (Schreber, 1775) in Baltistan, Northern Pakistan. *Eur J Wildl Res*, DOI 10.1007/s10344-011-0521-2
8. ATIF KAMAL, MAZHAR QAYYUM, IQBAL U CHEEMA AND AUDIL RASHID, 2011. Biological Monitoring of Blood Naphthalene Levels as a Marker of Occupational Exposure to PAHs among Auto-Mechanics and Spray Painters in Rawalpindi. Kamal et al. *BMC Public Health* 2011, 11:467
9. IRFAN, M., RAJA, G. K., MURTAZA, S., MANSOOR, R., QAYYUM, M. AND RIZVI, S.S.R. Physical stress may result in growth suppression and pubertal delay in working boys. *J. Med. Hypotheses Ideas*. 5(25): 2011.
10. HAROON AHMED, BUSHRA MIRZA, QASIM KHAN, WASEEM SAFDAR AND MAZHAR QAYYUM. Seroprevalence of hypodermosis (*Hypoderma lineatum*) in the cattle of potohar region, Pakistan. *International Journal of Cell and Molecular Biology* 2(2):497-510, 2011.
11. HAROON AHMED, RIAZ KHAN, ROSARIO PANADERO-FONTAN, CEFERINO LOPEZ SANDES, MUHAMMAD FAROOQ IQBAL, SYED MUHAMMAD SQLAN NAQVI, MAZHAR QAYYUM, 2012. Geographical Distribution of Hypodermosis (*Hypoderma* sp.) in Northern Punjab, Pakistan. *Kafkas Univ. Vet. Fak. Derg* 18(suppl-A) A215-A219, 2012.
12. AHMED, H., KHAN, M. R., FONTAN, R. P., SANDEZ C. L., IRFAN, M., GHANI, A., HUSSAIN, M., ASIF, S., AHMAD, A., NAQVI, S. M. S. AND MAZHAR QAYYUM. "Prevalence of Bovine Hypodermosis in water buffalo (Bubalus bubalis) from Jehlum district, Pakistan". *Kafkas Univ. Vet. Fak. Derg* Vol:19 (1): 79-84, 2013.
13. [KIRANAFSHAN](#), [MAZHAR QAYYUM](#), [SYED SHAKEEL RAZA RIZVI](#), [MUHAMMAD MUKHTAR](#), [MUHAMMAD MUSHTAQ](#), [JAMES E. MILLER](#). Serological and coprological comparison for rapid diagnosis of *Fasciola hepatica* infection in small ruminants from sub-tropical area of Pakistan. *Small ruminant research*, 113: 267-272, 2013.

14. KIRAN AFSHAN, M.A. VALERO, MAZHAR QAYYUM, R.V. PEIXOTO, A. MAGRANER AND S. MAS-COMA, 2013. Phenotypic description of *Fasciola hepatica*/*Fasciola gigantica* intermediate forms infecting buffaloes from Central Punjab, Pakistan. *Journal of helminthology*. Published online: 04 June 2013.

