

## Qualifications

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<b>PhD in Bioinformatics (2008)</b>	Cardiff University	UK
<b>MS in Bioinformatics (2003)</b>	Northeastern-Boston University	USA
<b>Master of Pharmacy (1995)</b>	University of Dhaka	Bangladesh
<b>Bachelor of Pharmacy (1994)</b>	University of Dhaka	Bangladesh

## Research Experience

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<b>Lead Bioinformaticist</b>	(2013 – Present)
<i>Institute of Translation, Innovation, Methodology and Engagement (TIME), Cardiff University, UK</i>	
<b>Marie Curie International Outgoing Fellow</b>	(2010 - 2012)
<i>Broad Institute of Harvard and MIT, USA</i>	
<b>Research Fellow in Bioinformatics</b>	(2003- 2010)
<i>Institute of Cancer Genetics, Cardiff University, UK</i>	
<b>Visiting Scientist</b>	
<i>National University of Ireland, Ireland</i>	(Oct'09–Jan'10)
<i>Institute for Bioinformatics, Bielefeld University, Germany</i>	(Nov'08– Feb'09)
<b>Intern Bioinformaticist</b>	(Summer 2002)
<i>Hewlett Packard (HP), New Hampshire, USA</i>	
<b>Research/Teaching Assistant</b>	(2000-2002)
<i>Biomedical Sciences Department, Northeastern University, USA</i>	

## Awards & Grants

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- Welsh Crucible 2013 (Awarded to 30 most promising future research leaders for Wales)
- Marie Curie International Outgoing Fellowship (€300K) of European Research Agency
- “The Stem Cell Orchestra” £10K grant from Welsh Interdisciplinary research fund
- Cancer Study Grant (\$6K) by Union for International Cancer Control (UICC)

## Review Articles

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- 1) Paul J Smith, **Imtiaz A Khan**, Rachel J Errington. (2009) *Cytomics and cellular informatics – revealing the asymmetry properties of biological systems*. **Drug Discovery Today**. 14(5-6): 271-7 [PMID: 19150508].
- 2) Smith PJ, **Khan IA**, Errington RJ. (2007) *Cytomics And Drug Development*. **Cytometry A**. 71A:349–351. [PMID: 17323350]

## Research Articles @ Biology- Computer Sciences Interface

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- 1) **IA Khan**, A Fraser, M-A Bray, PJ Smith, NS White, AE Carpenter and RJ Errington (2013) ProtocolNavigator: Boosting confidence in data sharing within an interdisciplinary research landscape. **Nature Methods** (submitted)
- 2) **Khan IA**, Husemann P, Campbell L, White NS, White R, Smith PJ, Errington RJ. (2007) *ProgeniDB: A novel cell lineage database for generation associated phenotypic behavior in cell-based assays*. **Cell Cycle** 6:7, 868-74 [PMID: 17387278]. **enlisted resource of National Cancer Institute, UK**
- 3) Macgroger S & **Khan IA**. (2006) *GAIA: A Simple Web-Based Application for Interaction Analysis of Case-Control Data*. **BMC Medical Genetics** 7:34. [PMID: 16595019] Collaboration: **Cited 19 times** (Google scholar)
- 4) **Khan IA**, Mort M, Buckland PR, Cooper DN, O'Donovan MC, Chuzhanova NA. (2006) *In silico discrimination of single nucleotide polymorphisms and pathological mutations in human gene promoter regions by means of local DNA sequence context and regularity*. **In Silico Biology** 6, 0003. [PMID: 16789908] **Cited 7 times** (Google scholar)
- 5) **Khan IA**, Fisher J, Smith PJ, Errington RJ. (2007) *A Bioinformatics approach for the interrogation of molecular events in single cells: transforming fluorescent timelapse microscopy images into numbers*. **BMC Systems Biology** 1(Suppl 1):P31
- 6) **Khan IA**, Hedley CJ, White NS, Ali R, Chappell MJ, Evans ND, Campbell L, Marquez N, Fisher J, Smith PJ, Errington RJ. (2006) *A novel integrative bioinformatics environment for encoding and interrogating timelapse microscopy images*. In: Feng, DD ed. *Modelling and Control in Biomedical Systems*, Reims, France. Amsterdam, **ELSEVIER**, pp 273-8

- 7) Errington RJ, Chappell S.C, **Khan IA**, Marquez N, Wiltshire M, Griesdoorn, VD, Smith, PJ. (2013) Time-lapse microscopy approaches to track cell cycle and lineage progression at the single-cell level. **Curr Protoc Cytom.** 12: 12.4 [PMID:23546776]
- 8) Smith PJ, Marquez M, Wiltshire M, Chappell S, Njoh K, Campbell L, **Khan IA**, Silvestre OR, Errington RJ. (2007) *Mitotic Bypass Via An Occult Cell Cycle Phase Following DNA Topoisomerase II Inhibition In p53 Functional Human Tumour Cells.* **Cell Cycle.** 6:16, 2071-81 [PMID: 17721081]

