Pooran DEWARI
Postdoc, University of Edinburgh

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📍 Edinburgh, UK   ℹ UK ILR work permit

Trained as a cancer molecular biologist and bioinformatician, I have collaborated with leading biotech companies (IDT, Twist Bioscience, Sphere Fluidics) to develop CRISPR genome-editing pipelines for efficient and scalable tagging of genes in mammalian stem cells. Using ChIP-seq and RNA-seq approaches, I am currently investigating how neurodevelopmental transcription factors fuel proliferation of brain tumour stem cells. Keen on transitioning into bioinformatics job and work in team environment wherein I can apply my research skills and interests.

☰ SKILLS

Industry collaboration	Collaborated with Integrated DNA Technologies, USA (2016-2018) and developed a CRISPR pipeline for epitope tagging in stem cells. Currently working in collaboration with Twist Bioscience and Sphere Fluidics (2018- present) to develop microfluidic benchtop CRISPR module for knock-in of fluorescent reporter genes in mammalian cells.
Bioinformatics	**ChIP-seq analysis** : QC and align reads to genome, peak calling, motif discovery, GO analysis, heatmap generation, data visualisation
	RNA-seq analysis : Align reads using STAR, DESeq differential expression analysis, data visualisation
	R language : tidyverse data wrangling, visualisation using ggplot2, analysis of RIME and ChIP-SICAP MS data using R packages, other packages : ChIPseeker, clusterProfiler
	Programming languages : Python (intermediate level)
	Other software programs : BEDTools, bamCoverage, Intervene, LaTeX, Snapgene, ImageJ, CellProfiler
NGS sample preparation	Perform ChIP pull-down and prepare barcoded libraries for sequencing
CRISPR genome-editing	Epitope and fluorescent reporter tagging in mammalian stem cells, gene knock-out
Protein partners	Identify protein partners using RIME
Other techniques	Fluorescence microscopy, Gibson and gateway cloning, real-time qPCR, DNA and RNA extraction, Western Blotting

💼 EDUCATION AND PROFESSIONAL EXPERIENCE

June 2020- present

Health Data Science course, UNIVERSITY OF EDINBURGH, UK
> Analyse health data using R programming language, including summarisation, visualisation and interpretation
> Learn principles and methods of data science in health

2014 - present

Postdoc, CRM-UNIVERSITY OF EDINBURGH, UK
> In collaboration with IDT Inc. (USA) developed RNP-based CRISPR method and bioinformatics tool for scalable epitope knock-in in mammalian stem cells (2016-2018)
> Scaled-up mCherry reporter knock-in in GSCs using CRISPR RNP approach (in collaboration with Twist Bioscience and Sphere Fluidics from 2018- present)
> Identified genomic targets of key neurodevelopmental TFs in patient-derived glioma stem cells (GSCs) using ChIP-seq
> Computed overlap between TFs binding to chromatin and their intersection with evolutionary conservation (phyloP score) and gene expression (RNA-seq)
> Identified protein partners of TFs in GSCs using RIME

2013- 2014

Postdoc, CENTRE FOR CELLULAR AND MOLECULAR BIOLOGY, India
> Set up zebrafish behavioural assays
> Model zebrafish to study chronic alcoholism
> Optimise ChIP using zebrafish brain tissue

2006-2013	**PhD, Centre for Cellular and Molecular Biology, India**
	> Identified role of yeast histone chaperone Asf1 in pol III transcription by ChIP-seq mapping
	> Studied RNA pol III transcriptional regulation in budding yeast using genetics, biochemistry, and genomics approaches
	> Purified core components of RNA polymerase III machinery- histones, chromatin assembly chaperone Asf1, yeast RNA polymerase III enzyme, yeast transcription factor C (TFIIIC), and developed assays to assemble chromatin in vitro
2004-2006	**MSc, GB Pant University of Agriculture and Technology, India**
	> Final-year research project on 'Development of novel protein and DNA-based markers for identification of bamboo cultivars'
	> Modules included enzymology, intermediary metabolism, principles in genetic engineering, and techniques in molecular biology
2000-2003	**BSc, Kumaun University Nainital, India**
	> Major subjects : Zoology, Botany, and Chemistry