national JOURNALS

1. AFZAL, M, A. RAB, N. AKHTER, I. AHMED¹, M.F.KHAN AND M. QAYYUM². Growth Performance of Bighead Carp *Atistichthys Nobilis* (Richardson) In Monoculture System With And Without Supplementary Feeding. *Pakistan Vet. J.*, 2008, 28(2): 57-62.
2. RAJA RAZI UL HUSSAIN, GHAZALA KAUKAB, MAZHAR QAYYUM, MUHAMMAD ASIM AND AZRA KHANUM, 2007. Association of Diabetes with Hepatitis C. Virus (HCV) Infected Male and Female Patients Along with Different Risk Factors. *International Journal of Agriculture & Biology*, 1560-8530/09-5-736-740.
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50. AFZAAL AHMAD NASEEM, MAZHAR QAYYUM, SHAISTA ASLAM, MUHAMMAD INAM, SHAHNAZ MURTAZA, ROBINA MANSOOR AND SYED SHAKEEL RAZA RIZVI. Circulating concentrations of LH, testosterone, GH and linear growth velocity from infancy through puberty in normal health boys (3rd National Symposium: recent Trends in Endocrinology and reproductive Sciences, 15-16 May, 2010. The University of Lahore, Lahore).
51. SYED SHAKEEL RAZA RIZVI, RUBINA MANSOOR, SHAHNAZ MURTAZA, SHAISTA ASLAM, AFZAAL AHMAD NASEEM, KIRAN AFSHAN, SHAMAILA IRUM, HAROON AHMED, MAZHAR QAYYUM. Assessment of the sensitivity and secretory capacity of pituitary somatotropes to successive doses of GHRH in both the presence and absence of testosterone. 1st Joint Conference of Association/Societies of Pathologists, 7-9 December 2012, Armed Forces Institute of Pathology, Rawalpindi].
52. NIGHAT KAUSAR, SHAISTA ASLAM, AFZAAL AHMAD NASEEM, MUHAMMAD IRFAN, MAZHAR QAYYUM, SHAHNAZ BIBI, RASHIDA YOUSAF, RUBINA MANSOOR, SHEHNAZ MURTAZA AND SYED SHAKEEL RAZA RIZVI. The involvement of growth hormone secretagogue receptor GHSR1 α and G protein coupled receptor GPR39 in the regulation of growth hormone secretion during pubertal development in boys. National Conference on Trends in Biochemistry and Molecular Biology, 21st February, 2012, Quaid-i-Azam University Islamabad.
53. SHAISTA ASLAM, AYESHA REHMAN, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Evidence of a distinct awakening cortisol response in young adults during examination. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
54. MADIHA ZAFAR, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Changes in the body surface area during different stages of development in boys from potohar region: An exploratory Study. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
55. REEMA ALMAS, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Assessment of the relationship between the basal metabolic rate and various developmental stages in boys of Rawalpindi and Islamabad. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
56. SHUMAILA NAZIR, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Determination of the basal metabolic rate for assessment of energy requirement from prepuberty through puberty to adolescence among girls in twin cities of Rawalpindi and Islamabad. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
57. SABIHA KHANUM, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. An assessment of the body surface area for determination of drug dosage for treatment of various diseases in girls in different stages of their pubertal development. 32nd

Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.

Society Memberships

- Zoological Society of Pakistan
- Pakistan Fisheries Society
- Member World Association for the Advancement of Veterinary Parasitology

M. Sc Theses Supervised

1. Ali Muhammad 2005
Genetic variations in *Fasciola hepatica* isolate from large ruminants of Barani areas.
2. Aneela Asghar 2005
Determination of toxic metals in water and fish from upstream and downstream Rawal lake: as indicators of environmental pollution.
3. Wahab Munir 2005
Detection of multiple anthelmintic resistances against naturally acquired nematodes in awassi sheep reared at livestock khairimurat production nit Pakistan.
4. Sajid Mehmood 2005
Field evaluation of Famacha, after using different anthelmentic in hairy goats (jattal) reared at different small ruminant's farms.
5. Ishtiaq Ahmed 2005
Comparative efficacy of ivermectin, albendazole & levamisole against gastrointestinal nematodes infection in Bulkhi sheep
6. Wajeeha Rizvi 2005
Community-based study of hepatitis C viral infections and its association with type 2 diabetes among the patients with chronic liver disease
7. Safwan Ullah Khan 2005
Effect of replacement with soybean meal diets on growth performance of channel catfish (*Actalurus punctatus*)
8. Shamsa Kanwal 2005
Growth performance of American channel catfish (*lactalurus punctatus*) fed on different protein levels under pond culture system.

9. Rabia Khurshid 2005
Effects of ascorbic acid on the productive performance and egg characteristics of desi and fayoum chicken maintained on deep litter
 10. Farah Razzaq 2004
Comparative efficacy of angara disease vaccination (live and formalinized) and their immunomodulatory effects against new castle disease virus (NDV) in broiler chicks.
 11. Tehseen Khalid 2004
Effect of water supplemented potassium chloride on performance of broiler reared during summer season.
 12. Shazia Rustam 2002
Isolation and identification of pathogens of Enterobacteriaceae family especially *Shigella* species with its Antibigram in diarrhoeal patients.
 13. Uzma Malik 2002
Incidence and antibiogram of *Streptococcus pyogenes* and *Streptococcus pneumoniae* in patients of respiratory infections.
- M. Sc Theses (As a Supervisory Committee Member)*
1. Sofia Khanum 2002
Prevalence of *Salmonella* Species in Clinical Samples with their Antibigram Pattern.
 2. Muhammad Zia Ul Haq 2002
Association of Hepatitis C Antibodies Chronic Liver Failure.
 3. Malik Ghulam Sarwar 2004
Effect of Varying Dietary Protein and Energy Levels on the Performance of Broiler Chicks.
 4. Muhammad Saqlain 2005
Evaluation of Antimicrobial activity in some Seasonal Vegetables against common Mammalian Pathogens.
 5. Salma Abdul Rehman 2005.
Comparative Egg Characteristics and Proximate Composition of Rural Versus Commercial Breeds of Chickens

