MO072 Four years of NewRaptor: results from in ovo exposure in model species and field sampling in raptors N. Briels, Norwegian University of Science and Technology / Biology; T.M. Ciesielski, Norwegian University of Science and Technology; M.E. Løseth, The Norwegian University of Science and Technology / Biology; B.M. Jenssen, Norwegian University of Science and Technology / Biology; I. Eulaers, Aarhus University (AU), Arctic Research Centre / Biology; C. Sonne, Aarhus University / Department of Biosciences, Arctic Research Centre; T. Nygård, T.V. Johnsen, Norwegian Institute for Nature Research NINA; P. Gómez-Ramírez, A. García-Fernández, University of Murcia / Health Sciences Department - IMIB-Arrixaca - Veterinary Faculty; J. Martínez, University of Murcia / Ecology and Hydrology; J.O. Bustnes, Norwegian Institute for Nature Research NINA; G. Poma, G. Malarvannan, University of Antwerp / Toxicological Center; A. Covaci, University of Antwerp, Toxicological Center / Toxicological Centre Dep of Pharmaceutical Sciences; D. Herzke, NILU Norwegian Institute for Air Research; B. Styrishave, University of Copenhagen / Section of Analytical Biosciences Department of Pharmacy; V. Jaspers, Norwegian University of Science & Technology / Biology. The international research project NewRaptor (ID 230465/F20, funded by the Norwegian Research Council and the Norwegian University of Science and Technology) aims to investigate the exposure and effects of emerging chemicals in birds of prey. The raptors under investigation include the terrestrial Northern goshawk (NG - *Accipiter gentilis*) and the marine White-tailed eagle (WTE - *Haliaeetus albicilla*) from Norway and NG from Spain. During the breeding seasons of 2015 and 2016, blood and body feathers were obtained from the chicks (in total n = 160 for NG and n = 70 for WTE) in the nest when they were circa 4-9 weeks old. The samples were analysed for novel brominated flame retardants (nBFRs), organophosphate flame retardants (PFRs) and per- and polyfluoroalkyl substances (PFASs), along with trace elements and legacy persistent organic pollutants (POPs). Significant differences were found between the two species (with WTE generally showing higher levels of pollutants), but also within species, depending on the location. PFASs were generally found at the highest concentrations, with perfluorooctane sulfonate (PFOS) being the most important compound. nBFRs and PFRs were found at very low or non-detectable levels in blood plasma. Further, pollutant effects on different biochemical, immunological and endocrine parameters were assessed. We have performed controlled *in ovo* exposure studies in Japanese quail (*Coturnix japonica*) and chicken (*Gallus gallus domesticus*) as model species, both with single compounds and in a mixture scenario. The compounds for the quail exposure study included Dechlorane Plus (DP), tris(1,3-dichloro-2-propyl) phosphate (TDCIPP) and their 1:1 mixture, while PFOS, F-53B (PFOS replacement product) and their 1:1 mixture were used in chickens. Effects on gene expression and activity of anti-oxidative enzymes (catalase, superoxide dismutase, glutathione-S-transferase and glutathione peroxidase), lipid - and protein oxidative damage and biotransformation (cytochrome P4501A) were investigated. Further, hormonal analysis of corticosterone and progesterone was performed using HPLC-MS/MS. Gene expression and enzyme assays on similar endpoints will be performed on NG samples in January 2018 and will be presented alongside the results from the *in ovo* exposure studies at SETAC. This will enable discussing the potential usefulness and pitfalls when extrapolating from laboratory dosing studies using model species to field assessments in raptors.