

C3 Annual Report - 2019

Matters arising from previous reviews

Tecan Tip 4 no longer leaking (repaired)

Things of note from the C3 Huddles:

- Formulatrix imagers should no longer need a dongle for license
- Cinder updated (Ashes)
- MARCO implemented
- New heat sealer
- Lots of C6 improvements
- CM DB memory increased and CM test updated
- New C3 screens in use (Sets > 100)
- Rough pH (± 0.5 pH unit) now recorded of all new stocks
- Moved cross polarisation of LCP from inspection #6 to #10
- Record of Phoenix II QC now performed
- NATA reassessed
- New SOPs and associated competency matrix
- Oryx drop size issue still present
- Changed lysozyme dye concentration
- Fuse replaced in incubator
- New drop off protocol for samples
- 8°C imager needed a new motor 4
- Buffer screen 9g
- Phoenix II valve replaced
- Stock management now incorporating data about stocks that consistently precipitate
- More stocks moved to freezer for storage (high pH CHES, CAPS, Bis-tris)
- pH meter issues
- Mosquito connector broke again – fixed, spare now kept on site
- Compressor 1 repaired and returned
- Shotgun set renamed to 1-click set
- New user scores available

Software and infrastructure

- C3PO works on multiple plate selections
- Updates to C6
- Updates to See3
- GPSampr
- Small usability changes in CrystalChef

Complaints/Feedback

One incident where two users were waiting for an extended period of time to drop of samples as all C3 staff were in a meeting. This resulted due to a lack of communication between C3 staff and reception. The reception staff attempted to call C3 staff office phones and no one answered. They did not email the C3 Facility Director or call the C3 Facility Directors company mobile phone. Additionally they failed to inform the users that they could place their samples in the C3 Sample fridge supplied in the loading dock. To prevent this occurring again additional contact information and what to do if C3 is unattended was printed out and supplied to reception staff.

Out of focus drops in LCP plates

Lots of dust (particularly fibres) in drops

iQC analysis

- 2317 reports
- 7.5% Excellent (same as last year)
- 78.9% Good (up 11% from last year)
- 8.5% Fair (down 6.6% from last year)
- 5% Poor (down 4.5% from last year)

Students and Training

- Tiannin Sha (UROP) working on iQC
- Gabi Abrahams (UROP) working on BLASTing stuff.

Significant upgrades or method modifications

- New SOPs with competency requirements
- Competency rubrik

Development of new tests/methods

N/A

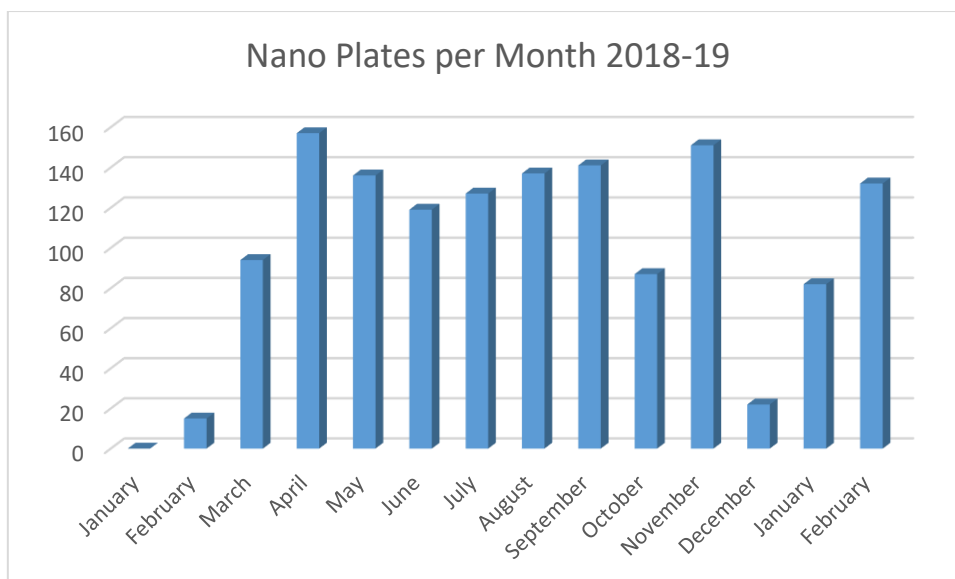
Results of audits

- Re-assessed by NATA under 1702518 and passed
- Internal audit passed with no suggested changes

Other items to be raised

Other

- 20 papers acknowledging C3
- 4 papers directly from C3 work
- 1371 (down from 1581) M plates
- 156 (up from 149) Z blocks
- 73 (down from 89) LCP plates
- 20+ new commercial screens added to C6



Facility Director's Report

Medium/Long Term Goals:

- Improve autoscoring – online learning
- Develop and implement QC on stock solutions
 - Possibility of using refractometry and osmometry
- To continue to develop C3PO optimisation and make it available to users
- Bring DLS and T_{agg} into the C3 as robust analyses
- Datamining using auto-scored images
- Paydirt screen (different precipitants, ionic liquids)
- Streamline stocks

Funding

- No changes in funding at present
- Seeking partnership opportunities through competitively awarded local and international grants

IT Infrastructure

- Investigate normalising our databases
- Investigate deployment of a redundant database to reduce server stress and increase speed

Machines

- Incorporate basic mass spec
- Investigate the inclusion of an X-ray generator for *in situ* screening (replacing PX scanner)
- Investigate Echo acoustic liquid dispensing technologies
- Replace Tecan

Software

- Refactor booking software
- Complete migration from CrystalTrak
- Export C3 software to the greater crystallisation community

Internal Recommendations for Improvements

- Simplify C3 interfaces
- Refine initial screens
- Extend Crystal.csiro.au