



**YOUNGSTOWN STATE UNIVERSITY
DEPARTMENT OF CHEMISTRY**

**NATIONAL SCIENCE FOUNDATION
RESEARCH EXPERIENCES FOR
UNDERGRADUATES (REU)
SUMMER FELLOWSHIP APPLICATION**



MAJOR INSTRUMENTATION

X-Ray Diffractometers: Siemens Model P4, X1000 Area Detector; Siemens Model P4, Scintillation Detector; Bruker-Nonius APEX Single Crystal; Bruker-Nonius D8 Powder

Transmission Electron Microscope - Siemens Model 102

NMR Spectrometers: Varian 400 MHz Multinuclear Gemini FT-NMR with Sun Workstations; IBM NR/80; Anasazi $^1\text{H}/^{13}\text{C}$ 60 MHz

FT-IR Spectrometers: BioRad FT-IR Model FTS 40; IBM Model IR-32; Perkin-Elmer Model 1600

ICP- Atomic Emission Spectrometer - ARL Model 3410 Inductively Coupled Plasma

AA Spectrometers: Allied Analytical - Graphite Furnace; Thermo Jarrel Ash - Flame

Diode Array Spectrophotometers (4) – Hewlett Packard 8452A UV/VIS

Scanning Spectrometer - Shimadzu Model UV260 UV/VIS

Scanning Spectrofluorometer - Shimadzu Model RF5000U

Mass spectrometers: Finnigan GCQ GC / ion-trap mass spectrometer; Bruker Esquire LC/MS, with remote access capabilities; Micromass Isotope Ratio MS (arriving summer 2003)

Gas Chromatographs: Varian GC, dual Electron Capture Detection and Computerized Acquisition; HP 5890 Series II GC, Flame Ionization Detector and Integrator; IBM GC/9630 GC, Pulsed Thermal Conductivity Detection

HPLCs: Beckman Model 338 HPLC System, UV/VIS Diode Array Detection and System Gold Data Acquisition; Beckman Model 338 HPLC System, UV/VIS Detection and System Gold Data Acquisition; Waters Alliance HPLC system and 2 Waters Breeze HPLC systems, UV/VIS and Fluorescence Detection; Varian Star Model 9010 with Variable Wavelength UV/VIS

Ultracentrifuge - Beckman Model L-8

Potentiostats; EG&G PAR Model 273 Digital with Computer Interface; Bioanalytical Systems Models CV-27 and 100B

Equipment for Biochemistry Research: Pharmacia FPLC, BioRad EconoSystem, Gel Electrophoresis Units and Photodocumentation System, Sorvall Refrigerated Centrifuge, Microbial Culture Incubators/Shakers, Bioorganic Synthesis

Student Computer Laboratories: Pentium II-233 with Windows-95 and Windows NT