

## 4<sup>th</sup> International Conference and Exhibition on **Occupational Health & Safety**

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### **Assessment of workers' exposure to bio-aerosols in wastewater treatment plants: Evaluation of the bacterial risk by the use of molecular biology tools**

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Wastewater treatment plants (WWTPs) are recognized as being important sources of microbial aerosols. Numerous saprophytic, opportunistic and pathogenic microorganisms occur in the raw wastewater of all types of treatment plants. Consequently, the composition of these bio-aerosols can be diversified, which may affect workers in several ways. In addition, many processing steps are now performed in closed buildings to not disturb the surrounding population. This can lead to a greater accumulation or persistence of bio-aerosols in such places. Even if studies revealed a significant association between exposure to bio-aerosols and the incidence of respiratory and enteric illness, our knowledge for these specific environment are still poorly documented. This project has been set up to complete the information and provides a better understanding of these workplaces and their impact on worker's health. A number of WWTPs will be investigated to document the relationship between the treatment steps, the techniques used, the engineering data and the impact of seasons on the composition of aerosols. This study will describe the bacterial community to bring new information regarding the presence of respiratory and gastrointestinal pathogens in the air. The workers exposure level and the frequency of health problems among them will also be studied. Built on the most innovative approaches in the study of bio-aerosols, this project will allow a better understanding of the exposure risk and will provide possible solution to implement better prevention and control measures to make this workplace safer.

#### **Biography**

Vanessa Dion Dupont completed her BSc in Microbiology in 2014 at Laval University, Quebec city. During this period, she participated in many research projects. She is co-author of several scientific papers about the assessment of microbiological quality of drinking water. Her project has also been quoted in local newspapers. In 2013, she did an internship with the Pre. Caroline Duchaine, specialized in the study of bio-aerosols and their health effects. Due to her interest in the study of bio-aerosols, she decided to stay in this team and continue her studies at the Master degree and maybe more.

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