

## Forensics: Science of Justice in Pakistan

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### Abstract

The discipline of forensic science is pivotal to the criminal justice system but still considered as a new science in Pakistan and sounds unfamiliar word. The future of Forensics is very bright but requires a lot of efforts from many stakeholders. The major lead should be taken by the universities and research institutions to incorporate this new discipline in their scope of work. At the government level, a few organizations are providing limited forensic services and also minute, isolated contribution of the private sector, with almost insignificant support from universities and research institutes. This brief review discusses the possibility of introduction of a full degree programme in Forensics at a university level.

### INTRODUCTION

Forensic science plays a fundamental role in the criminal justice system, providing crucial information about the evidence to the trier of fact. There has been a drastic increase in application of forensic science during the last few decades; however, forensic existed in human history in raw form since antiquity with unsystematic and non-standardized practices. The modern era of research in the field grew tremendously after the term DNA fingerprinting was coined at the University of Leicester in 1984<sup>[1]</sup>. The scope of forensics is quite broad, and any scientific discipline can be applied into a legal situation, but some of the frequent domains are forensic biology, forensic chemistry, forensic toxicology, etc. This science covers an array of disciplines and is capable of revealing facts such as who committed a crime, whether or not a crime was actually committed, and what precisely happened at the crime scene.<sup>[2]</sup> The outcome of forensic analysis often can be the line of difference between exoneration and conviction in a court of law. The greater advantage comes when with help of these forensic tools and techniques, legal personnel are capable of recreating the whole series of events of particular happenings on the basis of scientific grounds that cannot be challenged, lets real guilty behind the bar and acquit innocent as clean as a whistle. The validity and strength of those results rely fully on the knowledge, skills, and experience of the forensic scientists who remained part of team in the collection, preservation, analysis, and interpretation of physical evidence.<sup>[3]</sup> Both Judiciary and prosecutors always grant a great value to opinions of forensic experts in their cases.

The overall growth of this important discipline shows great diverse picture around the globe. In developed countries the advancement of technology and rise of organized crimes led to an early wave of realization, they focused more on the scientific explanation of any crime and incident either it's a terrorists activity or an accident like plane crash. The outcomes of their efforts are of great worth and serving the humanity. We often have glimpse of its impact in our everyday life. Investigating an airplane crash not only reveals the facts behind this tragedy but also it introduces new level of security and technology for passengers, e.g. the investigation of Air France Flight 447(abbreviated AF447) in 2009.<sup>[4]</sup> The investigation of mystery serial killer may lead to establish new parameters to save society

in future, e.g. in case of serial killer Ted Bundy who was guilty for murdering more than 30 individuals, there was slight physical proof to link him to the crimes when he was arrested in 1975.<sup>[5]</sup> In the year 2000, hackers instigated the well-known DoS (denial-of-service) attacks that cost about \$3 billion in revenue in USA. The incident that lasted for 48-hours in duration in February 2000, were particularly fearsome to service providers. But now the computers have more security features based on outcome of forensic investigation of this case<sup>[6]</sup>. There are hundreds of examples that can be placed here; overall it impacted the developed countries government to realize significance of this domain and has participated greatly to high conviction rate.

Now, in developed countries forensics is a very well established science and a number of standardized laboratories are functional. This includes both public sector laboratories from state to district level and research laboratories at the universities. The academia made their contribution through research institutes and universities to keep on track of glory. The universities are offering professional degrees from bachelors to doctorate level; therefore, a strong link exists between the educational institutes, field staff, law makers and forensic laboratories. The research in forensics is both basic and applied and a forensic scientist needs to have a strong fundamental background in the natural sciences. Demand for more and better-skilled forensic experts is growing. There are many areas in forensic science and a lot of challenging career options. A study from USA informed that job expansion for forensic science technicians will grow much faster than usual, with 13,000 jobs available in 2006 and a projected 31 percent rise, or 17,000 jobs, projected by 2016.<sup>[7]</sup>

In 1950, the University of California offered one of the earliest programmes in forensic science and is still functional. Since its inception, forensic science education has to confront a lot of challenges including fragmentation in the educational curricula and lack of funding, although there have been islands of excellence providing state of the art teaching and training of professionals. However, in the recent years, major steps have been taken in bringing uniformity, standardization and quality in the educational programmes.