6. Rashida Yasmin 2005
A cross-sectional study of the relationship of the plasma growth hormone concentrations to the pubertal growth spurt in normal healthy boys.
 7. Nadia Afzal 2005
A cross-sectional assessment of the circulating concentrations of leptin and physical changes during puberty in boys.
 8. Hafsa Afzal 2005
Effect of Different energy values of old rice polish on growth performance of broiler chicks.
 9. Humaira Naureen 2006
Effects of Pesticides on Choline Esterase Activity of Brain in Passerine Birds.
- M. Phil Theses Supervised*
1. Nisar Ahmad 2008
Seroprevalence of *Toxoplasma gondii* antibodies in farm animals reared at Barani Livestock Production Research Institute, Khairimurat, Pakistan
 2. Safwan Ullah Khan 2008
In vitro anthelmintic activity of Hydro-Alcoholic Extracts of some *Artemisia* spp. indigenous to northern areas of Pakistan
 3. Samreen Tariq 2008
Haematological changes in response to gastrointestinal infections (GIN) in Salt range sheep reared at Livestock Production Unit, Khairimurat, Pakistan
 4. Muhammad Irfan 2008
Patterns of some Anterior Pituitary and Adrenal Hormones Secretions in School going and Working boys at Puberty
 5. Ali Muhammad 2008
Seasonal Distribution of Cercariae of *Fasciola gigantica* infecting different freshwater snails of Barani Region, Pakistan
 6. Kiran Afshan 2009
Serodiagnosis of *Fasciola hepatica* infection in the small ruminants, Potohar Region, Pakistan.

7. Nausheen Irshad 2009
Prevalence of theileriosis in sheep and goats of Potohar Region with special reference to tick infestation.

8. Haroon Ahmad 2009
Serodiagnosis of *Hypoderma lineatum* (Warbly Fly) infection in the cattle, Potohar Region, Pakistan.

9. Saba Rafique 2009
In Ovo vaccination against avian influenza virus subtype H9N2

10. Anila Zeb 2009
Immunocompetence in *Acredotheris tristis* (Common Myna) at different ranges of environment temperature

11. Majid mehmood 2009
Prevalence of ticks infesting the small and ruminants of Potohar Region, Pakistan.

12. Sadaf Ijaz Malik 2010
Histopathological studies on the digenetic trematode (*Gigantocotyle explanatum*) in naturally infected buffaloes (*Bubalus bubalis*)

13. Fouzia Anwer 2010
Development of Candidate Strains for Enterotoxemia Vaccine of Sheep and Goats

14. Zamir-un-Nisa 2010
Evaluation of different stabilizers of the efficacy for live aerosol haemorrhagic septicaemia vaccine

15. Naheed Zafar 2010
Isolation and Identification of Aerobic Bacterial Pathogens of Pneumonic Lung Tissue of Cattle

16. Sana Iqbal 2010

Prevalence of *Listeria monocytogene* In Commercially available Dairy Products of Rawalpindi-Islamabad

17. Afshan Kokab 2011

Comparative hematological studies in different cattle breeds at Barani Livestock Research and Production Institute, Khairimurat

18. Iftikhar Ahmad 2011

Study on distribution pattern of parasitic isopod of fishes and snail fauna at ChashmaLake, Mianwali

19. Huma Ayub 2012

Study the effect of temperatures on the developmental stages of major carps bred at Rawal Town Fish Hatchery, Islamabad

20. Maleeha Akram 2012

Prevalence and possible causes of pubertal disorders in boys

21. Misbah Riaz 2012

Molecular basis of delayed puberty in boys

Ph. D Theses Supervised

1. Abdul Rab 2008

Studies on the prospects of introducing American Channel Catfish *Ictalurus punctatus* (Rafinesque) in pond fish culture system of Pakistan.

