

## NCRI Informatics Initiative

### Guidance for Submission of Expressions of Interest in Cancer Informatics

The National Cancer Research Institute (NCRI) is a partnership which brings together government, charity and private sector organisations in order to utilise the resources available for cancer research. The NCRI Informatics Initiative seeks to build a UK cancer informatics platform. This will comprise cancer community based projects linked by an infrastructure framework commissioned by the NCRI Informatics Coordination Unit<sup>1</sup> (see Appendix 1).

A call for expressions of interest (EoI) in cancer informatics was launched in March 2007. All proposals received were reviewed by the NCRI Scientific and Technical Advisory Panel which reports to the NCRI Informatics Management Board. In December 2007, a statement on funding of community projects was released (Appendix 2) and the community were given the opportunity to submit further EoIs. Any additional EoIs received will be reviewed by the NCRI Scientific and Technical Advisory Panel against the following criteria:

- Leverage one or more existing research projects or data-related resources in which the infrastructure can be exemplified
- Involve at least two research or infrastructure groups, preferably across more than one site/discipline
- Show the potential benefit of integration and generic applicability of the resources that they will create through use in multidisciplinary and/or multi-site consortia
- Address training needs in the use of the resources generated
- Demonstrate potential value for money
- Does not duplicate an existing functional project

In addition:

- Proposals may be entirely new or be developments of existing projects
- Resources developed should be applicable beyond the interests of the group that developed them
- Partnerships between academic and industrial or governmental organisations will be welcome, particularly collaborations with the Initiative's strategic partners, the NHS, the European Bioinformatics Institute and the US NCI caBIG programme

All EoIs submitted to the Scientific and Technical Advisory Panel will receive formal feedback. The title and summaries of the EoIs may be shared with potential funders with a view to matching individual funders with some of the projects on offer. Where there is a mutual interest between a funder and an investigator, they will be put in touch with each other, and this may lead to an invitation to submit a full proposal. Any project that is funded in this way will be subject to terms and conditions to ensure that it remains fully integrated with the NCRI Informatics Initiative.

---

<sup>1</sup> <http://www.cancerinformatics.org.uk/>

## **Guidance for Preparation of Expressions of Interest**

Eols are invited in any area of cancer research including services for people with cancer, population science, basic biological research, computer science or informatics and biological science. Eols should demonstrate how they interface with, add value to or support the development of the informatics platform (see Appendix 1). Potential applicants should consider the possible “research community” roles (see Table 1 in Appendix) and the information downloadable from the NCRI Informatics Initiative website<sup>2</sup>.

### ***Guidelines for the format of Eols:***

- Eols should not exceed three pages
- Eols should include an estimated cost of the proposal subdivided into staff, running expenses and equipment and indicate whether this is the full economic cost or direct costs only (this may be included as a one-page appendix to the Eol)
- A separate lay summary of up to 100 words should be provided (this may be included as an appendix to the Eol)
- Consent from all PIs to share the summary and the title of the proposal with potential partners of the Initiative should be given by email at the time of submission

Please submit Eols by email to Jonathan Bull. If you have any queries regarding submission of Eols, please contact Jonathan Bull by email ([jonathan.bull@cancer.org.uk](mailto:jonathan.bull@cancer.org.uk)).

---

<sup>2</sup> <http://www.cancerinformatics.org.uk/documents.htm>

### **Further Information**

The vision for NCRI Informatics in the UK is articulated in several published NCRI documents<sup>2</sup>, which encompass the following objectives for the cancer community in the UK:

- Development of the technology for a common 'informatics platform'
- Facilitation of cultural change within the community to ensure that the platform's benefits are realised
- Active implementation of an informatics platform by the UK cancer community in partnership with existing programmes, notably with the US National Cancer Institute's cancer biomedical informatics grid (caBIG), in order to accelerate deployment and maximise already established learning

This vision would provide the UK with a new national asset with the potential to have a major impact on cancer research. The vision was approved in principle by the NCRI Board in 2005 with a key feature of the plan being the collaborative development of a UK informatics platform that would comprise the following elements:

- Peer reviewed individual projects, driven by science goals, as major platform components, including cancer related data sources and reusable information services
- Establishment of core functionality, initially consisting of a portal, user interface (UI) and catalogue of sources and services, coupled to a framework of standards and tools for community use
- Evaluation and, where appropriate, inclusion of components from other initiatives both within and outside the UK so that the platform can be built more rapidly and be inter-operable with other initiatives, notably caBIG
- Co-ordinated efforts to facilitate the cultural change and targeted training required to maximise use of the platform, coupled with support, maintenance and enhancement mechanisms for the platform

### **The Informatics Platform**

The function of the informatics platform is to present resources related to cancer information as a coordinated and collated asset, allowing more efficient access to cancer data and services. It is anticipated that the platform will physically consist of a "grid" of connected nodes representing multiple cancer community projects. It is a basic tenet of the plan that access to the platform should be as universal<sup>3</sup> as possible, thus the core components are developed and maintained for the benefit of all.

