

**Focus Area DynAge**  
Disease in Human Aging:  
Dynamics at the Level of Molecules,  
Individuals, and Society

**Information  
and  
Fourth Call for Applications 2015**

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## **Focus Area DynAge Fourth Call for Applications 2015: Seed Money for Interdisciplinary Projects on Disease in Human Aging**

Acute illness and chronic disease are triggered by a multitude of exogenous and endogenous factors, by health-relevant behavior (e.g. diet, sedentary lifestyle), and the societal environment. Many diseases are age-related in the sense that exposure to risk-factors, which eventually drive the development of morbidity, changes or cumulates over the life-span. This constitutes a major public-health challenge that needs to be met with systematic knowledge on the dynamics of pathogenesis and disease progression in different phases of human life as well as by knowledge on how individuals and their social environments may prevent and/or cope with age-related diseases over the life-course. Furthermore, knowledge is needed to assess how shifts in demography correlate with the accumulation of diseases in specific populations, how research integrity is influenced by economic and political circumstances, and how the resulting challenges can be met by adapted health systems.

The Focus Area *DynAge* is a collaborative project between Freie Universität Berlin and Charité – Universitätsmedizin Berlin, newly joined by the Deutsches Institut für Ernährungsforschung as a co-sponsoring institution. DynAge aims to intensify interdisciplinary research on age-related disease processes, therapeutic interventions, and associated societal as well as ethical issues by joining expert knowledge from natural sciences, biomedicine, humanities, and social sciences and by providing a unique interdisciplinary platform spanning the molecular antecedents of age-related disease to the consequences for individuals and society.

The Focus Area DynAge invites applications for seed money funding of interdisciplinary research groups. Groups should be composed of researchers from at least two of the following institutions: Freie Universität Berlin (FUB), Charité - Universitätsmedizin Berlin (CUB), Deutsches Institut für Ernährungsforschung (DIFE). The seed money is intended to support preparation of applications for third-party funding of future collaborative endeavors. Shared funding from all participating institutions can be made available to trans-institutional interdisciplinary research groups.

### **Core Criteria for Funding by DynAge**

Successful applications entail the following: (1) Quality and rigor of research question and methods; (2) Fit with the Focus Area's research aims (including use of a comparative approach, see below); (3) Interdisciplinarity and ideally the integration of at least two horizontal levels of analysis within the Focus Area's matrix of cooperation (see below and Figure 1); (4) Fit with at least one of the four central disease groups (see below and Figure 1); (5) Clearly stated goals for the acquisition of further funding, potential to attract third-party funding; (6) Finally, applications of interdisciplinary

project groups with early career researchers (e.g. postdocs) are explicitly invited.

**Research Aims: Comparative Approach.** In contrast to other research networks that focus on disease and health in *old age*, DynAge promotes a *comparative approach that contrasts different phases of the life span* to explore disease progression, individual management of illness, associated societal as well as ethical issues and public health. Contrasted phases of life can entail all parts of the human life-span (conception to oldest age) that are relevant for disease development and progression.

**DynAge Interdisciplinarity: Structures of Cooperation.** Cooperation within DynAge-funded interdisciplinary project groups should be organized along a network matrix with intersecting vertical and horizontal elements (see Figure 1). Vertical elements represent four groups of age-related diseases: **tumors, cardio-vascular disease, musculoskeletal diseases, and cognitive disorders/depression**. They are among the most relevant health challenges faced by aging societies. The horizontal organization of this Focus Area entails three perspectives on the investigation into disease in human aging:

**(1) Molecular level.** Core disciplines within this level come from the natural sciences and include but are not restricted to biochemistry, molecular biology, chemistry, pharmaceutical sciences, or biocomputing. Major research themes to be addressed comprise among others: characterization of distinct protein-ligand interactions involved in disease development and treatment as well as identification of common themes in molecular interaction dynamics; understanding of the proteomic foundation of selected diseases; manipulation of protein interactions in the laboratory (e.g. by drugs or directed mutants).

