

# Expanding Students' Understanding of Civic Issues

## Integrating the Sciences with Other Disciplines

Steve Bachofer - *Saint Mary's College of California Professor and Chair of Chemistry*

Monica Devanas - *Rutgers University Director of Faculty Development and Assessment Programs*

Edward J. Katz - *UNCA Dean of University Programs*

Keith E. Krumpe - *UNCA Professor and Chair of Chemistry*

# UNCA Introductory Colloquia

- Taken by all first-year and transfer students\*
- Generally carry departmental prefixes
  - *CHEM 179 - Chemical Weapons, WMDs, and Terrorism*
  - *HON 179 - Resistance is Futile: Technology, Culture, and the Myth of Progress*
  - *ATMS 379 - Mountain Weather*
  - *PHYS 379 - Failure is Not an Option: The Early Years of NASA and the Apollo Program to the Moon*
- Takes place in a topical context
  - Instructors integrate information and intellectual approaches from different disciplines, directly addressing the nature of liberal studies
- Introduces students to education in a liberal arts environment
- Assists students in making the transition to college by fulfilling many of the functions of a traditional FYE course, but with a more robust academic content

# UNCA Introductory Colloquia

- LSIC 179s are writing intensive
  - Writing is a means of learning
  - Writing is an iterative process
  - Writing is done in context
  - Writing is not done alone
- LSIC 379s are writing and information literacy intensive
  - Introduced to Ramsey Library and Library Consortium
  - Find, evaluate, cite, and use information presented in diverse and discipline specific formats
  - Integrate information into research and other intellectual products
  - Address issues of copyright, intellectual property and the ethical use of information
- Peer Mentors assist with the delivery of the course
  - Junior- or Senior-level student attends class every day
  - Build community among the students
  - Facilitate out-of-class activities
  - Serve as a peer advisor

# UNCA Introductory Colloquia

- Common Goals
  - Introduce students to education in a liberal arts environment
    - Integrating information and intellectual approaches from different disciplines
    - Directly addressing the nature of liberal arts by being multidisciplinary or interdisciplinary in their approach to the topics
    - Emphasizing the responsibilities of a liberally educated person
    - Promoting understanding about the campus community
    - Utilizing active learning opportunities
  - Assist students in making the transition to UNCA
    - Provide opportunities to become an active member of the campus community
    - Foster the development of personal responsibility for choices and goals
    - Facilitate the learning of campus resources
    - Colloquium faculty serve as academic advisors

# UNCA Introductory Colloquia

- Common Learning Outcomes
  - Ability to clearly articulate in writing their ideas about course content
  - Ability to clearly articulate in class discussion their ideas about course content
  - Understanding of how a liberal arts education differs from other approaches
- Program Outcomes
  - Achieve the common goals and learning outcomes across all courses
  - Improve retention from 1st semester to 2nd semester
  - Improve retention from the Freshman to Sophomore year
  - Improve student satisfaction on the UNC System Sophomore Survey along the following dimensions:
    - Choosing the same college again
    - Advising
    - Accurate degree information
    - Knowledge of campus policies
    - Leadership opportunities

# HON 179: Resistance is Futile: Technology, Culture, and the Myth of Progress

- Content Areas:
  - Liberal arts and its approach to inquiry
  - Nature and ideology of technology
  - Technology and the scientific revolution
  - Technology and the idea of progress
  - Technology, society, and culture
  - Analyzing technologies:
    - Medical technology
    - Computer technology
    - Birth control technology
  - Science and Scientism
  - Technology and social engineering
  - Specific Issues:
    - Technology, terrorism, and civil liberties
    - Technology and bioethics
    - The idea of the robot and the problem of our human nature

# HON 179: Resistance is Futile: Technology, Culture, and the Myth of Progress

- Disciplines:

History of Science

Environmental Studies

Biology and Medical Technology

Robotics and Computer Technology

Artificial Intelligence

History

Literature

Political Science

Gender and Ethnic Studies

Sociology

Cultural Studies

Film Studies

- Texts:

- Nonfiction, longer work

- Postman, Neil. *Technology: The Surrender of Culture to Technology*. New York: Vintage, 1993

- Nonfiction, essays

- Teich, Albert H. *Technology and the Future*. 10th ed. Belmont, CA: Thomson Wadsworth, 2006.

