

Dr. Imtiaz Ali Khan

Marie Curie Fellow

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Research Experience

Marie Curie Fellow of European Research Agency (FP7)

(2010 - Present)

Broad Institute of MIT and Harvard, Cambridge, USA
Cardiff University, Cardiff, UK

Formulating a novel cellular informatics infrastructure to permit a seamless exchange – interoperability - between data derived from cellular analysis technologies ranging from fluid flow systems to advanced imaging - so that such data is within accessible structures for hypothesis testing.

Research Fellow in Bioinformatics

(2003- 2010)

Department of Pathology, Cardiff University, Cardiff, UK.

Lead developer of a cellular informatics infrastructure that exploits present imaging technologies (e.g. timelapse microscopy) with the objective of transforming images to knowledge. This infrastructure is now a registered resource of ONIX, the informatics initiative by NCRI, UK.

Intern Bioinformaticist

(2002)

Hewlett Packard (HP), New Hampshire, USA.

Bioinformatics software design in accordance with academic needs.

Research Assistant

(2000-2002)

Biomedical Sciences Department, Northeastern University, Boston, USA.

Long-circulating and targeted pharmaceutical carriers for drugs and diagnostics in a variety of in vitro and in vivo models

Qualifications

PhD in Bioinformatics (2008)

Cardiff University

UK

MS in Bioinformatics (2003)

Northeastern-Boston University

USA

Master of Pharmacy (1995)

University of Dhaka

Bangladesh

Bachelor of Pharmacy (1994)

University of Dhaka

Bangladesh

Award

- Marie Curie International Outgoing Fellowship of EUROPEAN RESEARCH AGENCY, *Brussels, Belgium*.
- Yamagiwa-Yoshida Memorial International Cancer Study Grant by THE INTERNATIONAL UNION AGAINST CANCER (UICC), *Geneva, Switzerland*.
- PerkinElmer Travel grant, *Paris, France*.

Review Articles

- 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

- 1) **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].
- 2) **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
- 3) 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]
- 4) 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]

- 5) **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]
- 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

Research Articles @ Biology- Mathematics Interface

- 1) 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* 2010 Jul 8. [PMID: 20623689]
- 2) 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]
- 3) Chappell MJ, Evans ND, Errington RJ, **Khan IA**, Campbell L, Ali R, Godfrey KR, Smith PJ. *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]
- 4) Perez-Velazquez J, Evans ND, Chappell M, Errington RJ, Smith PJ, **Khan IA**. *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

Teaching & Research Supervision

- o Taught post graduate Bioinformatics algorithm and sequence analysis courses to MSc students at Cardiff University.
- o Supervised more than four post graduate students on their Bioinformatics MSc projects.

Conference Presentations

CYTO 2010 Conference	Seattle, USA 10
Open Microscopy Environment (OME) Users Group Meeting	Paris, France 09
Computational Methods in Systems Biology	Edinburgh, UK 07
Systems Biology-Bioinformatics-Synthetic Biology (BioSysBio)	Manchester, UK, 07
6th IFAC Symposium on Modeling and Control in Biomedical Systems	Reims, France, 06
4 th European Conference on Computational Biology	Madrid, Spain, 05
12 th Intelligent System for Molecular Biology (ISMB 2004)	Glasgow, UK, 04
IBC's 7 th Annual World Congress Drug Discovery Technology	Boston, USA, 02
TIGR's 14 th International Genome Sequencing and Analysis Conference	Boston, USA, 02

Training/Workshop

Java Certificate Course	Cardiff, UK, 07
Practical High Throughput Computing for Bioinformatics	London, UK, 07
Matlab Fundamentals and Programming Techniques	Cambridge, UK, 06
Working With Human Genome	EBI, UK, 04
A Field Guide to GenBank and NCBI Molecular Biology Resources	NCBI, USA, 02

Pharmacy Related Appointments

06/01-09/01	Walgreen Pharmacy, Boston, USA	Intern Pharmacist
06/00-08/00	Walgreen Pharmacy, Dallas, USA	Intern Pharmacist
05/96-08/99	Armed Forces Hospital, Kuwait City, Kuwait	Hospital Pharmacist