In Pakistan, as far as research and development in this field is concerned, the scenario is very contradictory to that in developed world. Pakistan, with a population of 190 million, has been at the

forefront in the war on terror since the dreadful incidents of September 11, 2001. Law and order is one of the major concerns in Pakistani society after 9/11.<sup>[8]</sup> Unfortunately Pakistan, a terrorism victim country, was already suffering a low conviction rate. The path of investigation is not based on modern technological parameters and we are still stuck to same old traditional methods of investigation. In many cases, including the assassination of Pakistan's Former Prime Minister Benazir Bhutto's during an election campaign in 2008, the lack of forensics capabilities led to destruction of critical evidence. Law and order in common parlance has come to mean the provision of a strong police force and a concern with reducing crime and vandalism. It generally refers to those rules and norms that govern a community.<sup>[9]</sup> We are well aware that terrorism is always outcome of injustices in any form.

Apart from legal application of forensic science, Pakistan is a land of some great world heritage sites and among them a few are representing the great historical value of human civilization, the Archaeological Ruins at Moenjodaro, Taxila Civilization and Harappa<sup>[10-11]</sup>. However, a country so rich in its heritage lacks the forensic experts in sufficient numbers in the field of archeology and anthropology. These examples prove how delay in decisions to right direction let the matters to keep moving on wrong course. In many important national issues, we have to look forward for foreign experts. The forensics still sounds an unfamiliar word to many even to policy makers. The efforts of some senior law and enforcement personnel are now turning fruitful. The government is making some efforts to establish state of the art forensic departments with the expert aid of foreign donors which is a revolutionary step and will go a long way in dispensation of justice. But academia is still reluctant to play its central part and in understanding its role in development of this field. The universities must come out of their traditional research pattern. The need for research in forensics is as significant as in the fields of agriculture and power resource management. The field for research is quite opportunistic and a lot of work can be done in a very short span of time.

Adequate pool of trained forensic scientists is critical to achieving the goal of using any physical evidence as a routine law enforcement tool. Integrity and independence of mind are key requisites for a forensic expert. According to the forensic experts this field joins learning and pedagogy. Research in this area will have a long term impact on forensics and will enhance educational and competitive aspects of professionals. However, the decision makers have paid no attention to the vital element of 'Research' in forensics since long.<sup>[12]</sup>

We are in great need of an established forensic set up which is equivalent to international standards. In recent years, 'Terrorism' has become an extremely destructive phenomenon in Pakistan. The extent of terrorist activities is beyond the imagination of common person living in developed countries; suicide attacks, target killings, bomb blasts, ransom, murder, cross border terrorism, etc., are everyday news like weather reports around the world. The direct and indirect economic costs of terrorism from 2000 to 2010 are projected to be US \$68 billion<sup>[13]</sup> But there is no substitute of human deaths that Pakistan suffered in this war of terror. More than 5,000 security personnel have been martyred in this war and if we add the civilian casualties the figure would turn to nightmare. Our policy to encounter terrorism and establish the forensic science field must be on firm grounds. The forensic science practices are best learnt through formal education and

training and an adequate performance of research in the field. There are three aims of education and training in the field; (1) The educational programmes will offer the basic knowledge and equip our next generation; (2) The professionals working in the laboratories need continued medical education so they are able to understand the advancements in the field; and (3) The policy makers and end users need to be sensitized.

As the tasks forensic experts perform at the crimesight and in the laboratory are continually used in the court, it is very important that the skills and knowledge of forensic scientists exhibit a strong scientific background and an indisputable understanding of criminalistics<sup>[14]</sup>. Personal honesty, integrity, and ethics are also of paramount importance because of the involvement of criminal justice system. Thus, it is of immense importance to link higher education with the increasing challenges of the field. It is very important to sensitize people about the roles and functions of a forensic programme and how it can serve community and institutes directly.<sup>[15]</sup>

In past few years, one of the major inclinations observed in students while selecting a specific course of education is thinking what is the job aspect of it. This concern is quite justified at their end as it has been seen that some degrees are greatly losing their carrier based value and at the same time education is turning more expensive like a luxury. The advantage of forensic research in any of its domain is that the equipment and techniques they use for research do not limit them for this specified area. Like if a researcher conducts his work on the paints and dyes by use of analytical chemistry tools, researcher would also be equally eligible for career opportunities in respective fields of analytical chemistry including forensic divisions. The researchers must also realize that any research in the field of forensic would not limit its application to the law and enforcement agencies and in near future that part of research might be commercialized. We see many modern day inventions which initially were only restricted for defense purposes and are now commercial consumer products. In addition to the field knowledge, a forensic expert is expected to possess a good character. The reason is quite obvious that all the outcome of expert would be presented in the court and must meet both legal requirements and scientific standards simultaneously.<sup>[16]</sup>

