**New England Collaborative Data Management Curriculum**

**A Joint Initiative of the University of Massachusetts Medical School**

**and the National Network of Libraries of Medicine, New England Region**

**Research Data Management Concepts and Issues**

**Illustrated in the Teaching Cases**

|  |  |
| --- | --- |
| **Research Data Management Concepts** | **Teaching Case** |
| Analysis of data on different Operating Systems | * Enumeration and Gene-Sequencing of Bacteriophages |
| Animal data: documentation, ethical/legal concerns | * Regeneration of Functional Heart Tissue in Rats |
| Audio tapes | * Improving End of Life Care for African Americans |
| Challenges of Team Research: oversight of data management, turnover of research personnel | * Regeneration of Functional Heart Tissue in Rats * Studying Vitamin D as an Augmentation of Treatment for Bipolar Disorder * Combining Data from 10 Years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes |
| Collecting data from multiple researchers | * Combining Data from 10 Years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes * Data Preservation Case study: The ALIEnS Project |
| Confidential Human Subject Data | * Combining Data from 10 Years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes * Outcomes from Orthopedic Implant Surgery * Designing a Mobile and Compact Optical Mammography Instrument * Studying Vitamin D as an Augmentation of Treatment for Bipolar Depression * Improving End-of-Life Care for African Americans |
| Contextual Details and Naming conventions | * Combining Data from 10 Years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes * Studying Vitamin D as an Augmentation of Treatment for Bipolar Depression * Regeneration of Functional Heart Tissue in Rats * Using Zebra Fish as a Model System for Studying Motor Axon Guidance & Motorneuron Disease |
| Data Ownership Issues | * Characterizing a Component of a Rocket Engine used in Control Satellites (MATLAB code) |
| Data Sharing and Reuse | * Combining Data from 10 Years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes * Characterizing a Component of a Rocket Engine used in Control Satellites * Improving End-of-Life Care for African Americans |
| Institutional Repository | * Data Preservation Case Study: The ALIEnS Project |
| Lab notebook | * Regeneration of Functional Heart Tissue in Rats * Characterizing a Component of a Rocket Engine used in Control Satellites * Using Zebra Fish as a Model System for Studying Motor Axon Guidance & Motorneuron Disease |
| Legal and Ethical Concerns | * Characterizing a Component of a Rocket Engine used in Control Satellites * Regeneration of Functional Heart Tissue in Rats (animal data) |
| Managing the Digital/Print Divide | * Regeneration of Functional Heart Tissue in Rats * Studying Vitamin D as an Augmentation of Treatment for Bipolar Depression * Study of Habitat Selection and Requirements by Grassland Birds |
| Migration of image formats to open formats | * Enumeration and Gene-Sequencing of Bacteriophages |
| Multiple types of data generated in one project | * Regeneration of Functional Heart Tissue in Rats * Data Preservation Case Study: The ALIEnS Project |
| Proprietary Software | * Designing a Mobile and Compact Optical Mammography Instrument * Outcomes from Orthopedic Implant Surgery |
| Restrictions on sharing data | * Characterizing a Component of a Rocket Engine used in Control Satellites in Orbit |
| Retrospective naming of files and versioning | * Data Preservation Case Study: The ALIEnS Project |
| Simulation software | * Study of Habitat Selection and Requirements by Grassland Birds |
| Storage, Security, and Backup | * Characterizing a Component of a Rocket Engine used in Control Satellites * Improving End-of-Life Care for African Americans * Combining Data from 10 years of Research for Retrospective Studies on the Effects of Exercise and Diet on the Risk of Diabetes |



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License](http://creativecommons.org/licenses/by-nc-sa/3.0/us/). You are free to re-use part or all of this work elsewhere, with or without modification. In order to comply with the attribution requirements of the Creative Commons license (CC-BY), we request that you cite:

* **Editor**: Lamar Soutter Library, University of Massachusetts Medical School
* **Title**: New England Collaborative Data Management Curriculum
* **URL**: <http://library.umassmed.edu/necdmc>

Revised June 12, 2015