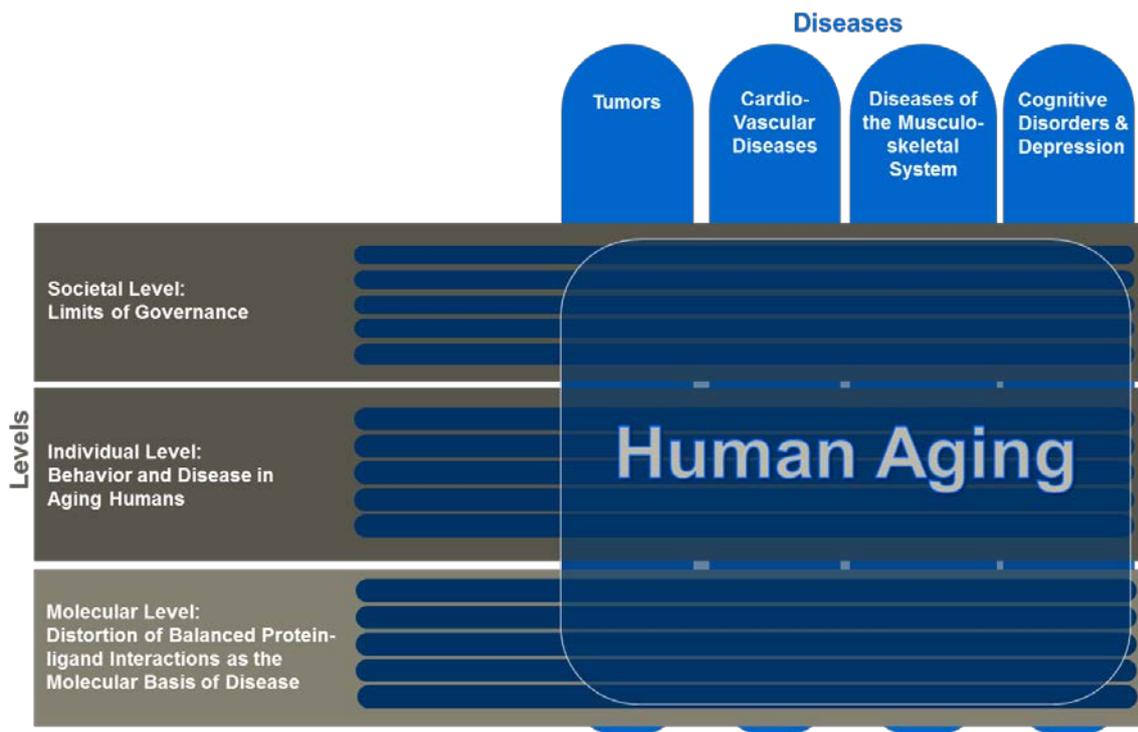
**(2) Individual level.** Core disciplines are concerned with principal disease mechanisms prevention and treatment, they include but are not restricted to clinical medicine, psychology, psychiatry, and neuroscience. Major research themes to be addressed comprise among others: disease mechanisms, including also behavioral, cognitive, and emotional mechanisms; medical treatment; interventions to change disease-related behavior; individual disease management and co-regulation of disease-relevant behavior by close social network members.

**(3) Societal level.** Core disciplines come from the social sciences and humanities and include, but are not restricted to economics, epidemiology, public health, sociology, culture studies, ethnology, law, political sciences, philosophy, and theology. Major research themes comprise among others: Challenges of demographic change for societies in Germany and abroad; adjustments and new measures in health policy, social market economy, the organization of social security systems; impact of demographic shifts on the governance of societal health and well-being; coordination of reacting stakeholders; efficiency of “centralized governance approaches”; “Microfoundations of Change” i.e., upper-

to lower-level path-dependencies determining the behavior of actors and contributing to the limits of governance; integrity, including aspects on lobbying and conflicts of interest.

