Determining the contribution of indoor microenvironments to outdoor contamination of halogenated flame retardants ESR5

At SU, this project will sample indoor air, dust and outgoing air from building ventilation systems as well as outdoor air and top soils from an urban site (Stockholm) and a rural site (background air monitoring station 90 km SW of Stockholm). A significant component of the project will involve use of trace analytical chemistry techniques, including GC-MS and/or LC-MS to quantify halogenated flame retardants in the samples. Data generated will be used to optimize an existing multimedia fate model of Stockholm to quantify the contribution of indoor environments to outdoor concentrations of various flame retardants via ventilation systems. Predicted versus observed outdoor concentrations will be compared to validate the model. Source apportionment methods, including the use of chiral signatures of flame retardants, such as hexabromocyclododecane, to evaluate relationships between indoor and outdoor air.