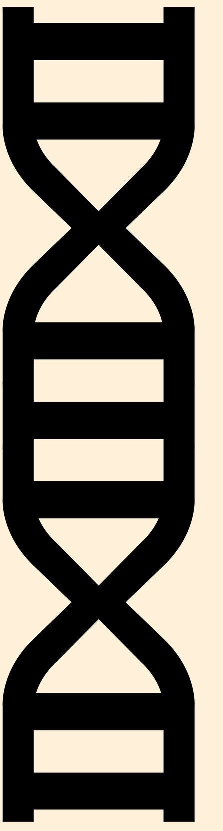
INTERLAB MEASUREMENT STUDY

INTRODUCTION

Every year, iGEM encourages teams to participate in an InterLab Measurement study. This year, teams aimed to improve measurement tools available to both the iGEM community and the synthetic biology community as a whole.

One of the big challenges in synthetic biology measurement is that fluorescence data usually cannot be compared because it is reported in different units or different groups process data in different ways. Commonly, a work-around is to use "relative expression" comparisons; however the inability to directly compare makes it difficult to debug engineered biological constructs, to effectively share constructs between labs, and to even interpret your experimental controls.

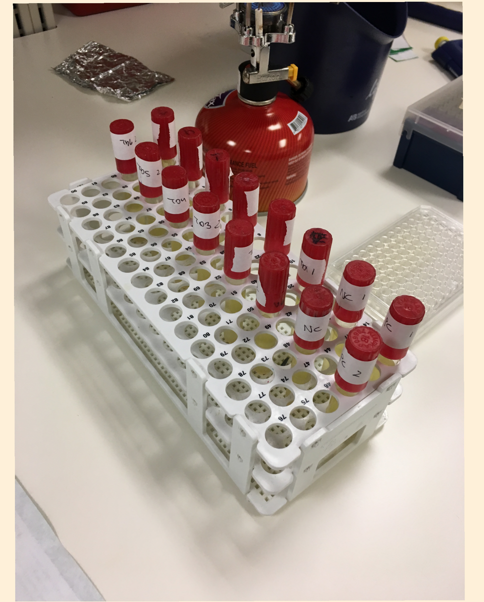


PROTOCOL

* Transform the 8 plasmids (Negative & Positive Control, TD 1-6)
* Set plate reader filters to excitation: 485 mm and emission: 530/30

