

Chautauqua Short Course

Communicating Chemistry
Reaching Students and the Public-at-Large

June 2-4, 2002

Prof. Bassam Shakhashiri

Transparencies from Opening Session

“Science is a hexagonal mountain with six faces... The three beautiful faces of science are science as subversion of authority, science as an art form, and science as an international club... Science is presented to our young people as a rigid and authoritarian discipline, tied to mercenary and utilitarian ends, and tainted by its association with weapons of mass murder... The way to attract young people into science is to show them all six faces and give them freedom to explore the beautiful and ugly as they please.”

**Freeman Dyson
From Eros to Gaia, 1997**

“A failure of science to produce benefits for the poor in recent decades is due to two factors working in combination: the pure scientists have become more detached from the mundane needs of humanity, and the applied scientists have become more attached to immediate profitability.”

**Freeman Dyson
Imagined Worlds, 1997**

CLARITY OF PURPOSE

THE PURPOSE OF EDUCATION:

**TO ENABLE INDIVIDUALS TO FULFILL THEIR
HUMAN POTENTIAL.**

**THE PURPOSE OF RESEARCH:
TO ADVANCE KNOWLEDGE.**

THE PURPOSE OF TECHNOLOGY:

TO ADVANCE THE HUMAN CONDITION.

The demoralization of society is advanced when the word "values" supplants the word "virtues" in political and ethical contexts. When we move beyond talk of good and evil, when the categories virtue and vice are transcended, we are left with the thin gruel of values talk.

Unlike virtues, everyone has lots of values. Everyone has as many as they choose! Hitler had lots of values. George Washington had virtues.

Values are an equal-opportunity business. They are mere choices. In contrast, virtues are habits, difficult to develop and therefore not accessible to all.

Therefore, speaking of virtues rather than values is elitist, offensive to democracy's egalitarian, leveling ethos, which I say is precisely why talk of virtues should be revived and talk of values should be abandoned.

The purpose of American higher education is not to serve as a values cafeteria where young people are encouraged to pick whichever strikes their fancy.

Rather, the purpose of higher education for citizens of a democracy should be to help them identify excellence in its various realms and to understand what virtues make it so.

George Will
2000 Commencement Address
Lafayette College

SCIENTIFIC LITERACY

SCIENCE LITERACY

“They don't understand the music but
they like the noise it makes”

Thomas Beecham

COMMUNICATING CHEMISTRY

Formal

classroom

journals

books

professional meetings

Informal

radio

TV

the Web

print media

schools

shopping malls

museums and science centers

political conventions

State government

Halls of Congress

NATIONAL CHEMISTRY WEEK

PRIVILEGE:

**A SPECIAL ADVANTAGE
OR IMMUNITY
OR RIGHT
OR BENEFIT
NOT ENJOYED BY ALL**

Good Teachers are:

Competent in their disciplines

Committed to their disciplines and to the
profession of teaching

Comfortable with the methods and techniques
they use

Compassionate with students (and colleagues)

DESIRABLE OUTCOME

EXPECTATIONS

STRATEGIES

ATTRIBUTES

ACHIEVEMENTS

CONSEQUENCES

ENCOURAGEMENT

REWARDS

OTHER

problem-solving skills

***GOOD* judgement**

Effective Use of Technology

LEARNER'S PERSPECTIVE

Rewards of Teaching

**DESIRABLE QUALIFICATIONS OF
FACULTY MEMBERS**

THE FIRST IS INTEGRITY OF CHARACTER

THE SECOND IS SCHOLARSHIP

**BOTH MUST BE PRESENT IF THE FACULTY
MEMBER IS TO BE USEFUL TO THE
UNIVERSITY. OTHER QUALITIES WILL
ENHANCE THAT USEFULNESS.**

Mark H. Ingraham

Dean of the College of Letters and Science, 1949

Faculty owe it to themselves to teach what they love. In so doing, they nourish their students. They owe it to themselves to show their students who they are. To do this, they need to know what they love, and who they are — not a simple task, but surely the anchor without which they'll drift.

Diane Chapman Walsh, President of Wellesley College

Great professors are the ones who weave webs of life-affirming connection for their students. Proficiency with technology, tightly framed learning outcomes, even multicultural awareness are secondary to the passion professors bring to their subject matter, the compassion, awe, and joy they embody and communicate. Great teaching comes from spirit, not from technique.

Diane Chapman Walsh, President of Wellesley College