2. Muhammad Afzal 2007

Studies on Biology and Culture of *Aristichthys Nobilis* Richardson (Bighead Carp) for Aquaculture in Pakistan

3. Farhana Riaz Chaudhry 2007

Study on the Biology of *Haemonchus Contortus*, in the Small Ruminants Grazing in Potohar Region, Pakistan.

4. Shamim Akhter 2006

Effect of Milk based Extenders Containing Different Antibiotics on Sperm Motility, Longevity, Morphology, Plasma Membrane Integrity, in Vivo Fertility and Bacterial Control of Liquid Semen from Buffalo Bulls.

5. Khalid Khan 2010

Assessment and Evaluation of Adverse Impacts off Climatic Changes on Fresh Water Ecosystem and Fish Production in Kalapani Stream in NWFP

6. Saira Mufti 2010

An Epidemiological Studies of Bovine Fasciolosis in Potohar Region, Pakistan

Ph. D Thesis (As a Supervisory Committee Member)

1. Muhammad Rafiq 2007

Biosystematics and Distribution of the Freshwater Fishes of Pakistan with Special Reference to the Subfamilies Noemacheilinae and Schizothoracinae.

2. Abid Mehmood 2007

Development of Homologous in Vitro Fertilization Test to Predict Fertility of Buffalo Semen,

3. Raja Razi Ul Hussnain 2007

Epidemiological and Clinical Prevalence of Hepatitis C with Diabetes Mellitus, 4.

4. Tanvir Ahmad 2007

Helicobacter Pylori Infection: Significance and Importance for Child Growth in Pakistan,.

Prof. Dr. Mazhar Qayyum
Chairman
Dpartment of Zoology

Publications (Impact factor)

INTERNATIONAL national JOURNALS

1. HAROON AHMED, RIAZ KHAN, ROSARIO PANADERO-FONTAN, CEFERINO LOPEZ SANDES, MUHAMMAD FAROOQ IQBAL, SYED MUHAMMAD SQLAN NAQVI, MAZHAR QAYYUM, 2012. Geographical Distribution of Hypodermosis (*Hypoderma* sp.) in Northern Punjab, Pakistan. *Kafkas Univ. Vet. Fak. Derg* 18(suppl-A) A215-A219, 2012.

national JOURNALS

1. Z. S. MIRZA, M. S. NADEEM, M. A. BEG AND MAZHAR QAYYUM, 2012. Population Status and Biological Characteristics of Common Carp, *Cyprinus Carpio*, in Mangla Reservoir (Pakistan). *The Journal of Animal & Plant Sciences*, 22(4):2012, Page: 933-938.

INTERNATIONAL CONFERENCES

1. AYESHA REHMAN, AFSHEEN KANWAL, SAIMA NAUREEN, AFZAAL AHMED NASEEM, SHAISTA ASLAM, MUHAMMAD IRFAN, FAHEEM TAHIR, RUBINA MANSOOR, SHAHNAZ MURTAZA, MAZHAR QAYYUM, AND SYED SHAKEEL RAZA RIZVI. Earlier Reactivation of the hypothalamo-pituitary-gonadal axis and advancement of puberty in boys under labor stress(15th International & 14th European Congress of Endocrinology (ICE-ECE2012), 5-9 May 2012, Fortessa da Basso, Florence, Italy).
2. NIGHAT KAUSAR, AFZAAL AHMED NASEEM, SHAHNAZ BIBI, SHAISTA ASLAM, MUHAMMAD IRFAN, MAZHAR QAYYUM, RASHIDA YOUSAF, RUBINA MANSOOR, SHAHNAZ MURTAZA, AND SYED SHAKEEL RAZA RIZVI. Evidence of the involvement of ghrelin and obestatin in the regulation of growth hormone secretion during pubertal development in boys(15th International & 14th European Congress of Endocrinology (ICE-ECE2012), 5-9 May 2012, Fortessa da Basso, Florence, Italy).
3. AYESHA YOUNAS, AFZAAL AHMED NASEEM, SHAISTA ASLAM, MUHAMMAD IRFAN, FAHEEM TAHIR, MAZHAR QAYYUM, RUBINA MANSOOR, SHAHNAZ MURTAZA AND SYED SHAKEEL RAZA RIZVI. Adaptation of the hypothalamo-pituitary-thyroid axis to pubertal development and exposure to acute and chronic physical stresses(15th International & 14th European

Congress of Endocrinology (ICE-ECE2012), 5-9 May 2012, Fortessa da Basso, Florence, Italy).