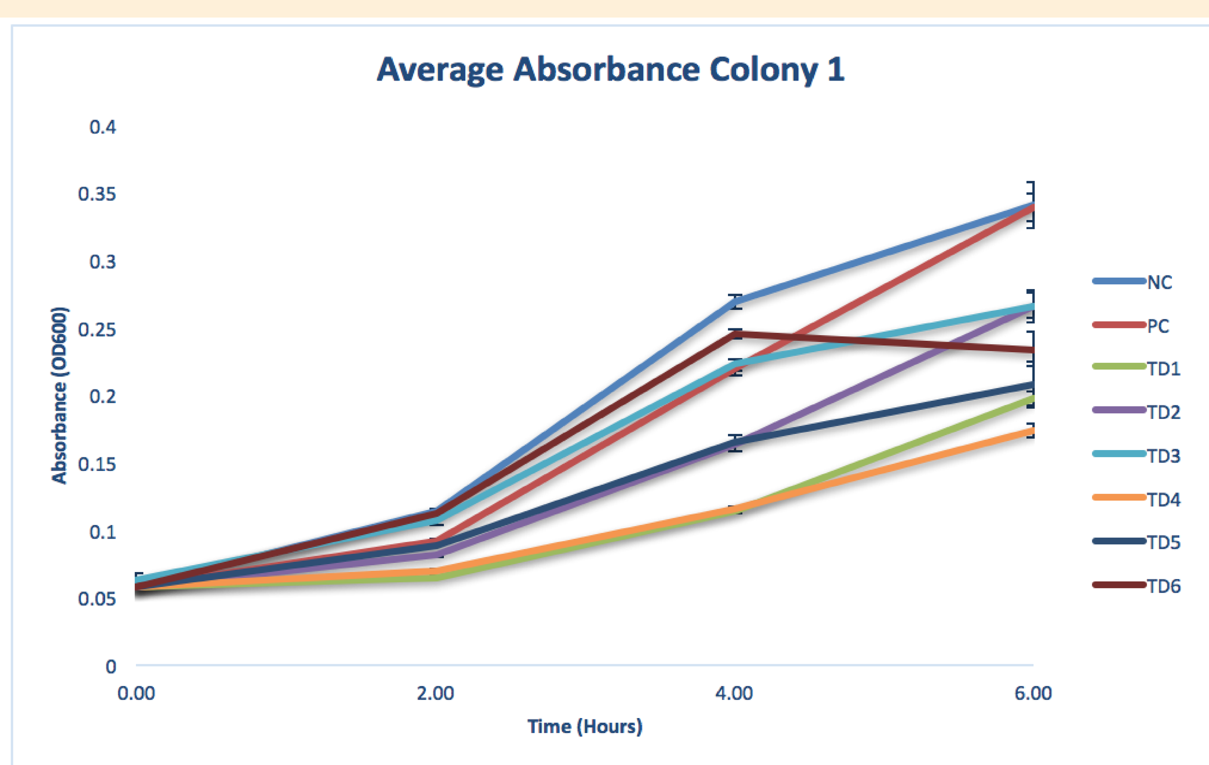
Standard Curves
* Create a OD600 calibration curve using LUDOX, H_2O
* Create a fluorescence standard curve by analyzing fluorescein dilution measurements

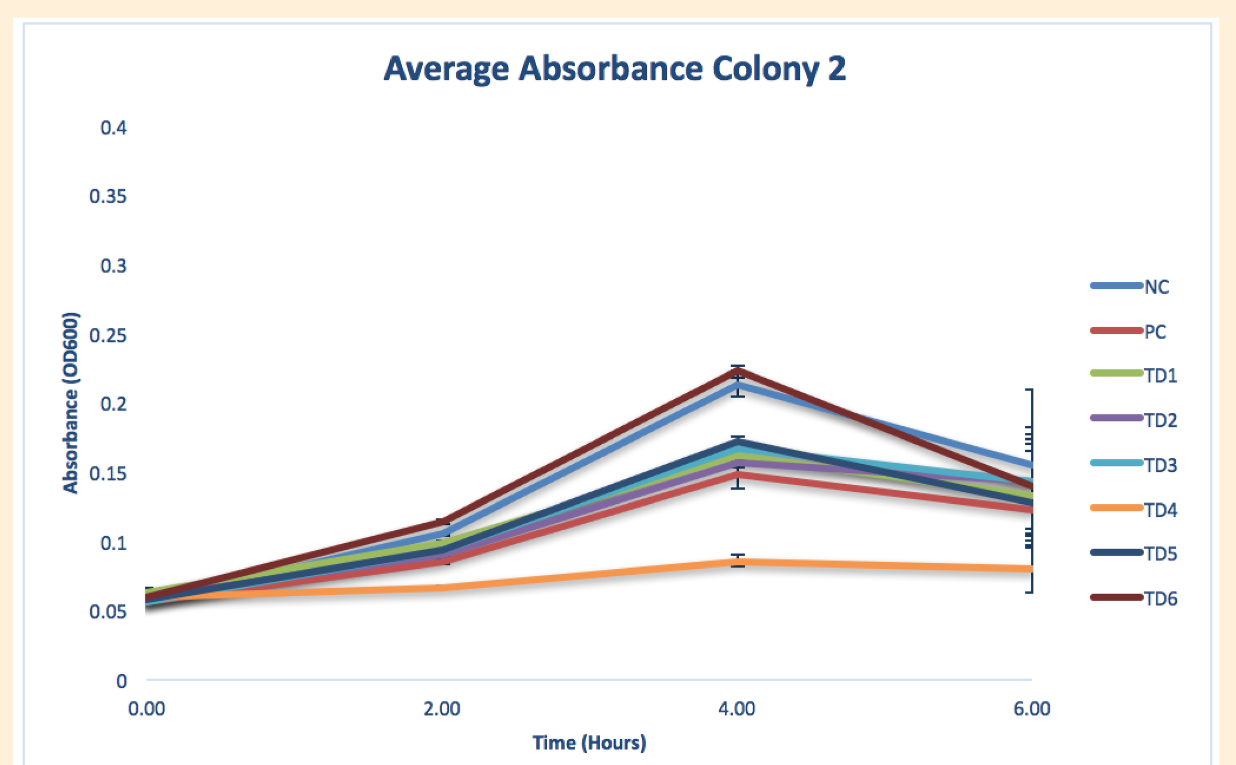
Cell Measurement Protocol
* Inoculate E Coli. colonies for 16-18 hours
* Dilute cell concentrations to a target OD600 of 0.02
* Inoculate colonies at 37°C and 220 rpm
* Record OD600 and Fluorescence every 2 hours for 6 hours

