

## NGS Reports – a web application for the automated generation of NGS run reports

### Bioinformatics

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Next-Generation Sequencing (NGS) cores need to provide their customers with accurate, complete, and easy to read reports describing the output of a sequencing run. These reports should include general information about the sequencing run, details on the sequencing library (e.g. PhIX contents), quality-control measures, the yield (number of reads generated per sample), and information on how to access and retrieve the sequencing data. In the case of Illumina sequencing, some of this information may be available through BaseSpace, but customers may not be familiar with its interface and with the exact meaning of the displayed parameters. Other information may only be available in the core's LIMS or administrative system, and therefore not accessible by customers.

The Interdisciplinary Center for Biotechnology Research (ICBR) at the University of Florida has developed NGS Reports, an intuitive and flexible web-based application to automatically generate sequencing reports for customers. The application, built using the Django framework, interfaces with Agilent CrossLab and BaseSpace to collect all relevant information about a sequencing project, and writes the report to a PDF file that is then sent by email to the customer.

When a new sequencing request is received the NGS staff uses NGS Reports to import the request details from CrossLab, which include name and email address of the customer. After the sequencing run associated with the request is complete, the relevant information is downloaded from BaseSpace and automatically linked with the request. Our application is able to either generate single reports for sequencing projects that involve multiple runs or multiple reports from a single run that may involve several customers. Once the report has been generated it can be printed and/or emailed to the customer, and the request can then be closed and archived. Generated reports remain available in the system, so that they can be reviewed at a later time if necessary.