📖 PUBLICATIONS

2020	**Dewari PS** et al. Systematic fluorescent reporter knock-in of human basal RNA polymerase II machinery using all-bespoke CRISPR approach. Manuscript in preparation
2020	Mccarten K, **Dewari PS**, Pollard SM et al. RNA binding protein MYEF2 is a SOX2 interactor and involved in the tumorigenicity of glioblastoma. Manuscript to be submitted
2018	**Dewari PS**, Southgate B, Mccarten K, Monogarov G, O'Duibhir E, Quinn N, Tyrer A, Leitner MC, Plumb C, Kalantzaki M et al. An efficient and scalable pipeline for epitope tagging in mammalian stem cells using Cas9 ribonucleoprotein. Elife 7
2017	Bressan RB, **Dewari PS**, Kalantzaki M, Gangoso E, Matjusaitis M, Garcia-Diaz C, Blin C, Grant V, Bulstrode H, Gogolok S et al. Efficient CRISPR/Cas9-assisted gene targeting enables rapid and precise genetic manipulation of mammalian neural stem cells. Development 144 : 635-648
2016	**Dewari PS**, Ajani F, Kushawah G, Kumar DS, Mishra RK. Reversible loss of reproductive fitness in zebrafish on chronic alcohol exposure. Alcohol 50 : 83-89
2014	**Dewari PS**, Bhargava P. Genome-wide mapping of yeast histone chaperone anti-silencing function 1 reveals its role in condensin binding with chromatin. PLoS One 9 : e108652
2011	Mahapatra S, **Dewari PS**, Bhardwaj A, Bhargava P. Yeast H2A.Z, FACT complex and RSC regulate transcription of tRNA gene through differential dynamics of flanking nucleosomes. Nucleic Acids Res 39 : 4023-4034
Guest Blogger at Addgene	Google Forums Round Up : First Impressions of NgAgo (2016)
	Hassle-free 96-well Format Epitope Tagging Using Cas9 Ribonucleoprotein (2018)

🎓 HONOURS AND AWARDS

2020	Funding for Health Data Science course at Edinburgh University by the Scottish Funding Council (SFC)
2008-2011	Senior Research Fellowship awarded by Council of Scientific and Industrial Research, India
2006-2008	Junior Research Fellowship awarded by Council of Scientific and Industrial Research, India
2005-2006	University Teaching Assistant Fellowship during Masters
2003	Top-rank holder medal in Bachelor science faculty, Kumaun University, India

⌨ CONFERENCES AND TALKS

2018	Invited talk at The Roslin Institute, Edinburgh.
	Talk title : A practical guide to using Cas9 ribonucleoprotein (RNP) for efficient knock-in of protein tags
2018	Part of the UK delegation to enhance collaboration with universities in Japan, Edinburgh–Tsukuba-Kumamoto meetings
2017	Invited talk at the Bristol Neuroscience Forum, University of Bristol, UK.
	Talk title : An efficient and scalable CRISPR/Cas9 pipeline for epitope tagging in mammalian stem cells
2017	Short talk at Berlin Brain Tumor conference, Germany.
	Talk title : An efficient and scalable CRISPR/Cas9 pipeline for epitope tagging in neural and glioma stem cells
2016	Short talk at Edinburgh CRISPR/Cas9 workshop, UK
2011	Attended two-day SciComm workshop organised by The Wellcome Trust-DBT India Alliance, India

🎓 TEACHING AND MENTORING

Edinburgh University	Mentored and supervised four dissertation students in Steve Pollard's lab in my current postdoc position
	Students learned tissue-culture techniques and CRISPR genome-editing in glioma stem cells
	Closely collaborated with Masters student to develop web-based TAG-IN bioinformatics tool
CCMB, India	Supervised two Masters students during my PhD
University Teaching Fellow	Supervised and demonstrated elementary biochemistry experiments to undergraduate students during my Masters degree

❝ REFERENCES

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