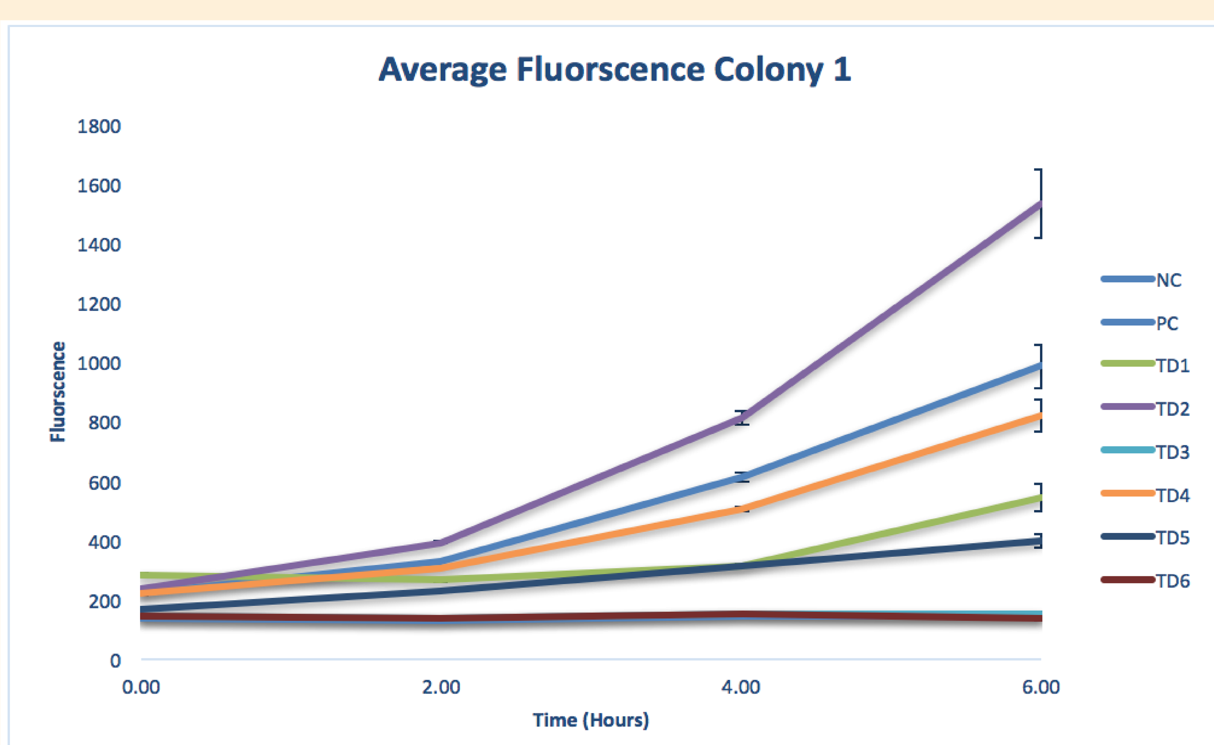


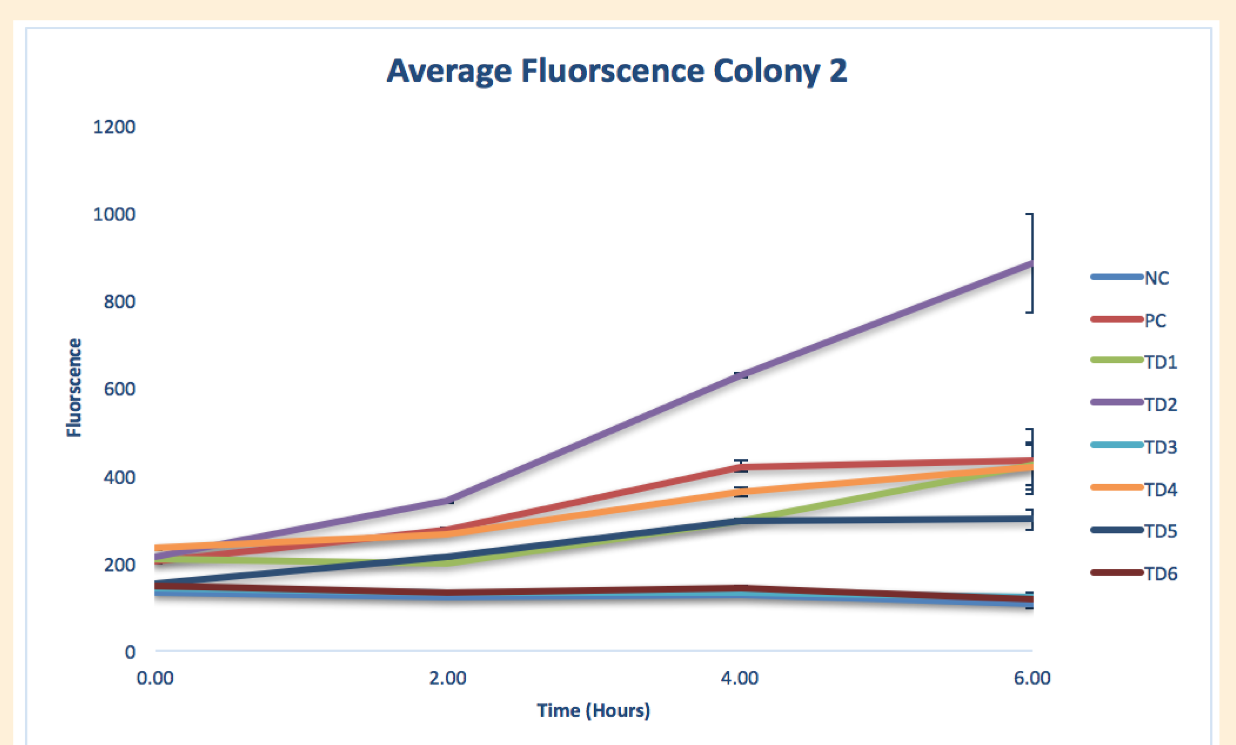
DATA

RESULTS









CREATIVE COMMONS IMAGES

Petros, A.M., Medek, A., Nettesheim, D.G., Kim, D.H., Yoon, H.S., Swift, K., Matayoshi, E.D., Oltersdorf, T., Fesik, S.W. Solution structure of the antiapoptotic protein bcl-2. Proc.Natl.Acad.Sci.USA v98 pp.3012-3017, 2001