Monitoring changes in Irish *Zymoseptoria tritici* populations in response to host resistances

**Background**

*Septoria tritici* blotch is currently the most economically destructive disease of winter wheat crops in Ireland and North-Western Europe. In the absence of control measures the disease can significantly reduce wheat yields to the point where its cultivation is uneconomical. Due to the continued loss of fungicides used for its control through resistance development and regulation increased emphasis is being placed upon the ability of the crop to prevent infections and subsequent yield loss. However, as with other plant-pathogen systems, *Z. tritici* has the capacity to overcome host resistance. The first goal of this research is to establish if such adaptations have occurred in the Irish *Z. tritici* population to the most commonly cultivated winter wheat varieties. Understanding how such changes in *Z. tritici* populations occur and determining the speed of change is indispensable if the durability of resistant varieties is to be maintained under commercial practices. Therefore the second goal of this project is to monitor the effects different levels of host resistances have on local *Z. tritici* population structures using high throughput sequencing technologies. This research is to be conducted collaboratively between the Teagasc Crop Science Department and the School of Agriculture, University College Dublin as part of the MonPESC project funded by the Department of Agriculture, Food and the Marine.

**Requirements**

Applicants should have a good primary degree (First Class/Upper Second Class Honours) or M.Sc. in an appropriate discipline (plant pathology, microbiology or plant science). Experience or knowledge of using bioinformatics tools is desirable. The successful candidate should be highly motivated, have a willingness to learn and have a good knowledge of molecular biology.

**Award**

This research is to be conducted collaboratively between Teagasc Crop Science Department, Oak Park, Carlow (under supervision of Dr, Steven Kildea) and the School of Agriculture and Food Science, University College Dublin, Belfield Campus (under the supervision of Dr. Angela Feechan and Dr. Tom McCabe) as part of the MonPESC project funded by the Department of Agriculture, Food and the Marine. This is a four year PhD with the student awarded a stipend of €22,000 per annum, from which the university fees must be paid. The expected start date for this PhD is September 2014.

**Application**

Submit an electronic copy of Curriculum Vitae, a letter of interest and names and email addresses of two academic referees to: Dr Steven Kildea stephen.kildea@teagasc.ie and Dr. Angela Feechan angela.feechan@ucd.ie.

**Closing Date**

28th July 2014