4. FAQIA BIBI, AFZAAL AHMED NASEEM, SHAISTA ASLAM, MUHAMMAD IRFAN, FAHEEM TAHIR, MAZHAR QAYYUM, RUBINA MANSOOR, SHAHNAZ MURTAZA AND SYED SHAKEEL RAZA RIZVI. The timing of the onset of adrenarche in Pakistani boys(15th International & 14th European Congress of Endocrinology (ICE-ECE2012), 5-9 May 2012, Fortessa da Basso, Florence, Italy).
ABSTRACTS/PRESENTATIONS

1. SYED SHAKEEL RAZA RIZVI, RUBINA MANSOOR, SHAHNAZ MURTAZA, SHAISTA ASLAM, AFZAAL AHMAD NASEEM, KIRAN AFSHAN, SHAMAILA IRUM, HAROON AHMED, MAZHAR QAYYUM. Assessment of the sensitivity and secretory capacity of pituitary somatotropes to successive doses of GHRH in both the presence and absence of testosterone. 1st Joint Conference of Association/Societies of Pathologists, 7-9 December 2012, Armed Forces Institute of Pathology, Rawalpindi].
2. NIGHAT KAUSAR, SHAISTA ASLAM, AFZAAL AHMAD NASEEM, MUHAMMAD IRFAN, MAZHAR QAYYUM, SHAHNAZ BIBI, RASHIDA YOUSAF, RUBINA MANSOOR, SHEHNAZ MURTAZA AND SYED SHAKEEL RAZA RIZVI. The involvement of growth hormone secretagogue receptor GHSR1 α and G protein coupled receptor GPR39 in the regulation of growth hormone secretion during pubertal development in boys. National Conference on Trends in Biochemistry and Molecular Biology, 21st February, 2012, Quaid-i-Azam University Islamabad.
3. SHAISTA ASLAM, AYESHA REHMAN, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Evidence of a distinct awakening cortisol response in young adults during examination. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
4. MADIHA ZAFAR, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Changes in the body surface area during different stages of development in boys from potohar region: An exploratory Study. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
5. REEMA ALMAS, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Assessment of the relationship between the basal metabolic rate and various developmental stages in boys of Rawalpindi and Islamabad. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.

6. SHUMAILA NAZIR, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. Determination of the basal metabolic rate for assessment of energy requirement from prepuberty through puberty to adolescence among girls in twin cities of Rawalpindi and Islamabad. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.
7. SABIHA KHANUM, SHAISTA ASLAM, AFZAAL AHMED NASEEM, MAZHAR QAYYUM, NUSRAT JAHAN AND SYED SHAKEEL RAZA RIZVI. An assessment of the body surface area for determination of drug dosage for treatment of various diseases in girls in different stages of their pubertal development. 32nd Pakistan Congress on Zoology (International), 6-8 March, 2012, Government College University Lahore.

M.Phil Thesis Supervised

1. Huma Ayub 2012

Study the effect of temperatures on the developmental stages of major carps bred at Rawal Town Fish Hatchery, Islamabad

2. Maleeha Akram 2012

Prevalence and possible causes of pubertal disorders in boys

3. Misbah Riaz 2012

Molecular basis of delayed puberty in boys

Ruqia Mehmood Baig, PhD

D/O Mirza Saeed Mehmood Baig

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- **Objective:** I aspire to execute qualitative research and effective knowledge transfer.
- **Education**

