The Dean of the Faculty of Biology and Environmental Protection, University of Silesia in Katowice, Poland announces an open call for a postdoctoral researcher in the project “CDKG/Ph1: is there a common process that regulates genomic stability in grasses?”

+ **Place:** University of Silesia in Katowice, Faculty of Biology and Environmental Protection, Department of Plant Anatomy and Cytology, Katowice, Poland

+ **Call opens:** June 2015

+ **Deadline:** 31 August 2015

+ **Project type:** HARMONIA international research project funded by the Polish National Research Centre ([http://www.ncn.gov.pl/finansowanie-nauki/konkursy/typy/4?language=en](http://www.ncn.gov.pl/finansowanie-nauki/konkursy/typy/4?language=en))

+ **Length of employment:** up to 30 months, starting in November 2015

+ **Conditions:** Contract of employment, full time (the first contract will be signed for a probation period of one academic year (until 30 September 2016). If the probation period is successful, next contract will be signed until the end of the project (May 2018)

+ **Gross salary:** 8 500 PLN/month (including employer contributions and benefits)

**Qualifications and criteria:**

+ A PhD or equivalent experience in biological sciences (essential criterion)

+ Experience in molecular biology/molecular genetics or related discipline and knowledge of a diversity of genetic engineering approaches (essential criterion)

+ Demonstrable experience in generating and analysing mutants in plants, in particular using RNAi and recent genome editing technologies, like CRISPR/Cas or ability to articulate the willingness to acquire such expertise (essential criterion)

+ Proficiency in routine molecular biology techniques (cloning, real-time PCR, etc.) (essential criterion)

+ Effective operational proficiency in English (will be verified by international recruiting panel during the interview; essential criterion)

+ Mobility – this is an international research collaboration project with Aberystwyth University, UK at which some of the research will be conducted by the appointee (essential criterion)

+ Ability to work independently, formulate and test research hypotheses, plan and conduct experiments, prepare formal reports and presentations (essential criterion)

+ Motivation and enthusiasm to undertake challenging research work, willingness to further scientific development (essential criterion)
Nuclear genome integrity is a key prerequisite for the evolutionary success of any eukaryote. In plants, which often are allopolyploids, it is particularly important in terms of maintaining correct pairing and recombination of homologues and suppressing pairing of homoeologues which could have a deleterious effect on meiosis and fertility. In common bread wheat, the restriction of recombination to homologues only is controlled by a single dominant locus (Ph1) which contains several copies of cyclin-dependent kinase-like (CDK) genes that are both structurally and functionally related to the phylogenetically conserved CDKG/CDK11 class. Since CDKG was recently found to be involved into chromosome pairing in Arabidopsis, the strong suggestion is that the structurally related Ph1 kinase modulates this process in grasses, and thereby promotes genome stability.

The aim of this project is to determine whether or not grasses have a genome stabilisation mechanism based upon the activity of these CDKs. In order to answer this question, the relatively simple and tractable allotetraploid species *Brachypodium hybridum* (2n=30) has been chosen as a comparator. It has numerous ‘model’ attributes, such as a very small (~600 Mb), sequenced nuclear genome, well-studied phylogeny identifying its putative evolutionary ancestors, and an ever-growing repertoire of experimental resources providing unique opportunities to address many novel and important areas of molecular cytogenetics and biology. It is a fully fertile allotetraploid with 15 bivalents at metaphase I. Such regularity implies that this species suppresses homoeologous pairing and recombination to maintain its diploid-like status.

In terms of the fundamental research, comprehending the basis of such control is important for our better understanding of the processes that govern genetic stability in allopolyploids as they are a key source of evolutionary innovation. The discovery of similar or different mechanisms in other grass allopolyploids would have important implications in terms of our understanding of the functional constraints upon the evolution of genome stabilising mechanisms, and in informing our strategies for exploiting and stabilising new polyploids. In the long-term, it may also have some practical impact for the creation of novel and stable interspecific and intergeneric hybrids in advanced breeding programmes, and the genetic improvement of crops such as wheat and oats through introgression from wild relatives. The project will also allow us to develop the technology and skills to address the role of other genes, such as the *Brachypodium* Ph1-like kinases (a much larger multi-gene family), in future projects.

**How to apply: (deadline 31 August 2015)**

Applications consisting of a supporting statement, CV, scan of PhD certificate, publication list and two reference letters (the principal investigator may contact those providing a reference to obtain more detailed information concerning the applicants) should be sent by email to Professor Robert Hasterok (robert.hasterok@us.edu.pl) as a single PDF file with the title
“HARMONIA 2015 – postdoc”. In the email body please include the following statement, which is formally required to process your application:

“I hereby agree for processing my personal data, included in my job offer, for the purpose of recruitment (as defined in the Act of August 29, 1997 on the Protection of Personal Data (Journal of Laws of 2002, No. 101, item 926, with amendments).

Shortlisted candidates will receive by email an invitation for an interview. The interview will include a 20 minute presentation by the candidates of their research interests, academic records and past projects, and the skills they would bring to this project.

*We invite candidates to apply but reserve the right to reply only to shortlisted candidates, who will receive individually the dates of interviews*