PURPOSE OF THIS POLICY

Data are a valuable asset to the University and the assets. The University is the ultimate steward of research data and materials as defined herein. The goals of this policy are to:

- Support the faculty’s University’s mission
- Support research excellence
- Protect the legitimate interests of the University
- Protect the legitimate interests of researchers
- Acknowledge differing practices in different disciplines
- Support appropriate openness and University’s use of transparency, and access rights by addressing definition, responsibility, control, ensure accountability for the use of public funds
- Support compliance with Federal and distribution of Data produced during academic State laws, and research activities University statutes and regulations

This policy is supported by the University, supported by external sponsors, or produced with University facilities, resources, or other personnel. This policy is applicable to Data developed by:

BACKGROUND

1. Colorado State University faculty or staff (including student employees) in the course of is committed to disseminating its research and scholarship as widely as possible. In
keeping with that commitment, it supports the principle that the results of its research should be freely accessible where possible and where appropriate, and therefore supports its Research Staff and Students in making their employment by the research data available ‘as open as possible and as closed as necessary’, as articulated in the FAIR Principles for scientific data management and stewardship.

2. University. This policy assures that Data are adequately recorded, archived, retained, and accessible for sufficient time to support the associated research that produced the data and any intellectual property developed by/resulting from Research Staff and Students are responsible for managing and curating their research data in accordance with the policies of their research funders, the University’s IT Security Policy, Classified Research Policy, Dual Use Research of Concern Policy, Export Control Policy, Human Subject Research Policy, Research and Research-Related Misconduct Policy, and Intellectual Property – Copyright and Patents Policy [add other relevant CSU policies as appropriate]. Key aspects of these documents are incorporated into this policy.

3. Because research data is a rapidly evolving area, the policy provisions will be a living document that research. This policy supports the broad dissemination of Data, consistent with University policy and legal requirements regarding privacy, confidentiality and the like will be reviewed at least annually by university stakeholders and may therefore be subject to change.

APPLICATION OF THIS POLICY

This policy applies to all CSU departments and units, and all University employees (including but not limited to faculty, state classified employees, administrative professionals, and student employees). Research data and materials resulting from projects in which CSU students, affiliates and others participate in research activities at the University or with CSU may also be covered.

DEFINITIONS USED IN THIS POLICY

Active Data are research data files that are in the process of continuous change and/or development. Files containing this data are accessed, amended and/or updated as new data is gathered and/or processed.

Research Principal Investigator (PI) is the individual judged by the applicant/awarding organization as having the level of authority and responsibility to direct the sponsored project. The PI is responsible for ensuring expenditures are in accordance with sponsor and institutional regulations, policies, and procedures and responsible for regulatory compliance, effort reporting, and technical reporting back to the sponsor. Where Research Data and Materials are generated as a result of research that is not funded, the lead researcher responsible for such creation will be considered the “PI” for purposes of this Policy.

POLICIES OF COLORADO STATE UNIVERSITY

Research Data - Research Data and Materials
**Research Staff and Students** research staff are individuals undertaking academic research either in direct employment of the University or under formal agreement with the University in another capacity (e.g., retired staff) regardless of where that research is taking place, whether at CSU or elsewhere; research students are individuals who are undertaking academic research at the University as part of an informal research experience or in pursuit of an undergraduate or postgraduate degree or other award.

Research is a systematic investigation designed to develop or contribute to generalizable knowledge.

Research Data means the recorded factual material commonly accepted in the scientific community as necessary to validate research findings arising from or associated with research conducted at, under the auspices of, or using the resources of the University. “Data” covered in this policy includes not just Research Data but more broadly both intangibles (e.g., information and copyrighted works such as software and expressions of creativity, artistry or information) and tangibles (e.g., cell lines, biological samples collected for research purposes, synthetic compounds, organisms, and originals or copies of laboratory notebooks) arising out of the academic and research units of the University. Data collected by the University to facilitate and enable its business/academic functions are covered by the CSU IT Security Policy (http://policylibrary.colostate.edu/policy.aspx?id=492).

Research Data is the recorded factual information associated with the research, including, but not limited to, all records necessary for the reconstruction and evaluation of the results of research, regardless of the form or medium on which the material is recorded (such as lab notebooks, photos, digital images, data files, data processing or computer programs (software), statistical records, etc.). Research Data does not include books, articles, papers, or other scholarly writings that are published or publicly presented; drafts of such scholarly writings; plans for future research; peer reviews; or communications with colleagues.

