The Leibniz Institute of Plant Biochemistry (IPB) invites applications by motivated young researchers with an interest in molecular aspects of protein degradation to fill the position of two students seeking a Ph.D. in Biochemistry or Genetics.

We are looking for two creative, flexible, and enthusiastic new team members with a Masters degree or equivalent in biochemistry or biology to join the Independent Junior Research Group headed by Dr. Nico Dissmeyer at the IPB. The positions are funded by the ScienceCampus Halle.

We study molecular mechanisms, regulation, and maintenance of plant protein stability networks, protein recognition, and degradation in the model plant Arabidopsis thaliana using molecular biological and biochemical approaches. For further information, see dissmeyerlab.org for further details. Within the PhD project, the full methodological spectrum of biochemical, genetical, cell and molecular biological approaches, as well as proteomics will be combined.

One of the goals will be to investigate alterations in mutants and transgenic individuals by proteome and peptidome profiling exploiting the high-level infrastructure at the IPB and on the surrounding university campus. Mutant screens of plants carrying a transgenic protein stability reporter will be performed coupled with the identification of major genetic loci impairing protein destruction and their further analysis. The experimental work will be carried out in collaboration with internal on-site and external collaboration partners with different experimental key expertises.

The IPB constitutes a vibrant and collaborative environment for research. Equipped with state-of-the-art technology and excellent core facilities, the institute provides outstanding research opportunities. Closing date for applications (submission of the electronic version) is September 16, 2012.

The positions are immediately available. Later applications maybe considered if the position is not yet filled. Candidates about to earn their degree are welcome to apply.

Are you interested in joining our research team? We are looking forward to receiving your application documents!

Further information on required documents, the form of the application, and a more detailed description of the offered positions are available at dissmeyerlab.org (see: Positions).

Please send your applications both by regular mail and email to: Leibniz Institute for Plant Biochemistry, Human Resources, Kerstin Balkenhohl, Weinberg 3, D-06120 Halle (Saale), Germany and to bewerbungen@ipb-halle.de
The lab and research environment:

We study molecular mechanisms, regulation, and maintenance of plant protein stability networks, protein recognition, and degradation in the model plant *Arabidopsis thaliana* using molecular biological and biochemical approaches. For further information, see diismeyerlab.org for further details.

The IPB is a leading institution in plant science and together with the surrounding weinberg campus, it provides a stimulating research atmosphere and collaborative environment with excellent work conditions and state-of-the-art facilities. Our lab is part of the national “ScienceCampus Plant-based Bioeconomy” that is specifically laid out to foster interdisciplinary approaches between the three regional Leibniz institutes and the Martin Luther University (MLU). We offer a top-level research environment, generous research funding, a periodic research report system (journal clubs, progress reports and scientific presentations), and a highly communicative atmosphere between the involved institutions, departments, and labs.

Our lab is associated with the PhD Research Training Group (DFG-Graduiertenkolleg) 1026 on „Conformational transitions in macromolecular interactions“ with currently about 30 students in different labs on campus.

The experimental work will be carried out in our own lab in a recently finished building that we share with another junior research group working on protein degradation in plant immunity. The IPB offers four platforms (proteomics, bioinformatics, metabolomics, chemical screening) and a core imaging facility. Most research can be conducted in-house and the IPB-MLU campus hosts one of the largest facilities dedicated to both plant and protein sciences in Germany.

- Within the dynamic research environment of the ScienceCampus you will have ample opportunities to interact and collaborate with faculty, postdocs, PhD students specializing in a variety of topics, such as protein biochemistry, plant molecular and cell biology, genetics, biotechnology, and bioinformatics.

- The project will be carried out with national and international collaborating partner labs at the Max Planck Institute for Plant Breeding Research (MPIPZ) at Cologne, Germany, the University of Cologne, Germany, the CNRS Institut de Biologie Moléculaire des Plantes (IBMP) at Strasbourg, France, the Swiss Federal Institute of Technology (ETH) at Zurich, Switzerland, the Leibniz Institute for Analytical Sciences (ISAS) at Dortmund, Germany, and the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) at Gatersleben, Germany.

- The Leibniz Association is the umbrella organisation for 87 institutions conducting research or providing scientific infrastructure. Altogether, ca. 16,000 people are employed at Leibniz Institutes, which have an annual budget of 1,3 billion euros.

