

## **Mentorship and Responsibility for Future Scientific Generations**

As stated in the Netherlands Code of Conduct for Scientific Practice by the VSNU<sup>1</sup>, scientific activities should be performed scrupulously, but scrupulousness also applies to relations among scientific practitioners and with students. In particular, the education of young scientists requires binding standards for mentorship and supervision<sup>2</sup>. Good mentorship is essential: young scientists or trainees are in a position of dependency<sup>1</sup>. For our purposes, a trainee includes PhD students and postdoctoral fellows, although much of the below also applies to supervision of anyone in a junior or apprentice position, including a junior faculty member.

While the main responsibility of supervisors is guiding the academic progress of their trainees, supervisors should assist their trainees in becoming independent researchers and take responsibility for the future scientific generation by ensuring the quality of research and teaching in the future.

Guiding the development of an independent researcher entails more than overseeing the trainee's work and progress. In the below, several professional responsibilities of supervisors towards PhD students and postdocs are listed. These are informed by descriptions of mentor roles delineated by the American Psychology Association<sup>3</sup>, the Netherlands Code of Conduct for Scientific Practice by the VSNU<sup>1</sup>, and the European Code of Conduct for Research Integrity by the European Science Foundation & All European Academies (ALLEA)<sup>2</sup>.

### Good supervisory practice

Good supervisors...

1. Model professional responsibilities. Supervisors serve as important role models and should act with integrity in every aspect of their work as teacher, researcher and colleague.
2. Challenge and encourage trainees appropriately to facilitate growth. This may require tailoring supervision styles and content to the individual, including adjustments due to differences in gender, culture, etc.. It may also involve stimulating critical thinking and fostering the development of metacognitive knowledge and skills.

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<sup>1</sup> [http://www.vsnunl/files/documenten/Domeinen/Onderzoek/The Netherlands Code of Conduct for Scientific Practice 2012.pdf](http://www.vsnunl/files/documenten/Domeinen/Onderzoek/The_Netherlands_Code_of_Conduct_for_Scientific_Practice_2012.pdf)

<sup>2</sup> The European Code of Conduct for Research Integrity by the European Science Foundation & ALLEA (All European Academies)

<sup>3</sup> <http://www.apa.org/research/responsible/mentoring/index.aspx>

3. Structure the research process carefully. Supervisors should help develop schedules and set deadlines in the process, organize regular meetings and generally be available, and provide timely and constructive feedback.

4. Oversee professional development. Supervisors should take an interest in developing the trainee's career and encourage the trainee to attend and present their research at scientific conferences, and help the trainee create important professional networks. In advancing academic and professional goals, they should take into account directions desired by the trainee. Not all trainees may want, or be able to remain in academia, and supervisors should also support their trainees where possible in developing specific skills within their scientific projects that may benefit careers outside of academia.

5. Take an interest in the trainee's well-being. Supervisors should ensure that the workload is not too high and that expectations are realistic and clear.

6. Assist with the navigation of professional settings and structures. Supervisors should provide information beyond what is helpful to the scientific project - that is essential for professional success, but is often unwritten or vague, such as how to build a strong CV, obtain funding, become part of the academic community, use time effectively, and understand departmental politics.

7. Do not abuse or withhold their power. Supervisors generally have a position of authority within the university context, rendering the supervisor-trainee relationship inherently imbalanced in power. Personal relationships should be avoided that may give rise to reasonable doubt concerning the objectivity of decisions, or that may result in any form of coercion or exploitation of a hierarchically subordinate person<sup>1</sup>. Supervisors are expected to give the trainee appropriate credit for any joint publications<sup>2</sup>, and only accept assistance from the trainee in their own professional responsibilities within appropriate limits<sup>3</sup>. They do not exploit the trainee to the benefit of their own career interests, or withhold their power when the trainee cannot be exploited.

8. It is expected that supervisors keep learning about effective mentoring, e.g., by following courses such as the course 'Superb Supervision', offered by the UvA. The supervisor should also use the yearly progress evaluation to adjust his/her mentoring style based on feedback of the supervisee, if necessary.