**2022 NIH Freezer Challenge Results**

The 2022 NIH Freezer Challenge concluded on May 15, 2022. The 2022 Challenge marks the fourth consecutive year of this program that calls for NIH labs to take their freezer management to the next level. Competing in the Challenge and continuing these initiatives will improve freezer reliability, reduce energy consumption, and can even save researchers time and money.

The complete results from the 2022 NIH Freezer Challenge can be viewed in the table below. A few of the notable results include 35 ULT freezers changing to -70°C and 143 freezers shared between researchers. Changing the temperature of a ULT freezer to -70°C reduces energy consumption by up to 30% and sharing freezers can help eliminate unneccesary freezers and their energy use.[1]

| 2022 Freezer Challenge Initiatives | |
|---|---|
| **Challenge Initiative** | **Participation** |
| Change the ULT freezer temperature to (-70°C) | 35 freezers |
| Conduct a complete freezer defrost | 82 freezers/refrigerators |
| Replace old freezers/refrigerators | 17 freezers/refrigerators |
| Discard samples that are no longer needed | 19,280 samples |
| Retire unnecessary freezers (-80°C) | 5 freezers |
| Retire unnecessary freezers (-20°C to -40°C) | 9 freezers |
| Retire unnecessary refrigerators (4°C) | 8 refrigerators |
| Maintain an electronic sample inventory | 214 freezers/refrigerators |
| Use a barcode system to manage samples | 18 freezers/refrigerators |
| Share freezer space with other researchers | 143 freezers/refrigerators |

The 2022 Freezer Challenge initiatives combine to save an estimated 288,463 kWh per year. This reduction in electricity consumption will create an estimated savings of $29,138 per year and corresponds to a decrease of 205 metric tons of greenhouse gas emissions ($CO_2$ equivalent). The 2022 Freezer Challenge participants are listed below. The NIH Freezer Challenge has continued to grow over its four years as a program, up to 19 labs in 2022. However, there is still a large opportunity to reduce energy consumption from cold storage at the NIH. Please consider joining the Challenge in future years to support sustainability and freezer management at the NIH. Information on the freezer challenge can be found at the NIH Freezer Challenge Site. More information on each of the initiatives can be found in the NIH Freezer Challenge Guide.

| IC | LAB | PI | Freezer Challenge POC |
|---|---|---|---|
| NCI | Laboratory of Cell Biology | Michael M. Gottesman, M.D. | Barbara Murphy, M.S., M.T. |
| NCI | Laboratory of Human Carcinogenesis | Curtis Harris, M.D. | Adriana Zingone, M.D., Ph.D. |
| NCI | Molecular Oncology and Gene Transfer Section | Dennis Hickstein, M.D. | Thomas Bauer, Ph.D. |
| NEI | Laboratory of Immunology, Molecular Immunology Section | Charles Egwuagu, Ph.D. | Cheng-Rong Yu, M.D., Ph.D. |
| NHGRI | Bell Lab | Daphne W. Bell, Ph.D. | Ariana Umana Torres, Ph.D. |
| NHGRI | Childhood Complex Disease Genomics Section | Neil Hanchard, M.B.B.S, Ph.D. | Aparna Haldipur |
| NIAID | Arbovirus Vaccine Research Section | Stephen Whitehead, Ph.D. | Elaine Lamirande |

| IC | LAB | PI | Freezer Challenge POC |
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| NIAID | Immunobiology and Molecular Virology Unit | Andrea Marzi, Ph.D. | Joseph Rhoderick |
| NIAID | Molecular Pathogenesis Unit | Emmie de Wit, Ph.D. | Brandi Williamson, MPH |
| NIAID | Viral Epidemiology and Immunity Unit | Leah Katzelnick, Ph.D., MPH | Ana Coello Escoto |
| NICHD | Section on Molecular Transport | Sergey Bezrukov, D.Sc, Ph.D. | Megha Rajendran, Ph.D. |
| NIDCD | Section on Human Genetics | Thomas B. Friedman,Ph.D. | Barbara P. Zwiesler |
| NIDDK | Laboratory of Cellular and Developmental Biology | Jurrien Dean, M.D. | Minoo Shakoury-Elizeh, M.S. |
| NIEHS | Comparative Medicine Branch, Quality Assurance Lab | David Kurtz, D.V.M, Ph.D. | Tanya Whiteside |
| NIEHS | Genomic Integrity & Structural Biology Laboratory | Lars Pedersen, Ph.D. | Lars Pedersen, Ph.D. |
| NIEHS | In Vivo Neurobiology | Guohong Cui, M.D., Ph.D. | Amy Papaneri, M.S. |
| NIEHS | RTP Campus Freezer Replacement Initiative | | Kerri Hartung/Paul Johnson |
| NIEHS | Viral Vector Core | Negin Martin, Ph.D. | Negin Martin, Ph.D. |
| NINDS | Translational Neuroradiology Section | Daniel S. Reich, M.D., Ph.D. | Amanda Lee |