An excellent source of yeast protocols can be found here: [http://cshprotocols.cshlp.org/cgi/collection/yeast](http://cshprotocols.cshlp.org/cgi/collection/yeast)

A primer on using yeast by Fred Sherman is here: [Sherman_Starting_with_yeast.pdf](http://cshprotocols.cshlp.org/cgi/collection/yeast)

A more general molecular biology protocols are here: [http://cshprotocols.cshlp.org/site/misc/subject.xhtml](http://cshprotocols.cshlp.org/site/misc/subject.xhtml)

### Media & Recipes

- **Common Yeast Media (YPD, SC, and the like)**
- **1000x Metals**
- **1000x Vitamins**
- **10L of 10x Nitrogen limited salts**
- **1L of 10X Phosphate Limitation Salts**
- **1L of 10x Carbon Limitation Salts**
- **100mM Nitrogen Stocks**
- **Glucose Limiting Media**
- **Nitrogen Limiting Media**
- **Phosphate Limiting Media**
- **Leucine and Phosphate Limiting Media**
- **Leucine and Uracil Limiting Media**
- **Nitrogen Agarose Plates**
- **Variable Nitrogen Source Limitation Carboy**
- **Denhardt's Media**
- **D-His/D-Ser Plates**

### Growth and Growth Assays

- **Coulter Counter**
- **Colony Counter**
- **Sixfors Chemostat**
- **Chemostat Protocols**
- **SYTO9 & PI FACS Viability Assay**
- **FACS-based analysis for competition experiments**
- **FUN-1 Metabolic Activity Assay**

### Yeast Cytometry

#### Fixing

- Ethanol fix
- Filter & PFA fix, lyticase digest, etOH permabilization
- Old-school (field standard) fix, digest, permeabilization for immuno or FISH applications

#### Probing/Staining
DNA content flow cytometry with Sytox Green
Amine/sulfhydryl staining (protein content proxy) with FITC
polyA staining using singly-labeled FISH
mRNA single molecule FISH with Stellaris-style probes
FISH for FACS applications, using Quantigene probes (BFF)
RNA content flow cytometry with RNAstyoSelect

RNA (and Expression Analysis)

Extractions, purifications, and enrichments:
- Yeast RNA Extraction (growing)
- RNA extraction from yeast, a different version (2016)
- RNA extraction from stationary phase yeast (thicker cell wall)
- Proteinase K-mediated extraction of RNA from yeast
- DNase treatment of RNA
- polyA selection
- Ribominus selection
- ecoli RNA extraction

cDNA for expression analysis:
- Making cDNA for Transcriptome Analysis - primarily microarray
- cDNA synthesis with M-Mulv RT - primarily for qPCR
- RT qPCR pre 2015
- RT qPCR workflow - from 2015

RNAseq
- RNA-Seq (directional) rnaseq RNAsseq
- Nextera Based RNASeq using ds cDNA from polyDT primers
- Nextera Based RNASeq using ds cDNA from Random Hexamers

4tU labeling related methods
- Making spike-ins, linearizing and in-vitro transcription
- HPDP Biotinylation of 4tU labeled RNA
- Streptavidin Pull-down of Biotinylated-HPDP-4tU RNA
- Dot Blot Assay

Analysis
- Separation of RNA by electrophoresis or Denaturing gel (formaldehyde) or Non-denaturing RNA gel
- Transfer of Denatured RNA to positively charged nylon membrane
- Preparation of an Exemplary RNAlater- RNA Preservation Medium

DNA
- Quick yeast gDNA extraction for PCR-based applications
- High Throughput DNA extraction with PureLink™Pro 96
- Hoffman Winston DNA Prep
- Southern Blot Analysis
- Bar-seq Barseq (high-throughput analysis of competing mutants, see Robinson, Chen, Storey, and Gresham 2014)
- low-input barseq, aka SoBaSeq for amplicon-sequencing of dead sorted cells
- DNA fragmentation
- Ethanol precipitation/concentration of DNA

DNAseq
- DNA Library Preparation Using Nextera tagmentation
- DNA Library Preparation For Illumina Sequencing (Update 05/2013 - Naomi Ziv)
- DNA Library Prepartaion For Amilicon Miseq Sequencing (Updated 04/2014 - Jungeui Hong)

DNA Microarrays - for cDNA from RNA, see above section
Molecular Biology

- Measuring DNA using SYBR Green
- Biobricking Protocol Overview
- Bioanalyzer protocol links, info
- TAP reagents
- TAP protocol
- DIG 3'-end labeling
- Detection of DIG labeled nucleic acid
- Annealing Oligonucleotides
- Non-denaturing polyacrylamide gel electrophoresis (PAGE gel)
- E. coli transformation
- Messing about with vectors, using PCR and NEB HiFi assembly

Yeast Techniques

- PCR-based Yeast allele replacement methods
- Colony PCR
- Dapi Staining and Morphology
- Sporulation / tetrad dissection
- Mating / mating type halo assay
- Using the Pinner to transfer the Yeast Deletion Collection to new plates
- Sonicator
- High Efficiency Transformation Protocol
- Density Fractionation and Trehalose & Glycogen Assay

Experimental Evolution

- Experimental evolution in chemostats

DGseq sequencing analysis

- DGseq sequencing adapter information
- Deduplicating a bam file using umi-tools
- DGseq demultiplexing
- DGseq removal of PCR duplicates reads

RATE-Seq

- RATE-Seq Protocol
- RATE-seq Bioinformatic Analysis

GitHub
Theme Songs, Chants, Incantations

- I'm GlycoBlue
- Qubit Song
- Ribozero Song
- Lost My Controls Again
- All the single labels