## CONCLUSION

In conclusion we can say that a strong educational background in the natural sciences, personal characteristics such as honesty, integrity and honesty, and additional professional abilities are essential to train a candidate for a career in forensic science. It is requested to the government to encourage academia if they take step by launching any programme associated to forensics and announce special packages as reward of research in this field. The Higher Education Commission (HEC) must adopt policy to focus on this need. They have autonomy to announce the special scholarships focusing higher studies in forensics both indigenous and foreign. This would be a good option to encourage the students and well as faculty to choose it as their research area. The higher education policy makers in Pakistan must also make some policy to facilitate the field of forensics in collaboration with the law enforcement organizations.

## Competing interests

None

## REFERENCES

1. Jeffreys A, Wilson V, Thein S. Individual-specific 'fingerprints' of human DNA. *Nature* 1985; 316 (6023): 7679.
2. Barnett PD. *Ethics in forensic science: professional standards for the practice of criminalistics*. 2001, Boca Raton: CRC Press.
3. Saferstein R. *Criminalistics: an introduction to forensic science (10th ed.)* 2011, Upper Saddle River, NJ: Prentice Hall.
4. Safety Investigation Following the Accident on 1<sup>st</sup> June 2009 to the Airbus A300-203, Flight AF 44. Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile. Available at <http://www.bea.aero>. Accessed on February 10, 2013.
5. Criminal Justice Schools. 10 Famous Criminal Cases Cracked by Forensics. Available at <http://www.criminaljusticeschools.org/blog/10-famous-cases-cracked-by-forensics> (Accessed on March 12, 2013)
6. *Computer Forensics: Computer Crime Scene Investigation*, Second Edition. John R. Vacca, Charles River Media, Inc. Boston, Massachusetts
7. Bureau of Labor Statistics, Department of Labor. "Science Technicians." In: *Occupational Outlook Handbook, 2008-09 edition*. Available at [www.bls.gov/oco/ocos115.htm#projections\\_data](http://www.bls.gov/oco/ocos115.htm#projections_data) accessed on February 20, 2013.
8. Noor A, Ahmad M, Ullah JA. An investigation into the causes and consequences of law and order situation in Khyber Agency, Pakistan. *Global Journal of Interdisciplinary Social Studies*. 2013;2(1):6-11
9. Azhar HN. Impact of Lawlessness on Economic Development and Role of Effective Policing. *Journal of Pakistan Research Repository*. 1997, pp450.
10. Rita PW. *The ancient Indus: urbanism, economy, and society*, Cambridge University Press, 2010, p. 2.
11. Francis DKC, Mark J, Vikramaditya P. *A Global History of Architecture*. Hoboken, NJ: J. Wiley & Sons. 2006, pp. 2832. ISBN 0-471-26892-5.
12. Jr. Harris JE, Jr. Kropp RP, Rosenthal RE. The Tournament as Laboratory: Implications for Forensic Research. *The National Forensic Journal*, IV (Spring 1986), pp. 13-22.
13. Peace Kashmir Organization. Growing Terrorism in Pakistan. Available at <http://www.peacekashmir.org/views-articles/2012/1216-growing-terrorism-in-pakistan.htm> [Accessed on February 12, 2013]
14. Hart S. Education and Training in Forensic Science: A Guide for Forensic Science Laboratories, Educational Institutions, and Students. *Crime-Scene-Investigator*. 2004. Available at <http://www.crime-scene-investigator.net/NIJ-forensicscienceeducation.pdf> accessed on March 1, 2013
15. Marjanovic D, Konjhodzic R, Butorac SS, Drobnic K, Merkas S, Lauc G, Primorac D, et al., Forensic DNA databases in Western Balkan region retrospectives, perspectives and initiatives. *Croat Med J*. 2011; 52(3): 235244.
16. Ehrlich T. In B. Jacoby (Ed.) *Service-learning in higher education: Concepts and practices* (pp. xi-xvi). 1996, San Francisco, CA: Jossey Bass.