**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**

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| **Research Data Management Concepts**  | **Teaching Case** |
| Analysis of data on different Operating Systems | * Enumeration and Gene-Sequencing of Bacteriophages
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| 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
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| 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
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| Legal and Ethical Concerns | * Characterizing a Component of a Rocket Engine used in Control Satellites
* Regeneration of Functional Heart Tissue in Rats (animal data)
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| 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
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| 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
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| 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
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