Eva Falck was born on June 23rd 1975. In 2002 she started her studies at the University of Skövde and in 2007 she was registered as a PhD student. During the research period she has been active in the Systems Biology Research Centre at the University of Skövde, both as representative of PhD students in the board of the centre and as coordinator of the seminars and workshops within the research centre. Alongside with her PhD studies Eva has also been working as the program coordinator of the international one-year master program in biomedicine at the University of Skövde and teaching students at both bachelor and master levels.

The most frequently diagnosed cancer of the female genital tract is cancer of the endometrium (endometrial cancer), ranking fourth among the invasive tumors that affect women in Europe and North America. As most other cancer types, endometrial cancer is a complex genetic disease influenced by both genetic and environmental factors.

The human population is genetically heterogeneous and studies of complex diseases in human are proven to be difficult. By using a model system such as the BDII rat, some of the obstacles related to the study of complex diseases can be avoided. The BDII rat strain is prone to spontaneously develop endometrial adenocarcinoma (EAC) and more than 90% of the virgin females develop EAC during their lifetime. Development of EAC tumors in BDII rats is comparable in pathogenesis and histopathological properties to that of human.

By using an experimental model, we showed that certain aberrations in the tumors lead to changes in gene expression. Our analysis also clearly showed that influence of the genetic background is a crucial driving force on the pattern and frequency of genetic changes that are found in tumor samples as well as on the pattern of gene expression. Accordingly, through molecular analysis of recurrent chromosomal, DNA and RNA changes, we might be able to find and define novel cancer-related genes with significance in tumorigenesis pathway(s). Our analysis additionally confirms and extends the importance of using animal models as a complement to clinical studies, in particular for those tumors with very complex patterns of genetic changes.