The data, tools and components that comprise the platform will evolve. The utility of the platform will therefore increase as contributing projects from the cancer community are integrated. As such the platform's value for cancer research will also grow by taking advantage of these advances in cancer knowledge and techniques, as funded from multiple sources.

---

<sup>2</sup> <http://www.cancerinformatics.org.uk/documents.htm>

<sup>3</sup> Note that access to the connected *resources* (such as research databases or health records) will remain controlled by the resource owners. This is analogous to accessing an internet search engine, in that it does not necessarily confer any access rights to "assets" located.

However, it is equally clear that some of the core infrastructure needs to be in position to leverage the benefit from these investments. It is proposed that the Informatics Coordination Unit acts to establish a base set of functionality and services around the platform on behalf of the community as a whole. This base functionality is a necessary pre-cursor for the subsequent activities.

### **Development principles**

The following principles underlie the proposed implementation plan for developing and delivering the platform.

- Overall development direction of the platform and independent review of the components to maximise benefits across the whole community will be overseen by a User Group drawn from the cancer research community itself
- Base functionality will be delivered initially under the direction of the Unit. Delivery of new data sources, requirements for connection to existing data sources and the platform tools & components will be developed through community defined and directed projects. A clearer definition of community requirements has been and will continue to be defined through an 'expression of interest' process in which they can outline project proposals they will eventually submit to the Scientific and Technical Advisory Panel
- Simulations and Pilots (with User Group participation) will be used to facilitate feedback from the community and shape the direction of the early implementation stages
- A phased approach to delivery will be used to demonstrate early utility and reduce risk. Three phases are proposed, with the first laying down the core functionality needed to deliver the major benefits noted above
- Existing expertise and knowledge resources will be re-used where possible (e.g. caBIG, OMII, identified demonstrator projects)

Table 1: Infrastructure Elements for the Informatics Platform

Infrastructure element	Role of research community	Role of Informatics Coordination Unit
Data elements	Defining, agreeing and adoption of accredited standards. Refer to the planning matrix <sup>4</sup> for a survey of relevant standards	<ul style="list-style-type: none"> <li>• Technical Accreditation of resources</li> <li>• Assembly of toolkits for community use</li> <li>• Promotion of research derived tools for community use, both from within the UK and abroad</li> <li>• Cataloguing of source systems allowing researchers to quickly establish data, tools and other research in areas of interest</li> <li>• Coordination with strategic partners</li> <li>• Facilitating data sharing, integration and collaborations, particularly the promotion of standards</li> <li>• Dissemination of infrastructure resources</li> <li>• Communication activities to facilitate information sharing</li> </ul>
Controlled vocabularies and ontologies		
Data exchange formats	Adoption of accredited formats; defining new ones where needed	
Protocol standardisation	Defining and working to agreed standards	
Implementation	Establishing data sources, services or tools	
Data analysis and data mining	Developing appropriate standards and tools for data analysis or mining to support data sharing and provide elements for integration	
Privacy enhancing technologies and security	Defining cancer relevant issues and using, developing or adapting appropriate resources	
Knowledge management	Creating tools and applications for knowledge generation and use across domains such as systems biology, mathematical modelling, drug design, clinical decision support systems	

<sup>4</sup> [http://www.cancerinformatics.org.uk/planning\\_matrix.htm](http://www.cancerinformatics.org.uk/planning_matrix.htm)



## NCRI Informatics Initiative

### Funding of community-based projects

In early 2007, the NCRI Informatics Initiative issued a call for expressions of interest (Eols) in cancer informatics. At that time we hoped to issue a formal call for proposals later in the year should funds be available. Over the intervening months we have held discussions with a number of potential funders (including pharmaceutical companies) and generated considerable interest. While at this stage we do not have sufficient pledges towards a common fund to support a call, our discussions with potential funders have identified an alternative way forward. A number of funders have indicated that they would prefer to support specific projects rather than contribute to a common fund.

We have been delighted by the response to the call for Eols. The NCRI Scientific and Technical Advisory Panel (STAP) reviewed the Eols and were impressed with the variety and quality of the proposals and feedback from the Panel will be returned to all the investigators who submitted Eols. We have obtained consent from those investigators to share the titles and summaries of their Eols with potential funders and we are now taking this forward with a view to matching individual funders with some of the projects on offer. Where there is a mutual interest between a funder and an investigator, they will be put in touch with each other, and this may lead to an invitation to submit a full proposal. Any project that is funded in this way will be subject to terms and conditions to ensure that it remains fully integrated with the NCRI Informatics Initiative.

We still hope to run a formal call for proposals at a future date and we will continue to work towards this. In the meantime, the Informatics Secretariat is willing to receive any additional Eols on the understanding that they will be reviewed by the STAP and may be included in the list of projects offered to funders. The call for submission of Eols remains ongoing.

Investigators who wish to submit an Eol are strongly advised when preparing their proposal to consider the criteria and guidelines which can be found at <http://www.cancerinformatics.org.uk/news.html>.

A handwritten signature in black ink that reads "Alex Markham".

Professor Sir Alex Markham  
Chair, NCRI Informatics Management Board