Research Materials are the tangible items that are the product of research or that are used to conduct research. Examples of Research Materials include reagents, cell lines, plasmids, vectors, chemical compounds, and some kinds of devices and software.

**POLICY STATEMENT**

The University is ultimately responsible for the accuracy and sufficiency of records, the cornerstone of rigorous research and scholarly or creative activity. Therefore, the University is responsible for Data developed by University personnel in performing the duties of their employment by the University or through substantial use of facilities or...
funds provided by the University. Such responsibility applies to research funded by external sources and managed by the University, unless the University agrees to another arrangement in a grant, contract, or other agreement. Increasing use of technology for recording, storing and sharing data means that new norms are being developed for management of Data. The University must continue to explore and expand opportunities and resources for Data management and retention.

The University places a high value on its research mission and the rights and interests that researchers have in the data and results of research. Accurate and detailed research records are an essential component of any research project. Both the university and Research Staff and Students have responsibilities and rights concerning access to, use of, and maintenance of data resulting from research conducted at the University. Under this policy, the PI has the right, authority and duty to control the appropriate use of, and access to, any Research Data and Research Materials derived from activities under their management or supervision, including the use of data in scholarly publications and presentations. Under federal regulations, any tangible research property, including Research Data, Research Materials, and any other records of research conducted under the auspices of the University, belongs to the University.

The University’s responsibility for the scientific record for work/research conducted at the University, under University auspices, or with University resources is based upon (a) United States Office of Management and Budget Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance), 2 CFR § 200.333-337; (b) the University’s need to assess and defend charges of intellectual dishonesty, or misconduct; (c) the University’s need to support goal of supporting and commercialize the management of commercializing intellectual property; and (d) the University’s mission to develop and disseminate new knowledge.

**Principles**

1. Reproducibility of research is a central tenet of the University and all researchers are expected to conduct their work in a rigorous manner.
2. The University recognizes the importance of the long-term availability, with as few restrictions as possible, and long-term preservation of all research outputs including research data.
3. The University is committed to implementing procedures that are discipline-appropriate, proportionate, evidence-based, practical, cost-effective and sustainable, and in the best interests of enhancing its mission, in order to disseminate research and scholarship as widely as possible from research publications to all forms of research data.
4. The University is committed to achieving compliance with the data policies of its external research sponsors, publishers and governmental agencies, and requires its research staff and students to abide by terms and conditions agreed with third parties.
The University also recognizes that such third parties’ policies are evolving and that they may require higher levels of data accessibility and dissemination in the future.

5. The University recognizes that there is a balance between openness and duties under professional codes and legal obligations.

6. This policy applies to all research conducted by University Research Staff and Students.

The University supports principles such as the Concordat on Open Data and works in line with the FAIR principles and the CARE Principles for Indigenous Data Governance. It is working towards embedding these across the institution. The Research Data Best Practices reference has the most current and up-to-date information.

POLICY PROVISIONS

The University supports the principle of openness in research, creativity and scholarly inquiry. Open dissemination of data, processes, and results of research and other sponsored and scholarly activity is crucial to a vibrant and healthy academic environment. The University promotes the prompt and open exchange of Data with colleagues outside the investigator’s immediate laboratory or department, subject to relevant grants, contracts, other agreements, or applicable law.

In the case of externally sponsored research involving a grant, contract, or other agreement, the institution receiving the funding will generally own and be primarily responsible for the data. The Principal Investigator (PI) will be responsible for controlling storage, use, and distribution of Research Data arising from the research activity, subject to provisions of the applicable grant, contract, or other agreement, and University policy, or applicable law. If multiple PIs are involved in the creation of Research Data, they should agree up-front on what responsibility each will have with respect to Research Data. Where the research is performed without a grant, contract, or other agreement, such as institutionally sponsored research, the individual primarily responsible for the conduct of the research will be responsible for the storage, use and distribution of the Research Data arising from the activity.

The University’s current processes and best practices for management of research data is attached to this policy and will regularly be updated as necessary and appropriate.

