### CENTER OF EXCELLENCE IN BIOTECHNOLOGY

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**Date of Report:** 88/12/9

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**Abstract:**

Equipment was purchased for research service facilities of the Biotechnology Program. These facilities are used by laboratories at Cornell, other educational institutions, industry and other research institutes. Facilities of the Program include: amino acid analysis/peptide sequencing and synthesis/oligonucleotide synthesis; flow cytometry and video microscopy; plant tissue culture/plant transformation; fermentation; computer/molecular graphics; electron microscopy; and cell hybridization/monoclonal antibody. Users are assured of rapid, efficient service with reliable results, at a nominal cost and without duplication of personnel and equipment.

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- **Project No.:** [Project Number]
- **Task No.:** [Task Number]
- **Work Unit Accession No.:** [Work Unit Accession Number]

**COSATI Codes:**

- **Equipment**

- **Supplementary Notation:** The view, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated in other documentation.

- **Responsibility:** Richard E. McCarty

**Distribution/Availability of Abstract:** Unclassified

**Security Classification of this Page:** Unclassified
CENTER OF EXCELLENCE IN BIOTECHNOLOGY

FINAL REPORT
prepared by
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Director, Biotechnology Program

9 December 1988

U. S. Army Research Office

Project No. P-24630-LS-UIE
Grant No. DAAL03-86-G-0203

Cornell University
Ithaca, New York 14853

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The intent of this equipment grant was to help establish the Biotechnology Program service facilities. The equipment is on order for or is currently being used in the following facilities: Amino Acid Analysis/Peptide Sequencing and Synthesis/Oligonucleotide Synthesis; Flow Cytometry and Video Microscopy; Plant Tissue Culture/Plant Transformation; Fermentation; Computer/Molecular Graphics; Electron Microscopy; and Cell Hybridization/Monoclonal Antibody. At the present time the oligonucleotide, amino acid, peptide sequencing facility is still operating out of space in S.T. Olin Laboratory and the electron microscope facility is operating out of Wing Hall, both on Cornell Campus. During January-February 1989, these facilities will move to space designed for them in the new biotechnology building. As soon as the fermenter is received from the manufacturer it will be placed in designed space in the new building. The facilities for flow cytometry and video microscopy are already in operation in the building and the monoclonal facility is in the process of being moved. By the end of March 1989, all facilities will again be in full operation in the new building.

These facilities are used by numerous research laboratories across the Cornell University campus, both Ithaca and Geneva. In addition, other educational institutions (for example, University of Michigan, University of Wisconsin, University of Rochester, Rockefeller University); industries (Miller Brewing, General Foods, Texaco) and research institutes like the Guthrie Clinic, Pennsylvania, make routine use of the services provided. The facilities are staffed with highly skilled technicians provided by the Biotechnology Program. User fees are charged for expendable supplies and maintenance of equipment. Researchers are assured of rapid, efficient service with reliable results, at a nominal cost and without duplication of personnel and equipment.

The following list of equipment purchased under this grant is grouped according to the facility served. General equipment is that placed in a central equipment room and is used by all facilities as needed.

**GENERAL EQUIPMENT**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Supplier</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultracentrifuge, Model L8</td>
<td>Beckman Instruments</td>
<td>$26,228</td>
</tr>
<tr>
<td>Centrifuge, Model J2-21M</td>
<td>Beckman Instruments</td>
<td>$13,104</td>
</tr>
<tr>
<td>Rotors: 70Ti, SW28, TI14, JA20, JA14, JA10, &amp; Accessories</td>
<td>Beckman Instruments</td>
<td>$29,422</td>
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<tr>
<td>Liquid Scintillation Counter</td>
<td>Beckman Instruments</td>
<td>$15,531</td>
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<td>Sample Changer</td>
<td>Beckman Instruments</td>
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<tr>
<td>Revco -80 Freezer</td>
<td>Baxter Scientific</td>
<td>$4,401</td>
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</table>

**P3 FACILITY**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Supplier</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centrifuge, J2-21M</td>
<td>Beckman Instruments</td>
<td>$13,104</td>
</tr>
</tbody>
</table>
**FERMENTER**
- Fermenter IF-75 with celligen mammalian cell culture system: New Brunswick $106,695
- Compressor: Tri-Line $ 2,538
- Motorized french press: SLM Aminco $ 8,786

**VIDEO MICROSCOPY**
- Fluorescence Imaging System, Video camera & accessories: Tracor Northern $126,537

**FLOW CYTOMETRY**
- Spectrofluorometer: SLM Instruments $ 43,113
- IBM PS2 Model 30 Computer: Cornell Computing Serv $ 1,994
- Analyzer, Epics 753 Cell Sorter, Profile Lens Assembly, & Software: Epics Division, Coulter $251,995
- Microvax II Computer: Digital Equipment $ 54,807

**COMPUTER**
- Microvax II Computer: Digital Equipment $ 50,890
- Plotter & Stand HP7550: Hewlett-Packard $ 2,827
- Printer & Stand (Laserwriter): Hewlett-Packard/Cornell $ 3,545

**MONOCLONAL ANTIBODY**
- Centrifuge, J6-M: Beckman Instruments $ 12,342
- Rotor, JS-4.2: Beckman Instruments $ 3,042
- Revco -80 Freezer: Baxter Scientific $ 4,108
- Incubators, Forma (2): Eastern Scientific $ 11,190
- Laminar Flow Hood, Baker (3): Harvey Instruments $ 13,809
- Microfuge, Eppendorf: Baxter Scientific $ 1,315

**OLIGONUCLEOTIDE, PROTEIN SEQUENCING, AMINO ACID**
- Amino Acid Analyzer: Applied Biosystems $ 31,090
- Speed Vac Concentrator: Savant Instruments $ 4,187
- Fraction Collector: ISCO $ 1,327
- Recorder, Series 5000: Fisher Scientific $ 1,868
- Peptide Synthesizer: Waters $ 75,075
- MilliQ Water System: Millipore Water $ 2,332
- Microfuge, Eppendorf: Baxter Scientific $ 1,314
- Spectrophotometer Plus C: Hewlett-Packard $ 10,438
- Phase system Electrophoresis: Pharmacia LKB $ 6,758
<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Supplier</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum Coating System</td>
<td>Balzers</td>
<td>$24,999</td>
</tr>
<tr>
<td>Critical Point Drying Apparatus</td>
<td>Philips Electronic</td>
<td>$12,905</td>
</tr>
<tr>
<td>Pumping System Upgrade &amp; Grid Holder</td>
<td>Tousimis Res Corp</td>
<td>$12,905</td>
</tr>
<tr>
<td>Freeze Etch, Cryo Apparatus</td>
<td>Balzers</td>
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<tr>
<td>Leitz Diaplan Microscope</td>
<td>Upstate Technologies</td>
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</tr>
</tbody>
</table>

**TOTAL ARO EQUIPMENT** $1,000,000

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