Prediction of clinical outcome in cancer is usually achieved by histopathological evaluation of tissue samples obtained during surgical resection of the primary tumor. Traditional tumor staging (AJCC/UICC-TNM classification) summarizes data on tumor burden (T), presence of cancer cells in draining and regional lymph nodes (N) and evidence for metastases (M). However, it is now recognized that clinical outcome cansignificantly vary among patients within the same stage. Data collected from largecohorts of human cancers has demonstrated the impact of immune-classification, which has a prognostic value that may add largely to the significance of the AJCC/UICC TNM-classification. In our study we examined the immune cells that infiltrated the tumor tissues of colorectal and ovarian cancer patients. In a cohort of newly diagnosed colorectal cancer patients we examined the correlations between the KRAS mutational status, patterns of tumor-infiltrating immune cells and the presence of tumor recurrence. Our data suggest that colorectal cancer patients with low levels of tumor-infiltrating lymphocytes, a high CD1a/DC-LAMP tumor-infiltrating dendritic cells ratio, and a KRAS mutation in codon 13 are at a high risk of disease recurrence. In ovarian cancer patients we focused on the dynamics of the tumor-infiltrating immune cells during isease progression. The early stages of development of ovarian carcinom as were characterized by a strong Th17 immune response, whe reas in disseminated tumors, we detected a dominant population of Helios+ activated regulatory T cells along with high numbers of monocytes/macrophages and myeloid dendritic cells. Tumor-infiltrating Tregs were probabely recruited to the tumor tissue via a CCL22/CCR4 interaction. CCL22 was mainly produced by tumor cells, monocytes /macrophages and myeloid dendritic cells in the primary ovarian tumors, and its expression markedly increased in response to IFN-γ.