- The city of Halle (Saale) is a young and lively city with dynamic business activities, successful scientific centers (Leibniz, Fraunhofer and Max Planck institutes and Helmholtz centers), and a vibrant cultural scene around the large Martin Luther University Halle-Wittenberg and the Burg Giebichenstein University of Art and Design.
The project and research goals:

Our group investigates several aspects of protein stability and degradation in plants. Based on the model system of *Arabidopsis*, we address basic questions such as: How does *Arabidopsis* recognize and degrade proteins that need to destructed? How are proteotoxic events such as aggregation, misfolded and otherwise rather “useless” polypeptides coped with? These questions are addressed mainly with molecular, biochemical and genetic tools. The PhD projects will center around the functional characterization of interaction partners such as enzymatic components and substrates of protein degradation pathways.

One of our aims is to map the pathways and molecules that regulate these events. This work could ultimately contribute to new insights into how protein stability networks are biologically integrated and lead to phenotypes. Finally, there is potential to find new therapeutic targets for plant but also human and animal diseases, such as caused from erroneous proteostasis.

The projects will take advantage of recent developments in proteomics and imaging techniques to reveal the differences in the protein degradome of specific established higher order mutant plants, to describe cellular phenotypes such as cell division and growth patterns, but also intracellular localization of involved protein partners. In addition to giving us insight into a major but poorly understood aspect of how plants grow, the knowledge and methods produced are expected to aid future crop breeding.

The ongoing and future tasks include: preparing samples for use in microarrays, generation of antibodies against candidate proteins; testing various cell lines for optimizing protein purification for each candidate proteins; in later stages TAP technology combined with MS for identification of interaction partners; tagging of proteins with various tags for performing pull-downs and performing immunoprecipitations in search of their interaction partners; characterisation of identified protein complexes through native PAGE, chemical cross-linking followed by MS, size exclusion chromatography and functional assays; identification/confirmation of transient interactors via chemical cross-linking and confocal FRET microscopy experiments; designing functional assays for particular candidates.

You, the student:

The outstanding candidate is expected to have a solid record on previous research experiences in molecular biology and biochemical techniques, a strong interest in biomedical research and the ability to work both independently and in a team. This can be shown by explicit records of the Master and Bachelor projects and laboratory rotations and internships during the course of your studies. A fluent correspondence in English is essential. Additional experience with confocal microscopy, image analysis and *Arabidopsis* genetics will be advantageous. Fine motor skills for microscopy are also desirable.

We require:

- an extensive interest and understanding of and/or readiness to work oneself into the fields of general protein degradation, plant biochemistry/genetics as well as the relevant methodology;
- creativity and interest to shape your own thesis project;
- good written and oral communication skills;
- presentation skills (you might be asked to give a seminar at the institute as part of your job interview);
- ability to work in a team; an integrative and cooperative personality;
- ability to work with high precision and accuracy to generate reproducible data.
Prospective PhD students are encouraged to study our published and ongoing work on our homepage before contacting us for job opportunities and starting the application process. If your application arises our interest, you will be invited for an interview and will present yourself with a short talk on the subject of prior research accomplishments to a small panel composed of a committee of departmental senior scientists and PhD students. In a subsequent general panel discussion, the committee would like to learn more about your research interests in the context of our lab and institute.

Your application:

Applications include a short cover letter addressing your general research interests and explaining why you would like to join our group and institute. Please refer to application code ("Kennziffer") 11/2012 indicating the platform where you have heard about this PhD position. Please include the following documents

1) A short *curriculum vitae* (including personal data, education, certificates, awards, list of publications, a description of previous research experience and relevant practical trainings, internships, and lab rotations; name and contact information of your supervisors);
2) transcripts of your final examination(s);
3) contact details of two references knowing about your performance in the lab and practical work;
4) short summaries (half a page each) of your diploma/master thesis and your current project, if applicable
5) a concise description (half a page) why our laboratory is of interest for you, why you are interested in this project, and what you could imagine to do here (just roughly, we know that this is quite difficult to do but clearly demonstrates your interest which is a prerequisite for our choice!).

**Important:** we kindly ask you to provide us with both a signed paper copy by regular mail AND an electronic version by email. All electronic information should be provided in a single PDF file. Please only send in the requested documents.

The clear statement of interest is crucial and incomplete applications or those ones not meeting the required format cannot be considered. Please be aware that generic applications that do not relate to any of our laboratory's research topics have only a very small chance to be considered.

Review of applications will begin after the deadline and continue until a suitable candidate is identified. Informal inquiries before the application are welcome.

Please be ready to send a copy of your Master or equivalent thesis upon request.

We are looking forward to receiving your application documents!

Please send your applications both by regular mail and by email to:

**Leibniz Institute for Plant Biochemistry**

**Human Resources**

**Mrs. Kerstin Balkenhohl**

Weinberg 3

D-06120 Halle (Saale) Germany

and:

bewerbungen@ipb-halle.de