

## Twelves principles for efficiently supporting quality in research



<p><b>1. Approach to research quality</b> The University of Liège promotes excellence and quality in research. The institution keeps track of its strengths and weaknesses in terms of supporting its members towards responsible and ethical research. This includes research methods, data management, transparency and open science.</p>	<p><b>2. Position in the academic landscape</b> The University of Liège asserts its position in the (inter-)national academic landscape, maintaining high standards of scientific integrity and ethics, with a particular attention to counselling and encouraging best practice in its research community.</p>	<p><b>3. Awareness and skills development for all career stages</b> The University of Liège must raise awareness among all researchers, across all sectors, including PhD students, of scientific integrity and ethics. Newcomers must be informed of its standards.</p>	<p><b>4. Transparency and quality in processes</b> The University of Liège has been a trailblazer in open access research, and each member must publish its research results with the highest level of transparency possible, whatever their conclusions may be. They must be reproducible and be as open as possible..</p>
<p><b>5. Best practice</b> Researchers must adopt best practice and work with integrity when it comes to data management and analysis. Such best practice encompass for example pre-registration, experiment and data planning, reproducibility reviews, or multiple statistical tests. Researchers must ban questionable practice such as p6hacking, cherry picking or data dredging.</p>	<p><b>6. Methodology and data analysis skills development</b> Researchers must be able to self-evaluate their methodological skills, especially regarding research data management and analysis. They must be given the opportunity to get additional training, if necessary, to acquire sufficient skills to conduct their research with integrity.</p>	<p><b>7. Methodology and Data analysis counselling</b> Quality in research builds upon self-improvement in researchers. The latter must be able to find and call upon experts with complementary, when needed to carry out a research project with integrity.</p>	<p><b>8. Tooling the community for quality in methodology and data analysis</b> The University must develop, provide and promote a strong panel of tools and services to support quality, ethics, openness and integrity in methodology and data analysis.</p>
<p><b>9. Responsibilities and obligations as a researcher</b> Researchers must be aware of the stakes and obligations of scientific integrity, openness and ethics, especially those related to their research subject. They should work both individually and as a community to assess their commitment towards quality.</p>	<p><b>10. Acknowledging the third mission</b> The University must explicitly promote and acknowledge the work researchers carry out to support their community, especially regarding research quality, data management, data analysis and methodology</p>	<p><b>11. Meta-research</b> The University of Liège must keep up with best practice in responsible research and continuously assess its own standards of ethics and integrity, especially through meta-research.</p>	<p><b>12. Dissemination</b> As per the European Charter for Researchers, researchers are encouraged to disseminate their results towards peers as well as a general audience. They must use their voice of expertise with integrity, which means, within their area of knowledge and with a factual approach.</p>