- **PhD**, Biosciences, COMSATS Institute of Information Technology, Islamabad, 2013. Thesis title “*Studying the Genetic Basis of Sporadic Breast Cancer Metastasis*”
- **Mphil**, Cell Biology, Quaid-i-Azam University, Islamabad, 2008. Thesis title “*Isolation and Identification of Nematodes Associated to Shisham (Dalbergia Sissoo Roxb.) Dieback.*”
- **M.Sc.**, Zoology, Government College University, Lahore, 2004. Thesis title “*Effect of Fluoride Intoxification on Some Humoral and Histological Changes in Albino Mice*”
- **Research Skills**
 - Genomic DNA and RNA extraction/ isolation and from variety of fresh/ frozen samples including blood, cells, tissues and tissue sections.
 - DNA, RNA and protein quantification.
 - DNA mutation detection techniques (Single Stranded Conformational Polymorphism, PCR-SSCP and Restriction Fragment Length Polymorphism, PCR-RFLP) and sequencing data analysis.
 - cDNA synthesis
 - Analysis of expressional pattern of different genes at mRNA transcriptional level via Semi Quantitative and Quantitative real time PCR.
 - Immunohistochemistry
 - SDS-PAGE and Western Blotting
 - Cloning and related experimentation including isolation of plasmid, orientation confirmation
 - Cell culturing
 - Expressional analysis of desired gene via a range of *in vitro* assays including Growth Assay, Matrigel Adhesion Assay, Bead Assay, Electric Cell-Substrate Impedance Sensing Analysis of cells attachment and Migration (Electrical wound-healing assay for cells in vitro) and Matrigel Invasion Assay.
 - Isolation and Identification of Nematodes
 - Training of graduate students and project designing in Lab.
- **Statistics and softwares**
 - Microsoft Excel, Graph Pad Prism, SPSS, MS-OFFICE, BioEdit and Invitrogen Vector NTI for sequencing analysis, ImageJ, Data Assist software for Real Time PCR data analysis, ECIS modeling software to determine barrier function, cell membrane capacitance as well as the spacing between the cell basal membrane and electrode in *in vitro* analysis, alamut biosoftware

for mutational analysis and other Bioinformatics tools (BLAST, primer3, ClustalW).

➤ **Subject/ Courses Studied**

- Advances in Bioscience Research, Advances in Molecular Biology, Advances in Microbiology, Research Techniques, Advance in Molecular Genetics, Medical Microbiology, Pollution, Plant Tissue Culture, Advances in Biology of Reproduction, General Biochemistry, Molecular Cell Biology, Physiology and Animal Behavior, Genetics and Biometry, Developmental Biology, Animal Biodiversity, Environmental Biology and Wild life, Economic Zoology and Taxonomy, Evolution, Paleontology and Zoogeography, Basic Principles of Biotechnology, Immunology and Hematology. Applied Psychology.

➤ **Subject/ Courses taught**

- Physiological Systems of Animals, Genetics, Comparative Animal Physiology, Human Genetics, Molecular Biology

➤ **Research & Work Experience**

- Principal Investigator “***Contribution of Genetic Alterations in patients with Thyroid cancer***” funded by Higher Education Commission (HEC).
- Assistant Professor (IPFP, HEC Program) (January 2014 – January 2015), Department of Zoology/ Biology, PMAS Arid Agriculture University, Rawalpindi.
- Research Supervisor, 5 Mphil Students (Continue), Department of Zoology/ Biology, PMAS Arid Agriculture University, Rawalpindi.
- Research scholar (April 2012 - June 2013)
Cancer Genetics Lab, Department of Biosciences, COMSATS Institute of Information Technology, Islamabad.
- Research Fellow (October 2011- March 2012)
Metastasis and Angiogenesis Research group (MARG), Department of Surgery, University Hospital Wales, Cardiff, UK.
- Research fellow (2007-2008)
Cell Biology Lab, Quaid-i-Azam University, Islamabad
- Research fellow (2003-2004)

Immunology Lab, Zoology, Government College University, Lahore.

- Teacher (July 2008- September 2008)

Federal Directorate of Education Islamabad, Islamabad.

- Project In charge (Jhelum (March 2005-March 2006)

National Center for Rehabilitation of Child labor, NCRCL,

- One year honorary lectureship in Govt. College for Women, (2004-2005) GCW Jhelum.

➤ **Professional Certificate/ Education**

- **Bachelors in Education** (B.Ed), Science group, 2007. Allama Iqbal Open University, Islamabad.
- **Professional Certificate in Information Technology** (PCIT), 2007. Quaid-i-Azam University, Islamabad.

