

Ethics and the Professional  
Chemist:  
Training in University Programs

*How do we train a Professional  
Scientist?*

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# Related Higher Education Professional Programs

- Medicine {Dentistry}
- Law
- Business
- Engineering

# Formal Ethics Training (McGill University, 2014)

Profession	Classes	Notes
Medicine, M.D.	Medical Ethics/Health Law	7 sessions at end of second year as part of the transition to clinical practice.
Law, L.L.B.	Legal Ethics, 1 and 2.	One of six required second year courses. Taken over whole year as part of a Practicum series.
Engineering, B. Eng.	Introduction to the Engineering profession	1 credit first year orientation course for all engineering students. Ethics covered briefly.
Business, B. Comm.	Ethics in Management	Full semester 3 credit course utilizing case studies.
Chemistry, B.Sc.		

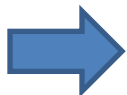
# Two Common Concerns about Introducing Ethics into Chemistry Training

1. Professional ethics are best taught in the research advisor/student interaction at the graduate level

Research groups are often large

Modern research is often highly interdisciplinary

Competitive enormous pressures for funding and publication priority.



One on one time with advisor tends to suffer, and with it the chance for the informal opportunities for training , such as in professional ethics.

# Ethical training in chemistry continued

2. Not possible to teach ethics; people either are moral or they are or not.

But modern science is an abstract highly technical enterprise everyday morality not really germane.

For example:

Who should be a co-author? How does one handle spurious or unaccountable data? Can an experiment be done safely? Role of intellectual property in all phases of science?

# Towards solutions....

**(But these are ultimately ethical issues not mathematical problems with a single solution.)**

Resources for students and advisors; case studies in ethical science.

Awareness of the Chemical Weapons issues and existence of the of Chemical Weapons Convention.



Office for Science and Society

Organisation pour la science et la société

**Outreach: ~ 250/year presentations to schools and civic groups.  
Radio and newspaper columns, books and a blog page.  
Frequent presentations to Parliament and government.**



**DEMYSTIFY SCIENCE**

**KEEP PEOPLE UP TO DATE  
ON SCIENTIFIC PROGRESS**

**FOSTER CRITICAL  
THINKING**

**SEPARATE SENSE FROM  
NONSENSE**

**KEEP PEOPLE OUT OF THE  
CLUTCHES OF CHARLATANS**