Responsibility for Research Data

Responsibility for Research Data means:

1. Collection of Research Data, including production of defensible laboratory notebooks—Attributable; Legible; Contemporaneous/Complete; Original; Accurate;
2. Management of Research Data ensuring efficient and effective retrieval by the PI, other personnel within the research group, or appropriate administrative personnel or research sponsors;

3. Development of a formal research data management plan and procedures where appropriate;

4. Making reasoned decisions with respect to the need to retain raw and working data or records which are incorporated into the “final research data”;

5. Educating/advising individuals using or having access to the data of the requirements of data management plans and procedures;

6. Consideration of the need for a system for preserving Research Data in the event of a natural disaster or other emergency;

7. Retention of Research Data for the requisite period of time (see below);

8. Documented communication of the management system and description of the data managed to members of the relevant research group; and

9. When significant elements of data archival are provided for externally, for example in a federal or federally-funded archive, appropriate references to those data resources must be provided in the publications, theses, and other results of the research.

Retention of Research Data arising from Sponsored Projects

The supervising faculty member, PI or laboratory/department head must preserve Research Data for a minimum of three (3) years after the final project close-out/completion, with original Data retained and/or made available, where feasible. The following circumstances may require longer retention and may involve other offices or entities specific to the purpose for such retention:

1. Where Research Data supports a patent, such Research Data must be retained and/or made available as long as the patent and any derivative patents are pending or valid;

2. If allegations of scientific misconduct, conflict of interest, or other charges arise, data must be retained and/or made available until such charges are fully resolved;
3. If a student is involved, Research Data must be retained and/or made available at least until the degree is awarded or the student has unambiguously abandoned the work; and

4. Research Data must be retained and/or made available if required by the terms of a grant, contract, or other agreement, or applicable law.

Beyond these periods, destruction of the research record is at the discretion of the PI or the researcher. Research Data may be retained in the administrative unit where generated or elsewhere as appropriate, but must in all cases remain accessible by the University during these retention periods.

Data Transfer When a PI Leaves the University or a Grant is Transferred

When employees involved in research projects who are not PI’s at the University leave the University, they may take copies of Research Data for projects on which they have worked. The supervising faculty member or PI must, however, retain the original Research Data at the University or ensure the data are available if archived elsewhere, unless specific permission to do otherwise is granted by the AVPR. If a PI involved in a research project leaves the University, they may take copies of Research Data for projects on which they have worked. The original Research Data must be retained by and/or made available to the University.

If a faculty member or PI leaves the University, and a research project is to be moved to another institution, custody of the Data may be transferred with the approval of the AVPR and OGC, and, with written agreement from PI’s new institution that guarantees: a) its acceptance of custodial responsibilities for the Data, and b) that Colorado State University be given access to the Data should that become necessary.

Any other requests for Data transfers will be considered on a case by case basis by the AVPR and OGC.

Note that the University will retain its ownership rights in Data developed at the University absent a written agreement to the contrary.

Research Data Associated with Theses and Dissertations

The research landscape has evolved to encompass expectations to share and reuse data to accelerate the pace of research and discovery. Current practice is to regard the corpus of research information as the combination of the scholarly publication and any and all associated data sets. Such data sets are data sets associated with and referenced in a formal
publication, a thesis, or a dissertation. This policy does not apply to “working data sets” or “raw data sets” that are not yet finalized, for example data sets that are input and output files for computation or experimentation before they become stable and are then used to produce the final results in the thesis, dissertation, or publication.[1] To preserve the complete scholarly record of the author, data sets must be incorporated. Therefore, a student depositing their thesis or dissertation is required to make discoverable, accessible and available their associated data sets in accordance with this policy and provisions of the University’s Digital Repository. Access and rights management (embargo period, access limited to specific IP addresses) shall be the same for the associated data sets as it is for the thesis or the dissertation.

[1] Where working data sets or raw data sets support a patent application/filing, they may need to be preserved. This should be identified by the Colorado State Research Foundation during the disclosure and patenting process.

COMPLIANCE WITH THIS POLICY

Compliance with this policy is required. Compliance assistance may be obtained by contacting the Office of the Vice President for Research referencing the associated Research Data Operational Provisions document, detailing relevant offices.

REFERENCES

University Libraries, Data Management Resource Page
Mountain Scholar Digital Repository
CSU Policy: Information Technology Security
CSU Policy: Information Collection and Personal Records Privacy
CSU Policy: Central Administrative Data Governance
CSU Policy on Export Control
Federal Regulations and Policies:
2 CFR 200.315; 45 CFR 75.322: Rights in intangible property acquired under federal awards belong to the institution as the grantee.
NIH Grants Policy Statement §8.2.1: “In general, [grant] recipients own the rights in data resulting from a grant supported project.”