➤ **Achievements**

- Won Governor Scholarship 2002-2003, for Masters program (part1)
- Won Chief Minister Scholarship 2003-2004, for Masters program (part2)
- Won Quaid e Azam University Semester Scholarship for 1st position in M.phil, Department of Plant Sciences (2006).
- Won HEC Indigenous Scholarship, Batch IV, MPhil leading to PhD (2008-2012).
- Won International Research Support Initiative Programme (IRSIP) Scholarship (2011-2012).
- Won Research productivity award 2011, COMSATS Institute of Information Technology Islamabad, Pakistan.
- Won Research productivity award 2012, COMSATS Institute of Information Technology Islamabad, Pakistan.
- Won Research productivity award 2013, COMSATS Institute of Information Technology Islamabad, Pakistan.

➤ **Membership**

- Biological Society, Govt. College University Lahore, (2002-2004) Vice President.
- Member of Pakistan Botanical Society Pakistan.

- Member Maintenance Committee, Girls Hostel Government College University, Lahore, (2002-2004)

➤ **Conferences and Workshops**

Member Organizing Committee (Student), Seminar Series COMSATS Institute of Information Technology, Pak China Business forum, 23-26 March, 2013.

Presentation in Winter Meeting of Metastasis and Angiogenesis Research group (MARG), Department of Surgery, University Hospital Wales, Cardiff, UK. (16th Dec., 2011).

Workshop on Analysis of Research Data using SPSS, COMSATS Institute of Information Technology, Islamabad, (July 11- July 15, 2011)

Poster presented at 2nd Annual Biosciences Poster Exhibition and Competition (BIOPEC), CIIT- Islamabad. (April, 2011).

Poster presented at 1st Annual Biosciences Poster Exhibition and Competition (BIOPEC), CIIT- Islamabad. (May, 2010).

Poster presented at BICMAPE Science Conference, CIIT, Abbottabad. (July 28-29, 2009)

Sixth International Biennial Conferences of Microbiology, March 18-21, 2007, Quaid-i-Azam University, Islamabad.

National Training Seminar on “Biosafety and Biosecurity Initiatives”, June 18-19, 2007, PARC, Islamabad

National Seminar on “Effect of Pollution on Water Quality and Aquatic Life”, NARC, June 26-27, 2007

2nd National Conference of Biology. GCU Lahore (April 22-24, 2004)

➤ **List of Publications**

▪ **2015**

Wazir U, Sanders AJ, Wazir A, **Baig RM**, Jiang WG, Ster IC, Sharma AK, Mokbel K. Effect of the knockdown of death-associated protein 1 expression on cell adhesion, growth and migration in breast cancer cells. *Oncology Reports* 33(3):1450-8.2015.

▪ **2014**

Sabir M, **Baig RM**, Ali K, Mahjabeen I, Saeed M, Kayani MA. Retinoblastoma (RB1) pocket domain mutations and promoter 5 hyper-methylation in head and neck cancer. *Cellular Oncology*, 37 (3), 203-213. 2014

Ali K, Mahjabeen I, Sabir M, **Baig RM**, Zafeer M, Faheem M, Kayani MA. Germline Variations of Apurinic/Apyrimidinic Endonuclease 1 (APEX1) Detected in Female Breast Cancer Patients. *Asian Pac J Cancer Prev*, 15(18), 7589-95. 2014

Qureshi Z, Mahjabeen I, **Baig RM**, Kayani MA. Correlation between Selected XRCC2, XRCC3 and RAD51 Gene Polymorphisms and Primary Breast Cancer in Women in Pakistan. *Asian Pac J Cancer Prev*, 15(23): 10225-9. 2014

Kayani MA, Khan S, **Baig RM**, Mahjabeen I. Association of RAD 51 135 G/C, 172 G/T and XRCC3 Thr241Met Gene Polymorphisms with Increased Risk of Head and Neck Cancer. *Asian Pac J Cancer Prev*, 15 (23), 10457-10462. 2014

▪ 2013

Baig RM, Mahjabeen I, Sabir M, Masood N, Ali K, Malik FA, Kayani M.A. Mutational spectrum of Gelsolin and Its down regulation is associated with breast cancer. *Disease Marker* 34 (2), 71–80. 2013.

