

# Measuring the concentration of Fluorine and other impurities across a purification system

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Naomi Mburu

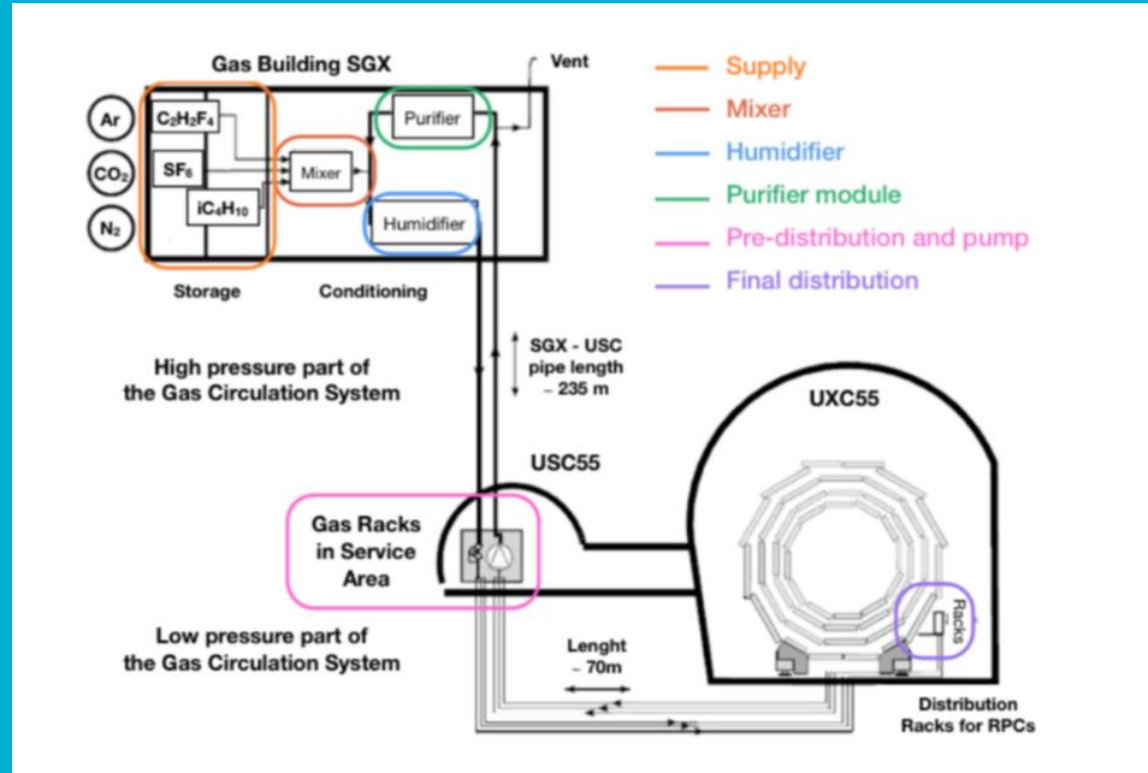
University of Maryland, Baltimore County (UMBC)

Supervisors: Roberto Guida and Beatrice Mandelli

Experiment: R&D for the LHC Experiments

# Overall Group Goals

- Analyze gas mixtures used in detectors at CERN
- Modify gas systems to improve experiment performance



## CMS Gas Distribution System

Mandelli, Beatrice. Master's Thesis

# My Role This Summer

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Use Ion Selective Electrode (ISE) to determine the concentration of Fluorine ions before and after purification

Use gas chromatography (GC) and mass spectrophotometry (MS) to characterize other gas impurities and their concentrations

By the end of summer: Have all three systems set up and running at one of the LHC experiment sites



ISE Fluorine Monitor

# Summer Student Adventures!



Downtown Geneva



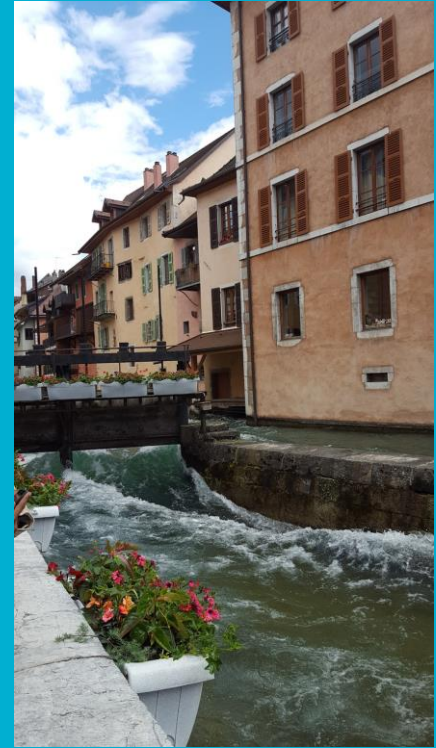
Stuttgart, Germany



Lausanne, Switzerland



Hiking Mont Salève



Annecy, France