

Mission

Why do *one* experiment when you could do *hundreds*? The UCSC Chemical Screening Center (CSC) is a shared research facility providing screening technologies that aid in the discovery of therapeutic agents and biomedical research tools. The CSC is dedicated to improving human health, pushing the limit of scientific knowledge, and educating the next generation of biomedical scientists.

About Us

Dr. R. Scott Lokey
Professor of Chemistry
CSC Faculty Director



Dr. Beverley M. Rabbitts
CSC Director of Operations
New personnel

New lab space 465 Physical Sciences Building (CSC Office is 456 PSB)



New logo and **New website** <https://ucscscs.sites.ucsc.edu/>

Attention all users: please cite **RRID SCR_021114** in your acknowledgements.

Capabilities

Compound pinning, dilution series, cherry picking, plate reformatting, plate sealing, and desiccator.

Coming soon acoustic dispensing as low as 25 nL! And a user-friendly "personal pipettor."

Robotic plate handling with stackers.

Coming soon workstations with robotic arms and an automation scheduler. Integrated plate seal/peel, centrifuge, incubators, barcode reading, delidders, random access plate hotels.

Fast multimode plate reader with onboard shaker.

Coming soon monochromator-based plate reader with laser for alpha screen.

Bulk liquid dispensing, microplate washing.

Coming soon wash-dispense combination instrument, including 1536-format, dispenses as low as 1 μ L, self-cleans by sonication.

High content fluorescence microscopy, image quantification.

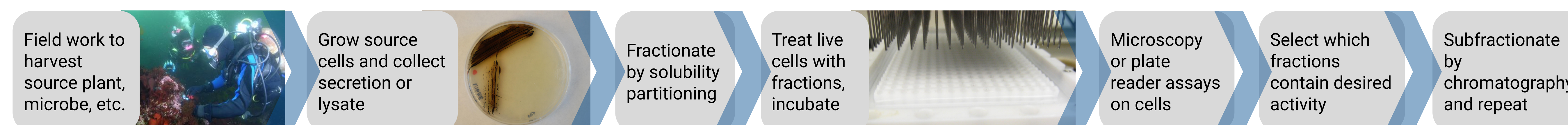
Coming soon confocal and phase imaging with environmental chamber, integrated with cell incubator. Advanced bioinformatics and deep learning.

Example Experimental Workflows

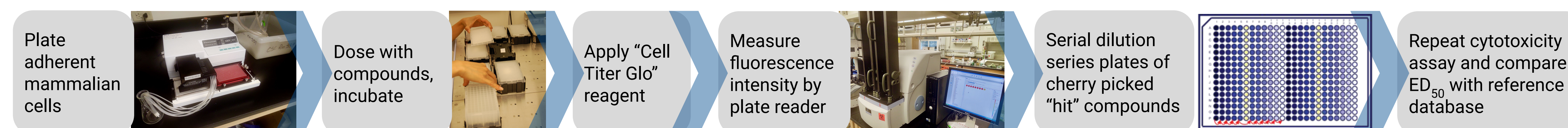
Cytological Profiling (and immuno-CP with macrophages):



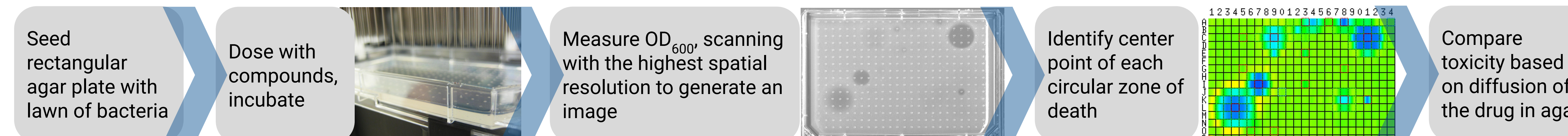
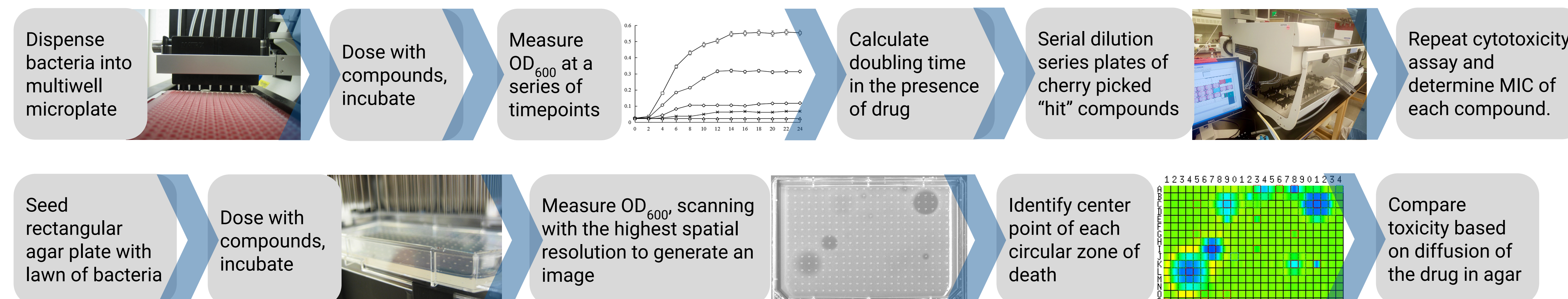
Bioactivity-guided natural product fractionation:



Cytotoxicity screen of commercial library by fluorescent assay in adherent mammalian cell cancer model:



Cytotoxic/cytostatic antimicrobial screen by liquid culture or agar plate:



Compound Libraries

From commercial and government sources:

- 100,000 natural product extracts - NCI library
- 20,000 diversity compounds - ChemDiv
- 2,000 FDA approved bioactives - Selleck Chem
- 1,000 known bioactives - Spectrum
- 500 fragments - Life Chemicals
- *Coming soon** expanded bioactives library



From collaborators:

- 10,000 marine and terrestrial natural products - a unique growing collection
- 400 natural product-inspired cell-permeable cyclic peptide library - Lokey

Plus we accumulate reference database of results collected for our compounds in a variety of assays, including cytological profiling, e.g. for guilt-by-association mechanism of action identification of a novel compound.

Funding

Announcement! this summer 2021, we were awarded a \$2M S10 High-End Instrumentation grant from the NIH Office of Research Infrastructure Programs.



Thank you! to the major users on our grant, who contributed project proposals:

- Victoria Auerbuch Stone
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- Phil Crews
- David Haussler
- Melissa Jurica
- Scott Lokey
- John MacMillan
- Carrie Partch
- Seth Rubin
- Bill Sullivan
- Anouk van den Bout
- Fitnat Yildiz