Wahid M, Mahjabeen I, **Baig RM**, Kayani MA. Expression of CYP1A1 and GSTP1 in Human Brain Tumor Tissues in Pakistan. *Asian Pac J Cancer Prev*, 14 (12), 7187-7191. 2013

Mahjabeen I, **Baig RM**, Sabir M, Kayani M.A. Genetic and expressional variations of APEX1 are associated with increased risk of head and neck cancer. *Mutagenesis* 28(2), 213-8. 2013.

Sabir M, **Baig RM**, Mahjabeen I, Kayani MA. Significance of Cyclin D1 polymorphisms in patients with head and neck cancer. *Int J Biol Markers* 28(1), 49-55. 2013.

Mahjabeen I, **Baig RM**, Masood N, Sabir M, Inayat U, Malik FA, Kayani MA. Genetic variations in XRCC1 gene in sporadic head and neck cancer (HNC) patients. *Pathology Oncology Research*, ISSN 1219-4956. 19(2), 183-8. 2013.

▪ 2012

Baig RM, Sanders AJ, Kayani MA and Jiang WG. Association of Differentiation-Related Gene-1 (DRG1) with Breast Cancer Survival and *in vitro* Impact of DRG1 Suppression. *Cancers*, 4, (3), 658-672. 2012

Mahjabeen I, **Baig RM**, Masood N, Sabir M, Inayat U, Malik FA, Kayani MA. Novel mutations of OGG1 base excision repair pathway gene in laryngeal cancer patients. *Familial Cancer* 11(4):587-93. 2012

Sabir M, **Baig RM**, Mahjabeen I, Kayani MA. Novel germline CDK4 mutations in patients with head and neck cancer. *Hereditary cancer in clinical practice* 10:11. 2012.

Sabir M, **Baig RM**, Mahjabeen I, Saeed M, Malik FA, Kayani MA. Rb1/105 gene alterations and head and neck carcinogenesis. *Molecular biology reports* 39(10): 9573-81. 2012

- **2011**

Baig RM, Mahjabeen I, Sabir M, Masood N, Hafeez S, Malik FA, Kayani MA. Genetic Changes in PTEN Gene and their Association with Breast Cancer in Pakistan. *Asian Pacific Journal of Cancer Prevention*, Vol 12, 2365-2370. 2011.

Mahjabeen I, **Baig RM**, Masood N, Sabir M, Malik FA, Kayani MA. OGG1 Gene Sequence Variation in Head and Neck Cancer Patients in Pakistan. *Asian Pacific J Cancer Prev*, 12, 2779-2783, 2011.

Masood N, Malik FA, Mahjabeen I, **Baig RM**, Kayani MA. A novel CYP1A1 gene polymorphism and the risk of head and neck cancer in Pakistani population. *African Journal of Biotechnology*; 10 (27) 5273-5280. 2011

Masood N, Kayani MA, Malik FA, Mahjabeen I, **Baig RM**, Faryal R. Genetic Variations in Carcinogen Metabolizing Genes Associated with Oral Cancer in Pakistani Population. *Asian Pacific Journal of Cancer Prevention*;12 491-495.2011.

- **2010**

Masood N, Mahjabeen I, Malik FA, **Baig RM**, Kayani MA. Association of GSTM1 and GSTT1 gene deletions with risk of head and neck cancer in Pakistan: a case control study. *Asian Pacific Journal of Cancer Prevention*; 11(4): 881-5. 2010.

➤ **References**

- Dr M.A.Kayani, Associate Professor, Department of Biosciences. COMSATS Institute of Information Technology, Park Road, Chak Shehzad, Islamabad. mkayani@comsats.edu.pk.
- Professor Wen G. Jiang, MB, BCh, MD. Metastasis & Angiogenesis Research Group (MARG). Department of Surgery, University Hospital Wales, Cardiff, UK. jiangw@cf.ac.uk.
- Dr. Rani Faryal, Associate Professor, Department of Microbiology. Quaid e Azam University, Islamabad. ranifaryal@gmail.com.

- Dr. M. Faraz A. Malik, Assistant Professor. Department of Biosciences. COMSATS Institute of Information Technology, Park Road, Chak Shehzad, Islamabad. famalik@comsats.edu.pk.