MEMORANDUM

TO: Patrick W. Flanagan, Dean
    College of Natural Sciences

FROM: Rodney Sakaguchi

SUBJECT: REORGANIZATION OF THE DEPARTMENT OF CHEMISTRY

December 10, 1990

We have reviewed the reorganization of the Department of Chemistry which you approved under delegated authority on November 29, 1990. This reorganization consolidates the existing Instrument Services and Computer Services units into one Instrument/Computer Services unit. The reorganization proposal states that as a result of this reorganization, four positions are proposed for reclassification. Therefore, a potential annual increase in costs of approximately $13,224, based on FY 91 salaries, may be experienced.

Ms. Carol Karimoto of your staff has informed us that this increase in costs could be accommodated under existing funding for the present time. However, if an opportunity to increase the current services base arose in the future, additional funding would then be requested.

Under present policy for the approval of reorganizations, an increase in the current services funding level which is a direct result of reorganization, would constitute an increase in costs to the University. As such, any reorganizations in this category will require approval by the Board of Regents. Should the College of Natural Sciences decide to fund the potential additional costs without seeking any increase in the current services funding level, your approval of this reorganization would be in conformance with current policy.

We would appreciate receiving a written clarification as to how the potential additional costs will be funded. I will be glad to discuss this matter further with you, should you have any questions.
ORGANIZATIONAL AND FUNCTIONAL CHANGES
UNIVERSITY OF HAWAI'I AT MANOA
COLLEGE OF NATURAL SCIENCES
DEPARTMENT OF CHEMISTRY

1. Currently, instrument services and computer services are separate boxes on the chemistry department organization chart. Instrument services is responsible for repair, maintenance, design and modification or construction of scientific instruments for research and instructional use. Computer services supervises the operation and maintenance of the department's central computer facilities, and assists in the design and fabrication or modification of new and existing equipment to be interfaced to the computers.

2. a) The proposed reorganization will combine instrument services and computer services in a single box called Instrument/Computer Services. The Electronics Engineer, position #80069, will serve as supervisor of the other three employees.

b) The proposed reorganization also deletes the faculty supervisor from Analytical Services. This faculty member is replaced by one of the UH NMR/Mass Spectrometer Technicians, position #80362.

3. The proposed reorganization is required because of the changes in instrument complexity, design and computer interfacing that have occurred over the past 6-8 years.

4. a) The three NMR Spectrometers and the mass spectrometer in Analytical Services are some of the most complicated general use instruments used in scientific research today. No longer can Analytical Services operate with a part-time faculty manager. It is essential that a full-time manager with extensive theoretical and practical experience in charge. There now exist hundreds of different procedures capable of obtaining different types of information. The manager determines which is best suited for each particular problem, the manager trains and advises the other Analytical Services staff, and the manager learns and/or develops new instrument capabilities and techniques.

b) The present organization of Instrument Services and Computer Services was established to deal with a situation where instruments and computers were separate. Most instruments operated without computer interfaces, and the few that were interfaced sent data to a central computer for processing. This is no longer the case. Almost all major instruments in this department now have computers as integral components. These built-in computers control the operation of each instrument as well as collect and process data. The central computer has been replaced by a network of machines which provide both in-house computational services and connectivity to specialized remote computing services.
This progressive evolution to more complex, sophisticated, computerized instruments has caused a major change in the way we operate, repair, maintain, design and modify or fabricate them. No longer do the instrument technicians and computer specialists work independently. They must work together to solve problems.

5. The proposed reorganization will formalize what is in fact being done in the chemistry department. We are separately requesting that one of the NMR Spectrometer Technician (pos. #80362) be reclassified to Analytical Services Manager (new class), the Electronics Engineer I be reclassified to Electronics Engineer II, the Research Associate V be reclassified to Electronic Engineer I, and the Electronics Technician II be reclassified to Scientific Instrument Engineer (new class). The last three employees, and the Scientific Instrument Technician, will make up a unit to be called Instrument/Computer Services. This unit, consisting of highly qualified professionals, will be supervised by the Electronics Engineer, position #80069.

