

Senior Software Engineer

The Generation Challenge Programme (GCP) is seeking a dynamic, innovative and self-motivated senior software engineer to work with an implementation team of subject matter specialists and lead a group of software engineers to develop software for the Integrated Breeding Platform (IBP, <http://ibp.generationcp.org/>). GCP partners are engaged in plant breeding worldwide and through its \$20m IBP project, the GCP seeks to improve the efficiency of these efforts by integrating molecular techniques and advanced information management into traditional breeding practices. Essential to this work are software tools that aid molecular plant breeders in deciding which parental lines are to be included in crosses and what subsequent selections are to be made based on all available phenotypic and molecular data. These tools will be developed using the open source cyber infrastructure of the NSF funded iPlant Collaborative (<http://www.iplantcollaborative.org/>) and will be assembled into an Integrated Breeding Workbench designed as a configurable workflow management system. The Senior Software Engineer will be responsible for the following:

- Translate design requirements from subject matter specialists into software specifications for informatics tools using prototyping technology for user interaction and refinement
- Work with iPlant developers to understand the iPlant API and SDK to deploy these informatics tools as configurable applications of the IB Workbench using iPlant's Discovery Environment technology
- Manage a group of software engineers to develop the IB Workbench in consultation with iPlant engineers, using agile development cycles with user feedback coordinated by the implementation team
- Ensure best practices for open source software design, development and distribution are followed and documented to ensure quality, maintainability and extension of the IB Workbench

The Software Engineer will report administratively to the GCP Theme Leader for Bioinformatics and Crop Information. He/She will be a member of the IB Workbench implementation team and interact closely with the subject matter specialists in that team as well as with users of the IBP (primarily molecular breeders and traditional breeders integrating markers into their breeding programs) to ensure that the users' needs are met and to assess future needs. This position, based with the iPlant development team at The University of Arizona, Tucson, USA, is for a fixed-term contract of two years, with possibility for renewal subject to performance and funding.

We are seeking candidates with the following qualifications:

1. Master degree (or BSc and equivalent experience) in computer science
2. Ability to work well as part of a multidisciplinary and decentralized team
3. Demonstrable experience in successfully managing and supervising the work of a team of programmers
4. Experience with relational databases (eg. MySQL or PostgreSQL)
5. Experience with Object-oriented programming in languages (eg Java, C++, or C#).
6. Experience with Object-oriented analysis and design.
7. Experience with and understanding of agile development methodologies.
8. Experience working in a team environment on successful software projects.
9. Exposure to many phases of the software development/implementation life cycle.
10. Experience using and/or contributing to open source software.
11. Experience with a version control system (eg. Subversion, CVS, or Git).
12. Excellent interpersonal and communication skills.

Experience or qualifications in the following areas would be considered a major asset:

1. Experience with HTML, CSS, and JavaScript.
2. Experience with object/relational mapping systems.
3. Experience with data and metadata management.
4. Familiarity with Unix/Linux and Apache HTTP Server.
5. Understanding of common enterprise application architectural patterns, such as MVC.
6. Demonstrated ability to produce robust software, preferably in the scientific computing domain.
7. Basic knowledge of Web application development frameworks (eg. Struts, Spring or GWT)
8. Experience developing rich Internet applications (eg. with AJAX, Adobe Flex or any Javascript framework)
9. Background using scripting languages (eg. Python, Ruby, Groovy, Perl, or PHP).
10. Knowledge of the computational and data storage needs of the bioinformatics or computational biology communities.
11. Understanding of modern web application frameworks (eg. Ruby on Rails, Django, Grails)
12. Development experience using Web 2.0 technologies.

The Generation Challenge Programme (<http://www.generationcp.org>) is an internationally funded, non-profit research and training programme that was created by the Consultative Group on International Agricultural Research (CGIAR) to bring together research efforts at public and private research institutions in developed and developing countries to build a platform of publicly available genetic and genomic resources and tools that can be used to deliver the fruits of the Genomics Revolution to resource-poor farmers. The Generation Challenge Programme has an annual budget of USD \$14 million.

GCP is hosted by the International Maize and Wheat Improvement Center (CIMMYT <http://www.cimmyt.org>). CIMMYT has an annual budget of approximately US\$45 million and its mission is to help the poor in the developing world by increasing the productivity, profitability, and sustainability of maize and wheat-based cropping systems while protecting natural resources. CIMMYT employs about 600 permanent staff, including 89 internationally recruited staff and has regional centers and office in 13 other countries, especially in eastern and southern Africa. Rapid growth is occurring in south and East Asia.

CIMMYT/GCP offers a competitive remuneration package, including benefits, paid in US dollars. The software engineers will be University Associates at The University of Arizona, Tucson, USA. Non US residents will need to obtain a relevant working visa.

GCP/CIMMYT is an equal-opportunity employer and strives for staff diversity in gender and ethnicity

Please send via e-mail your letter of application, CV/Resume (including full contact information), and names and contact information of three references to:

Human Resources Manager, CIMMYT
(Reference GCP 2011/01)

Email: jobs-cimmyt@cgiar.org and cc g.mclaren@cgiar.org

Deadline for applications: January 31, 2011

Shortlisted candidates will be interviewed by the Selection Committee beginning February.