

# Freezer Challenge Resources



All labs must submit a scoresheet of My Green Lab's Freezer Challenge. All UNC-Chapel Hill labs that enter the My Green Labs contest will also be eligible for UNC Green Labs Challenge.

## Helpful Articles from My Green Labs

[Increasing ULT Freezer Storage Capacity with Limited Space and Budgets](#): This blog post describes the benefits of high-density cold storage, which can increase available floor space for vital research assets.

[Create Freezer Space As If By Magic](#): This blog post explains why high-density storage can improve energy savings and ways to create more space within cold storage.

[Evidence of Sample Stability at -70°C](#): This blog post discusses the energy savings associated with turning cold storage down to -70°C.

[Managing Cold Storage Isn't Just About the kWh](#): This blog post explains the importance of properly disposing of hydrofluorocarbon (HFC) refrigerants, especially as it pertains to the reduction of CO<sub>2</sub> emissions.

[Are You in It to Win It? Tips for a Successful Challenge](#): This blog post gives pointers to laboratories participating in the My Green Labs Freezer Challenge.

[Spring is Here! Let's Start Tidying](#): This blog post discusses strategies for taking inventory of laboratory items in cold storage.

[Blast the Ice Jam](#): This blog post talks about strategies for removing large chunks of ice from freezers and ways to defrost freezers while protecting samples.

## Storing Samples at -70°C

[Microorganisms](#): This 2004 paper from the American Society for Microbiology details the use of a Microbank system to preserve fungal strains. Many of the yeasts and molds stored at -70°C were well preserved.

[Storing Protein](#): This 2012 study in *Lipids in Health and Disease* tested how well samples of an enzyme were preserved following cold storage at -20°C, -70°C, and -196°C. The enzyme's activity remained consistent during 12 months of storage at both -70°C, and -196°C.

[Publications](#): This is a downloadable folder of research posters and papers on different types of samples stored at -70°C.

[Biological Samples Stored Long Term at -70°C or Warmer](#): This Google Sheet contains entries on a variety of sample types stored at University of Colorado Boulder; University of California, Davis; University of California, Riverside; University of California, San Diego; University of Alabama at Birmingham; Harvard University, and Virginia Tech.

## Storing DNA at -20°C

[Stability of Genomic DNA at Various Storage Conditions](#): This research poster describes how several different storage conditions were evaluated to learn the best method for storing genomic DNA while maintaining its integrity.

## Past Green Labs Webinar Downloads

[Decrease Energy Usage in the Laboratory with the Next Generation of Sustainable Ultra-Low Freezers](#) (Zip File)

[Advanced ULT Freezer Technology That Improves Both Energy Efficiency and Reliability](#) (Zip File)