The increase in costs will result solely from the reclassifications of the four employees described above. We estimate the annual increase, based on FY 91 salaries, of $13,224 total.

6. No effect on the classification of other employees is anticipated because of this reorganization. The Research Associate V will no longer supervise the instrument and electronics technicians. However increases in the scope, complexity and responsibilities of his job due to new instrumentation more than compensate for the change in supervision. We are requesting reclassification of his position to Electronic Engineer I to reflect these changes.

7. No viable alternatives to reorganization appear feasible. The operation of the department has changed; the current organization no longer describes the computer and instrument services. This request is submitted to rectify this situation.
Chairman

Directs activities, curricula and personnel in the Department of Chemistry.

- Coordinates instructional activities; makes teaching assignments; schedules classes.
- Prepares unit's budget requests.
- Reviews and makes recommendations in regard to all personnel actions involving members of the department.
- Assigns duties to service staff of 9 APT's.
- Supervises secretarial staff of 3.
- Produces large numbers of memos required to conduct routine operations.
- Teaches half-time.
- Conducts research in chemistry.
- Provides information to other units of the University, State, Federal agencies, and the general public.

Associate Chairman

- Assists Chairman in all aspects of departmental operation.
- Supervises service staff of 8 APT's.
- Teaches.
- Conducts research in chemistry.

Instructional Activities

- Provides instruction at the undergraduate and graduate levels in both lecture and laboratory settings.
- Conducts research and seeks extramural funding for same.
- Supervises graduate student M.S. and Ph.D. laboratory research.
- Advises students with academic problems related to chemistry.
- Provides service to the University community.

Chemical Supplies Clerk

- Maintains the centralized Cardineer inventory control file of all chemical supplies and laboratory equipment and apparatus in the department.
- Maintains all files on requisitions, purchase orders and invoices for chemicals and laboratory equipment and apparatus.
- Maintains catalogs of mainland chemical supply houses.
- Maintains an inventory of all office and laboratory equipment in the chemistry building.
- Maintains a control of laboratory apparatus lent to private industry.
- Supervises the work of part-time student assistants.
- Handles the general office traffic of telephone calls, answering inquiries, etc. and in other ways assists the Administrative Officer.

Secretarial Services

Secretary

- Assists and relieves Chairman in the performance of his work.
- Informs all department members of pertinent information from Deans, Chancellor, Payroll Office, etc.
- Devises ways of making department office run smoothly.
- Serves as liaison between Chairman and stenos.
- Establishes and maintains departmental files.
- Manages details involved in yearly employment of graduate assistants, postdoctoral fellows, etc.
- Handles details of summer research overload for ca. 40 staff and graduate students.
- Handles late registration.
- Supervises student help.

Clerk-Stenographers

- Type exams, correspondence, memoranda and complex technical matter for faculty.
- Receive messages, personal callers, etc. for faculty.
- Sort and distribute mail for entire building.
- Handle book orders for all chemistry courses.
- Maintain room schedules for departmental classrooms and instructional laboratories.
- Help with late registration.
Storeroom Services

Procurement and Property Specialist

- Procures, stocks and dispenses standard chemical, supply and equipment items.
- Provides assistance in procurement efforts of departmental personnel.
- Screens requests for present availability of stocks.
- Receives and distributes all departmental purchases.
- Monitors usage and maintains records for appropriate revisions of stocks.
- Administers required inventory procedures.
- Processes departmental and University service and work requests.
- Operates Instructional and Research stockroom facilities.
- Supervises civil service staff of 2 clerks and student helpers as assigned.

Chemical Stores Clerks

- Receive, unpack, and store chemicals and laboratory apparatus and equipment.
- Assist in maintaining special equipment such as electric furnaces, optical equipment and electronic instruments.
- