Research Reproducibility 2020
Educating for Reproducibility: Pathways to Research Integrity
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Collaborative initiatives driven by a biorepository to support reproducible research

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In the life sciences, data often come from collecting information from biological experiments using materials like cell lines, plasmids, and experimental organisms. Instead of having to make materials from scratch, researchers can save time and money by requesting what they need from a centralized biological repository such as Addgene. Addgene is a global, nonprofit repository that was created to help scientists share biological materials. Addgene handles material authentication through quality control, material storage and record-keeping, and curating accompanying material information.

When scientists don't sufficiently identify and share the materials used in their studies, results can be impossible to reproduce. Lack of access to the correct materials slows down research and can lead to irreproducible results, ultimately hindering scientific progress. For example, the Cancer Reproducibility project came to a halt when trying to replicate scientific results from publications for which reagents were not available from the scientists that originally made them. The self-correcting mechanisms of the scientific community are dependent on the ability of scientists to reproduce the results of published research.

Addgene is passionate about driving a culture change in science towards a mindset that includes reproducibility as an important part of efficient, sustainable, and productive research. Towards that end, Addgene has worked with journals and publishers to create and update material sharing policies as part of instructions to authors. Requiring reagent deposition and reminding authors about this requirement during peer review is a timely strategy that ensures access to materials and ultimately facilitates reproducibility. Systemic change starts from within: Addgene has been a collaborator of the *Reproducibility for Everyone* group that organizes workshops to present a range of practical tools that empower researchers to adopt best practices along the themes of organization, documentation, analysis, and dissemination. The group enables researchers to teach each other by giving them the means and contacts to organize their own reproducibility workshops. Through these initiatives, Addgene is working to facilitate more reproducible practices amongst researchers.