# **Proteostasis of Aging Core**

Alterations in proteostasis have been described in multiple age-related disorders and are also tightly linked to additional mechanisms of aging such as molecular damage, cellular response to stress, metabolism, inflammation and stem cell functioning. Genetic interventions in invertebrates and in mammals, now support beneficial effects in life- and health-span of modulating components of the intracellular pathways responsible for proteostasis maintenance, chaperones and the proteolytic systems. Translation of these findings into humans requires: 1) characterization of changes in proteostasis in old organisms; 2) understanding the molecular mechanisms behind proteostasis loss in aging and 3) extensive testing of the effect of chemical and natural compounds on the proteostasis machinery and their future development into drugs. The Proteostasis of Aging Core (PAC) was created in response to these needs of the aging research community and, during its ten years in operation, has been providing reliable and highly validated services, state-of-the art methodology, expertise and cutting-edge knowledge related to proteostasis to internal and external E-NSC members and aging research groups worldwide.

Services provided include:

1. Assays

Autophagy profiling

LC3-II flux

Protein turnover

Electron microscopy and morphometry

Lysosomal functions

Enzymes assays

1. Reagents and Samples

Autophagy antibody panel

Autophagy reporters

Lysosomal markers

1. Consulting

Autophagy methods and assays (Dr. Susmita Kaushik)

Drug developments and design (Dr. Evris Gavathiotis)

Applications:

* Analysis of the proteostasis state of cultured mammalian cells
* Analysis of the status of autophagy in cultured mammalian cells
* Analysis of protein turnover
* Markers for senescence, proteostasis and other drivers of aging