- Novel

- Dick, Philip K. *Do Androids Dream of Electric Sheep?* New York: Del Rey, 1996

# HON 179: Resistance is Futile: Technology, Culture, and the Myth of Progress

- Films:
  - *Star Trek: First Contact*
  - *Brazil*
  - *Blade Runner*
- Web-based Material:
  - MIT Kismet Website  
<http://www.ai.mit.edu/projects/humanoid-robotics-group/kismet/>
- Assignments:
  - Reading quizzes
  - Short essays, including analysis of essays, novels, films (3)
  - Longer, interdisciplinary research essay (1)
  - Group peer-editing (3)
  - Research colloquium group presentations (1)

# CHEM 179: Chemical Weapons, WMDs, and Terrorism



- Content Areas:
  - Liberal arts and its approach to inquiry
  - Class distinctions and their impacts (common reading - *Class Matters*)
  - Defining Weapons of Mass Destruction (WMD)
  - History of different WMDs and delivery systems
  - Differences/similarities between chemical, biological, and nuclear weapons
  - Human A&P - exposure, dose, toxicity, and effects of WMD
  - Chemistry, and physics of WMDs
  - Psychological impact of WMDs
  - Proliferation and arms control
  - Defining terrorism and understanding its origins
  - The internationalization of terrorism
  - Religion and terrorism
  - Suicide Terrorism
  - Media - old v. new - the shaping of public and global opinion
  - Modern terrorist mind-set: tactics, targets, tradecraft, and technologies

# CHEM 179: Chemical Weapons, WMDs, and Terrorism



- Disciplines:

Chemistry

Anatomy and Physiology

Nuclear Physics

History

Toxicology and Medicine

Political Science

Psychology

Religion and Philosophy

Military Science

Sociology

Economics

- Texts:

- Langford, R. Everett. *Introduction to Weapons of Mass Destruction: Radiological, Chemical, and Biological*. Hoboken, New Jersey: Wiley, 2004
- Hoffman, Bruce. *Inside Terrorism*. New York: Columbia University Press, 2006
- Schell, Jonathan. *Fate of the Earth and The Abolition*. Stanford, CA: Stanford University Press, 2000
- Sagan, Scott D. and Waltz, Kenneth N. *The Spread of Nuclear Weapons - A Debate Renewed*. New York: W. W. Norton, 2003

# CHEM 179: Chemical Weapons, WMDs, and Terrorism



- Popular Films:

*The Sum of All Fears*

*The Rock*

*Patriot Games*

*V for Vendetta*

*Hunt for Red October*

*Syriana*

*Broken Arrow*

*Munich or Sword of Gideon*

- Documentaries

- *Avoiding Armageddon* (PBS)

- *Chemical and Biological Weapons* (HC)

- *Man, Moment, Machine - Saddam Hussein and the Nerve Gas Atrocity* (HC)

- *Insidious Killers: Chemical and Biological Weapons* (HC)

- *Terror Survival Guide* (HC)

- *Koppell: The Price of Security* (DC)

- *Thomas Friedman Reporting: Searching for the Roots of 9/11* (DC)

- *America's Atomic Bomb Tests - Operation Hardtack* (other)

- *Jihad in America* (other)

# CHEM 179: Chemical Weapons, WMDs, and Terrorism



- Print Media

- *New York Times*

- Human Resources

- Faculty Colleague - LTC (US Army Special Forces, retired)

- Local SBI Office

- Alumnus with Department of Homeland Security

- Assignments:

- Reading quizzes

- New York Times* Summaries/Commentaries

- Major quizzes

- Position Essays

- Examinations

- Film Essays

# Colloquium Program Benefits

- Faculty teach content outside their customary teaching load
- Non-scientists encouraged to teach science-related content
- Scientists encouraged to teach civic and social issues
- All faculty reinforce the importance of writing to learning
- Students see connections between the sciences and other disciplines
- Students see how science affects their daily lives
- Academic advisement is improved by faculty serving as advisors
- Improved retention from 1st to 2nd semester and freshmen to sophomore year