Imperial College London

Job Title:	Data Analyst / Developer
Department/Division/Faculty:	Surgery and Cancer / Surgery / Medicine
Campus location:	St Mary's Campus (Paddington)
Job Family/Level:	Professional Services, Level 3b
Responsible to:	Professor Amanda Cross, Head of Cancer Screening and Prevention Research Group (CSPRG)
Line Management responsibility:	Not applicable
Key Working Relationships (internal):	CSPRG Team, Data Protection Office, ICT Security Team, ICT Database Team
Key Working Relationships (external):	NHS Digital, Public Health England, Public Health Wales, National Services Scotland, NHS trusts
Contract type:	Full time and fixed term until 31 December 2020 in the first instance.

Purpose of the Post

The post-holder will work within the Cancer Screening and Prevention Research Group (CSPRG), an internationally renowned, multidisciplinary group undertaking research focusing primarily on the prevention and early detection of bowel cancer. The purpose of the Data Analyst/Developer is to enable the group to collect and process health data in order to produce high quality cancer research. The Data Analyst/Developer has responsibility for processing data in a timely and lawful manner, in compliance with College policies, the GDPR, Data Protection Act 2018 and other UK legislation.

The post-holder will be required to understand the team's data acquisition and storage requirements for studies such as the UK Flexible Sigmoidoscopy Screening Trial (UKFSST) and All Adenomas. They will do this in conjunction with the principal investigators, study managers, data providers, data clerks, statisticians and College ICT team. The post-holder will carry out or co-ordinate the collection and transfer, either in-person or electronically, of sensitive personal data. They will ensure that the group's methods of transferring and storing data are up-to-date and in line with information security best practices.

The post-holder will be required to clean, transform and analyse large and complex medical datasets. This will be done with a variety of data cleaning and programming tools not limited to PL/SQL, Oracle Apex web applications, Python/Django web applications, Microsoft Excel and Microsoft Access. The post-holder will oversee both automated and manual information extraction from medical records in liaison with the data clerks and statisticians.

The post holder will advise the head of the CSPRG on long-term ICT strategy.

Key Responsibilities

Database and application development – 30%

- Maintaining, improving and supporting existing relational databases used for clinical trials.
- Developing, deploying and maintaining custom built applications for new studies.
- Writing up-to-date documentation and tests for all scripts, applications and databases.

Data management – 20%

The post involves management of large complex datasets in various file formats and databases including:
- Ensuring that data is complete, up-to-date, accurate and reliable.
- Assessing the security and storage requirements of new and existing datasets.
- Liaising with external agencies (such as NHS Digital, cancer registries and hospitals) to obtain datasets. This involves liaising with the data controllers and compliance departments of these organisations and ensuring that our systems comply with their requirements and guidelines.

- Creating programs to process large volumes of data in various file formats.
- Extracting, inspecting, detecting errors, cleaning, transforming and loading data into relational databases (aka "data wrangling").
- Anonymising / pseudonymising records.
- Working closely with statisticians and research team to transform data into a form that is usable for analysis.
- Assisting with analysis, interpretation and summation of data for quality assurance and audit purposes, and for presentation and publication.

Information governance – 25%

- Ensuring that personal data is processed in accordance with the law and college policies, taking appropriate security measures to protect the data against unauthorised or unlawful processing and against accidental loss or disclosure.
- Reviewing all information security arrangements and the CSPRG IG policy regularly with the head of CSPRG and project manager, planning necessary improvements and updating them as necessary.
- Conducting CSPRG IG audits.
- Completing the annual Data Security and Protection Toolkit assessment.
- Providing day to day advice to the CSPRG staff related to IG best practice.
- Maintaining the CSPRG IT-asset and data-asset registers.
- Keeping up to date with any legislation that affects the IT/IG aspects of the projects and ensuring that all systems and processes comply with the requirements and guidelines.
- Completing the technical sections of applications or reports required by external organisations (e.g. ethics committees, funders, regulatory bodies).
- Working with the Data Protection Officer and Faculty of Medicine data protection team.

IT support – 10%

- Overseeing access to IT systems / resources required by CSPRG staff (e.g. CSPRG SharePoint site, NAS storage and CSPRG email inbox), maintaining a log of access granted, and keeping the Head of the CSPRG informed of changes.
- Managing the CSPRG IT assets including PCs, laptops, portable storage, scanners, printers and software.
- Setting up and maintaining the CSPRG team website and study-specific websites.
- Continuous monitoring, support and improvements of CSPRG systems ensuring they are intuitive to use and fit for purpose.
- Working closely with different departments within Imperial College ICT to obtain support for services required by the CSPRG.

Finance/resource management – 5%

- Advising on the IT resources required and providing cost estimates during project planning.

Other – 10%

- Contribute to writing manuscripts for publication.
- Attend relevant courses and workshops to improve and keep up to date knowledge and skills required to undertake this post.
- Lead team meetings regarding data acquisition and IG issues.
- Attending internal or external meetings relevant to the CSPRG projects.
- Provide ad-hoc data analysis and programming training to other members of the group.

Person Specification	

Requirements Candidates/post holders will be expected to demonstrate the following	Essential (E)/ Desirable (D)
Education	
Degree in computer science / other numerate discipline	E
Experience & Knowledge	
Solid understanding of relational databases	E
Experience writing SQL queries	E
Knowledge of database design and administration (e.g. keys, triggers and normalisation)	E
Ability to clean and analyse large, messy, real-world datasets	E
Clinical or sensitive data management experience	E
Software development experience (version control, unit testing, documentation)	E
Programming experience in an object-oriented language such as Python, Java or C++	E
Familiarity with web technologies such as HTML, CSS and JavaScript, APIs and cloud deployment	E
Previous experience of working in a medical or academic research setting	D
Familiarity with Python web application frameworks such as Flask or Django	D
Familiarity scripting with Bash and PowerShell	D
Experience with Oracle and PostgreSQL databases	D
Skills & Abilities	
Effective analytical and problem-solving capabilities	E
Excellent attention to detail	E
Proven ability to quickly learn programming skills and languages	E
Ability to create programs to clean and transform large volumes of data	E
Advanced verbal and written communication skills	E
Proven administration and organisational skills including excellent record keeping skills and the ability to complete work to deadlines	E
Enthusiastic approach to new challenges	E
Advanced skills in MS Office Suite (Word, Excel, Access)	E
Ability to work as part of a team as well as to work on own initiative	E
Other	
Ability and willingness to travel to participating research sites within the UK	E

Please note that job descriptions cannot be exhaustive and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the 7 Imperial Expectations detailed below:

1) Champion a positive approach to change and opportunity
2) Encourage inclusive participation and eliminate discrimination
3) Communicate regularly and effectively within and across teams
4) Consider the thoughts and expectations of others
5) Deliver positive outcomes
6) Develop and grow skills and expertise
7) Work in a planned and managed way

Employees are also required to comply with all College policies and regulations paying special attention to:

- Confidentiality
- Conflict of Interest
- Data Protection
- Equal Opportunities

- Financial Regulations
- Health and Safety
- Information Technology
- Smoking

- Private Engagements and Register of Interests

They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](#) page.

The College cannot normally apply for a Certificate of Sponsorship for this post under Tier 2 of the UKVI's Points Based System. Any candidate, who is considering applying for this position and requires sponsorship, must ensure that they are able to obtain permission to work in the UK through an appropriate immigration route.

Committed to equality and valuing diversity, we are an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and work in partnership with GIRES to promote respect for trans people