National Academies Science Engineering Medicine Open Science Report (NASEM)
United Nations Educational, Scientific and Cultural Organization (UNESCO)

POLICIES OF COLORADO STATE UNIVERSITY

Research Data-Research Data and Materials
APPROVALS

Approved by Anthony A. Frank, President, May 17, 2016

Revision approved by Lynn Johnson, Vice President for University Operations on
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RESEARCH DATA BEST PRACTICES

Because research data is a rapidly evolving area, all university stakeholders are invited to submit update information for this document to:

- Institutional Research
- IT Security
- CSU Libraries
- OVPR/RIO
- Research IT
- Office of Sponsored Programs
- IRB
- DSRI
- IRISS

DEFINITIONS USED

A Data Management Plan is a document that outlines how data will be managed from the point of data collection or acquisition at the start of a research project all the way through to what will happen to the data once the project finishes. Typically, a data management plan (DMP) will cover areas such as data collection strategy, backup and storage of data, ethical/legal requirements related to data, data sharing and archiving, and project roles and responsibilities.

Metadata is information that describes significant aspects of a dataset. For example, this may include authors, title, date of publication, unique identifier, a description of what the dataset contains and a reuse license. This provides other researchers with the information needed to understand and reuse the dataset as well as making the dataset more findable.

BEST PRACTICES

Ownership of and Responsibility for Research Data and Research Materials

1. In the case of externally-sponsored research involving a grant, contract, or other agreement, the institution receiving the funding will generally own and be primarily responsible for the Research Data and Materials. The PI will be responsible for controlling storage, use, and distribution of Research Data and Materials arising from the research activity, subject to provisions of applicable agreements, university policies and laws. If multiple PIs are involved in the creation of Research Data and Materials, they should agree upfront, via a written data management plan on what rights and responsibilities each will have with respect to Research Data and Materials.

2. Where the research is performed without an agreement, such as in the case of institutionally-sponsored research, or unsponsored activities, the individual primarily responsible for the conduct of the research will be responsible for the storage, use and distribution of the Research Data and Materials arising from the activity.
3. Creation of an appropriate data management plan is highly encouraged for all research that generate Research Data and Materials. When sharing Research Materials outside the University a material transfer agreement should be used.

4. Except as otherwise provided in a written agreement, in this Policy or in Section J of the Academic Faculty and Administrative Professional Manual, the University is the owner of Research Data and Materials, and the PI is the steward of the Research Data and Materials that are under their control. PIs are responsible for managing access to Research Data and Materials under their stewardship. PIs will select the vehicle(s) for publication or presentation of the data. PIs decide whether to share Research Data, including placing Research Data in public repositories, unless specific terms of sponsorship or other agreements limit this right. Responsibility for Research Data and Materials includes:
   a. Development of a formal Research Data Management Plan and procedures where appropriate;
   b. Management of Research Data and Materials ensuring efficient and effective retrieval by the PI, other personnel within the research group, or appropriate administrative personnel or research sponsors;
   c. Making reasonable and equitable decisions about the use of and access to Research Data and Materials by those involved in projects from which they arise including, without limitation, students;
   d. Educating/advising individuals using or having access to the Research Data and Materials of the requirements of data management plans and procedures or other applicable controls, limitations or compliance requirements employing Data Use Agreements (DUA) and Data Transfer Agreements (DTA) as necessary;
   e. Collection of Research Data, including production of defensible laboratory notebooks that are attributable, legible, contemporaneous, complete, original and accurate;
   f. Making reasoned decisions with respect to the need to retain raw and working data or records that are incorporated into the “final research data”;
   g. Establishing a system for preserving Research Data and Materials in the event of a natural disaster or other emergency;
   h. Retention of Research Data for the requisite period (see below); and
   i. When significant elements of archival data are provided externally, in a federal or federally-funded archive for example, appropriate references to those data resources must be provided in the publications, theses, and other forms of dissemination of the research.

Retention of Research Data arising from Sponsored Projects

The supervising faculty member, PI, or laboratory/department head must preserve Research Data for a minimum of three (3) years after the final project close-out/completion, with original Research Data retained and/or made available where feasible. The following circumstances may require longer retention and may involve other offices or entities specific to the purpose for such retention:

1. Where Research Data supports a patent, such Research Data must be retained and/or made available as long as the patent and any derivative patents are pending or valid;
2. If allegations of scientific misconduct, conflict of interest, or other charges arise, Research Data must be retained and/or made available until such charges are fully resolved;
3. If a student is involved in the project(s) generating Research Data, the Research Data must be retained and/or made available at least until the degree is awarded or the student has unambiguously abandoned the work; and
4. Research Data must be retained and/or made available if required by the terms of a grant, contract, or other agreement, or applicable law.