One central criterion for successful application for DynAge funding is a clearly laid out structure of interdisciplinary cooperation ideally entailing integration of at least two of three horizontal levels within the Focus Area’s matrix (Figure 1) and teaming up experts from the listed core disciplines with biomedical experts representing the four central disease groups: tumors (e.g., oncology), cardio-vascular disease (e.g., cardiology, nephrology), diseases of the musculo-skeletal system (e.g., orthopedics, radiology), and cognitive disorders & depression (e.g., psychiatry, neurology). For further characterization of the core-disciplines and research areas within the Focus Area’s matrix of cooperation, please visit [www.fu-berlin.de/dynage](http://www.fu-berlin.de/dynage).

**Figure 1. DynAge: Structure of Cooperation**



**Application and Funding**

**Who can submit an application?** Trans-institutional interdisciplinary project groups are invited to submit research proposals for projects on disease in human aging. Composition of project groups is expected to reflect the Focus Area’s aims and guidelines for interdisciplinary cooperation, including core disciplines ideally representing a minimum of 2 horizontal levels within the matrix of cooperation, and addressing a minimum of one of the Focus Area’s central disease groups. Project groups should include members of *at least* two of the following institutions: FUB, CUB,

DIfE. Proposals by and including *early-career researchers (post-doc level)* are especially welcome.

**What will the application look like?** Please, use the provided form and follow the outlined instructions. Applications are divided in 4 sections (A project overview and information on applicants; B proposal outline; C general references; D brief CVs of participating researchers) and should be submitted in English.

**When is the application due?** Submit your proposal electronically by **30 September 2015**.

**Where should the application be sent?** Please, send your application electronically to the Focus Area DynAge (-> [dynage@fu-berlin.de](mailto:dynage@fu-berlin.de)) as a pdf-document.

**What will the review process look like?** Selection of successful applications will be guided by a 2-step peer-review process organized by the Focus Area's coordination group. (1) Members of the coordination group as well as external colleagues will be invited to rate the submitted proposals along the Focus Area's criteria for funding, using a scoring system. Special care will be taken to avoid conflicts of interest, e.g. by excluding co-authors of current proposals from funding decisions. (2) Applicants of projects that received high ratings will be invited to present their proposals to members of DynAge's selection committee (i.e., coordination group and invited external colleagues) in November 2015. Funding decisions will be based on outcomes of this 2-step process.

**When will funding decisions be announced?** Applying interdisciplinary research groups will be informed of the outcome by mid November 2015.

**What is the range of funding? What can funds be used for?** Following the peer-review selection process trans-institutional interdisciplinary research groups will be awarded seed money, i.e., **35.000 EUR per group for one year for groups including 2 of the funding institutions or 52.000 EUR per group for one year for groups including all 3 of the funding institutions (i.e., FUB, CUB, and DIfE)**. This seed money should facilitate the preparation of applications for further third-party funding of the envisioned interdisciplinary project and can be used for pilot work, reviews, proposal preparation, and others.

Staff and/or consumables can be funded for a maximum of one year. As funds will be awarded to interdisciplinary research groups that are composed of members of at least two of the co-sponsoring institutions (FUB, CUB, DIfE), groups are requested to name one principal investigator (PI) for each co-sponsoring institution involved in the project. PIs will be responsible for the administration of funds and delivery of project reports on behalf of the group.

**Funding period.** The funding period will start 01 January 2016 and end 31 December 2016.

**Reporting.** Focus Area-funded interdisciplinary research groups will be required to report on the current state of their research project during the 2016 Focus Area Workshop in December 2016. Full project reports will be required at the end of the funding period (01 January 2017).

### **Further Information**

For further information on the Focus Area DynAge, please, visit our website at [www.fu-berlin.de/dynage](http://www.fu-berlin.de/dynage) or contact:

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