

LABORATORY AND FIELD EXPERIENCE**Laboratory equipment used frequently:**

- High pressure liquid chromatograph (HPLC) for analyzing metabolites of polycyclic aromatic hydrocarbons
- Spectrophotometers (various)
- Light microscope
- CO₂ infrared gas analyzer
- Scintillation counters
- Basic laboratory equipment including pH meters, balances, fraction collectors, autoclaves, incubators, and centrifuges

Techniques:

- Aseptic culture of bacteria and algae (liquid media, soft and hard agar)
- Preservation of cells by DMSO and freezing
- Enzyme purification and assays
- Thin layer chromatography
- Sephadex[®] column chromatography
- SDS gel electrophoresis
- Antibiotic testing (plating)
- Immunotyping, pyocin typing
- Fractionating whole tissues
- Ames mutagenesis assays on drinking water samples

Field work:

- Isolated soil bacteria as part of independent study
- Inspected eight field sites as part of a highway environmental impact statement
- Compiled species list of all non-woody plant on the proposed highway sites
- Characterized drainage patterns and evaluated potential physical and chemical impact of highway
- Wrote the botanical section of the impact statement
- Assisted with field and laboratory studies on Arctic tundra ponds (Pt. Barrow, Alaska), including monitoring the effects of an experimental oil spill

Other:

- Organized data on patients from a Veterans' Administration Hospital for *Pseudomonas aeruginosa* antibiotic sensitivity study (approximately one year)
- Calculation of bacterial growth curves
- Was responsible for the handling, storage, and disposal of carcinogenic, mutagenic and radioactive materials
- Ordering and maintaining supplies; coordinating multi-use work space
- Developing and keeping a laboratory manual of methods

DEGREE FROM THE UNIVERSITY OF CINCINNATI (UC)

During my sophomore year at UC, I was invited to develop the curriculum for an independent major in a newly evolving field: environmental science. I developed my

program and it was approved by a committee convened as part of the McMicken College of Arts and Sciences Honors Program at the University of Cincinnati. I worked with two faculty advisors in the Biology Department. (Transcript is available).

As part of my degree, I presented seven different one hour seminars (including one on ecological succession), as well as pursuing independent study in microbiology. I attended 12 hours of honors colloquia on a variety of scientific subjects.

Courses taken in pursuit of a Bachelor of Science granted by UC:

College of Engineering

Bio-Mechanics and Bio-Engineering Analysis
Environmental Chemistry

McMicken College of Arts & Sciences

Biology Honors Colloquium
Bio-Organic Chemistry
Calculus
Chemical Carcinogenesis (Graduate Level)
Ecology Seminar (Graduate Level)
Human Ecology
Hydrogeology
Independent Study in Geology
Introduction to Biology
Introduction to Biology Laboratory
Introduction to Chemistry
Introduction to Geochemistry
Introduction to Geology (Honors)
Limnology
Mathematical Ecology
Principles of Systematics (Botany)
Resources Conservation (Geology)
Special Problems in Biology (Microbiology)
Special Problems in Cell Biology
Special Problems in Toxicology (Graduate Level)
Urban Ecology