ANNOUNCMENT for a MASTER PROJECT

in the ***Westerlund Lab***

Duration: 6-12 months (30-60 ECTS)
Start: fall 2017 or spring 2018
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Plasmids Causing Antibiotic Resistance in Swedish and Vietnamese Hospitals

Antibiotic resistance has by the World Health Organization (WHO) been deemed one of the largest threats to human health. A large part of the spread is caused by bacterial plasmids, DNA structures separated from the bacterial chromosome. It is therefore of interest to develop novel tools to identify and characterize plasmids from bacteria that are resistant to antibiotics and to understand how and where they spread.

The Westerlund Lab has several openings for master thesis in this field. We have an established collaboration with the Sahlgrenska University Hospital where the doctors are interested in improving the routines for distributing antibiotics. We are also starting a collaboration with a hospital in Vietnam, one of the countries in the world where antibiotic resistance is most critical.

We now offer the possibility of doing a master thesis in this highly interdisciplinary project. You will work with modern techniques to help answer important questions in hospital environments both in Sweden and in developing countries, such as Vitenam.

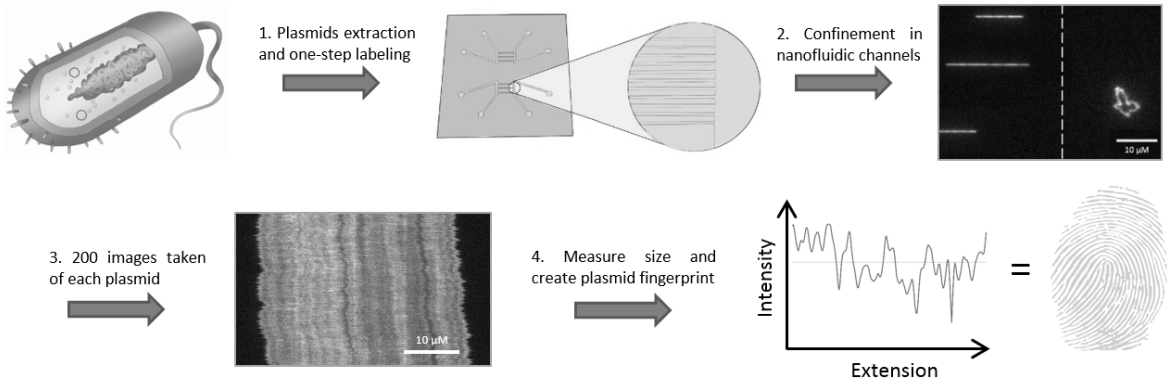

Figure. Schematic representation of the work flow in our optical DNA mapping

Müller, V. & Westerlund, F. Optical DNA mapping in nanofluidic devices: principles and applications. *Lab on a Chip* **17,** 579–590 (2017).

Müller, V. *et al.* Direct identification of antibiotic resistance genes on single plasmid molecules using CRISPR/Cas9 in combination with optical DNA mapping. *Scientific Reports* **6,** 37938 (2016).