After all retention periods have expired, destruction is at the discretion of the PI, Research Staff or Student. Research Data may be retained in the administrative unit where generated or elsewhere as appropriate but must in all cases remain accessible by appropriate parties at the University during these retention periods.

**Data Transfer When a Researcher Leaves the University or a Grant is Transferred**

If a faculty member or PI leaves the University, and a research project is to be moved to another institution, custody of the Research Data or Research Materials may be transferred with the approval of the Associate Vice President for Research, and with written agreement from the former employee’s new institution that guarantees: a) acceptance of custodial responsibilities for the Research Data and/or Research Materials, and b) Colorado State University will be given access to the Research Data should that become necessary. In all cases, copies of the Research Data must be retained by and/or made available to the University. CSU may require that at least a portion of Research Materials remain at the University or impose other conditions or restrictions on such transfer.

When employees involved in research projects who are not PI's at the University leave the University, they may request permission to take copies of Research Data or take Research Materials for projects on which they have been materially involved with the creation of the Research Data or Materials. This request should be made in writing to the supervising faculty member or PI and approval of such request will not be unreasonably withheld, although it may be subject to reasonable conditions. The PI must, however, retain the original Research Data and, if relevant, a portion of the Research Materials at the University or ensure they are available if archived/stored elsewhere unless specific permission to do otherwise is granted by the Vice President for Research (or designee).

In all cases, when Research Data or Materials are to be utilized by Research Staff or Students after leaving the University, any future publication utilizing the Research Data or Materials, in whole or in part, must be approved by the University PI who oversaw creation of the Research Data, which approval shall not be unreasonably withheld or conditioned. Proper credit and attribution, including authorship, must be given in all such publications.

Any other requests for data or material transfers will be considered on a case-by-case basis by the Vice President for Research.

Note that the University will retain its ownership rights in Research Data and Materials developed at the University absent a written agreement to the contrary.

**Disputes involving Research Data or Materials**

While the PI is responsible for the use and disposition of Research Data and Materials, there may be occasions where a dispute arises with respect to such data or materials. If there is a concern about access to or use of Research Data or Materials and the PI is unable to resolve this concern to the satisfaction of all parties, this may be referred to the Research Integrity Officer (RIO) for resolution1. Where the person raising the complaint is a graduate student, the dispute may be
raised by the student with the Dean of the Graduate School (the "Dean"). The RIO, in consultation with the Vice Provost for Faculty Affairs (VPFA) and/or the Dean, shall make a determination as to the proper resolution of the dispute. If the party that has raised the dispute is unsatisfied with the resolution, an appeal may be made in writing to the Vice President for Research and the Provost who will make a final disposition.

**Research Data Associated with Theses and Dissertations**

To preserve the complete scholarly record of the author, a student depositing their thesis or dissertation is encouraged to make available their associated data sets in accordance with the policies and procedures for theses and dissertations in the University’s Mountain Scholar digital repository (a database designed to store, index, distribute, and preserve the scholarship of Research Staff and Students of the University in digital form). Access and rights management (embargo period, access limited to specific IP addresses) shall be the same for the associated data sets as it is for the thesis or the dissertation.

**Export Controlled Data**

Before sharing Research Data or Materials or making it accessible to a foreign national, whether in the United States or abroad, it is critical for researchers and scholars to familiarize themselves with the CSU Policy on Export Control and request assistance with reaching a determination as to the applicability of export control regulations. Contact the OVPR for assistance.

**Data Related to Patent Filings**

Where working data sets or raw data sets support a patent application/filing, they may need to be preserved. This should be determined by the Colorado State Research Foundation during the disclosure and patenting process.

**REFERENCES**

University Libraries, Data Management Resource Page

Mountain Scholar Digital Repository

CSU Policy: Information Technology Security

CSU Policy: Information Collection and Personal Records Privacy

CSU Policy: Central Administrative Data Governance

CSU Policy: Export Control

Federal Regulations and Policies:
Researchers should confirm sponsor/agency specific guidance and regulations.

SPARC list of Research Funder Data Sharing Policies

NSF Data Management Plan Requirements

NIH Data Sharing Policy

2 CFR 200.315; 45 CFR 75.322: Rights in intangible property acquired under federal awards belong to the institution as the grantee.
NIH Grants Policy Statement §8.2.1: “In general, [grant] recipients own the rights in data resulting from a grant supported project.”