### Research Articles @ Biology- Mathematics Interface

- 1) **Khan IA**, Lupi M, Campbell L, Chappell SC, Brown MR, Wiltshire M, Smith PJ, Ubezio P, Errington RJ. (2011) *Interoperability of Time Series Cytometric Data: A Cross Platform Approach for Modeling Tumor Heterogeneity.* **Cytometry A**, **2011**, **79(3)** [PMID: 21337698] **Featured in this issue**
- 2) Ricardo SM, **Khan IA**, Madden MG (2010) Revealing the Origin and Nature of Drug Resistance of Dynamic Tumour Systems. *Int. J. Know. Disc. in Bioinfo.* 1:4. 26-53.
- 3) Santiago-Mozos R., **Khan I.A.**, Madden M.G. (2010) Is Topotecan Effective at Killing Cancer Cells? **IEEE Int. Conf. on Data Mining**, Sydney, Australia. 732 - 739
- 4) Brown MR, Summers HD, Rees P, Chappell SC, Silvestre OF, **Khan IA**, Smith PJ, Errington RJ (2010) *Long-term time series analysis of quantum dot encoded cells by deconvolution of the autofluorescence signal.* **Cytometry A** 77A: 10. 925–932 [PMID: 20623689]
- 5) Errington RJ, Brown MR, Silvestre OF, Njoh KL, Chappell SC, **Khan IA**, Rees P, Wilks SP, Smith PJ, Summers HD. (2010) *Single cell nanoparticle tracking to model cell cycle dynamics and compartmental inheritance.* **Cell Cycle** 5:9(1). [PMID: 20016285]
- 6) Chappell MJ, Evans ND, Errington RJ, **Khan IA**, Campbell L, Ali R, Godfrey KR, Smith PJ. (2008) *A coupled drug kinetics-cell cycle model to analyse the response of human cells to intervention by topotecan.* **Comput Methods Programs Biomed.** 89(2):169-78. [PMID: 18082908]
- 7) Perez-Velazquez J, Evans ND, Chappell M, Errington RJ, Smith PJ, **Khan IA**. (2008) *A Mathematical Model of Cyclin B1 Dynamics at the Single Cell Level in Osteosarcoma Cells.* **17th IFAC World Congress**, Seoul, Korea. 17:1

### Book Chapter

- 1) Smith PJ, Chin SF, Njoh K, **Khan IA**, Chappell MJ, Errington RJ, Cell cycle checkpoint-guarded routes to catenation-induced chromosomal instability, In: **Eukaryotic Cell Cycle**, John A. Bryant and Dennis Francis ed., Taylor and Francis, 215-238, 2007.

### Newspaper Article

“Regenerating human body parts from stem cells” published in **Western Mail** (Welsh National Daily).

### Teaching & Research Supervision Experience

- Module leader for Data Mining and Machine Learning module of Bioinformatics and Genetic Epidemiology MSc. programme at Cardiff University. Also contribute/d to the following modules -
  - DNA and protein sequence analysis
  - Programming in Bioinformatics
- Supervised 5+ students on their Bioinformatics MSc projects.
- Contributed towards the course curricular development of the aforementioned MSc programme during its inception year of 2003.

### Training/Workshop

Welsh Crucible (2013 Times Higher Education Leadership Award winner)	Wales, UK
PI Leadership Programme	Oxford, UK
Human Factors – The Science and Art of Effective Application Design	Boston, USA, 12
Human Subjects Training	Boston, USA, 10
Practical High Throughput Computing for Bioinformatics	London, UK, 07
Matlab Fundamentals and Programming Techniques	Cambridge, UK, 06
Working With Human Genome	EBl, UK, 04

### **Conference & Meeting Presentation Experience**

International Provenance and Annotation Workshop ( <i>Invited</i> )	Cologne, Germany 14
Welsh Higher Education Brussels Delegate ( <i>Invited</i> )	Brussels, Belgium 13
Helmholtz Institute of Computational Biology ( <i>Invited</i> )	Munich, Germany 13
International Biocuration conference	Cambridge, UK 13
Visualizing Biological Data, VIZBI	Cambridge, USA 13
European Microscopic Congress	Manchester, UK 12
GE Health Care ( <i>Invited</i> )	Cardiff, UK 12
Oxford eScience Center, Standards on Bio. Exp. meeting ( <i>Invited</i> )	Oxford, UK 11
National Institute of Standards and Technology, Cell Assay Std. ( <i>Invited</i> )	Maryland, USA 11
CYTO 2011 Conference	Baltimore, USA 11
Cold Spring Harbor High Throughput Imaging Meeting	New York, USA 10
South West and Wales Regional Systems Biology meeting ( <i>Invited</i> )	Bristol, UK 09
Open Microscopy Environment (OME) Users Group Meeting ( <i>Invited</i> )	Paris, France 09

### **Professional Association**

- Union for International Cancer Control (UICC)
- International Society for Advancement of Cytometry (ISAC) Data Standard Task Force
- Reviewer for Bioinformatics journals and grants

### **Pharmacy Related Appointments**

Summer 2001	<b>Walgreen Pharmacy, Boston, USA</b>	<b><i>Intern Pharmacist</i></b>
Summer 2000	<b>Walgreen Pharmacy, Dallas, USA</b>	<b><i>Intern Pharmacist</i></b>
1996 - 1999	<b>Armed Forces Hospital, Kuwait City, Kuwait</b>	<b><i>Hospital Pharmacist</i></b>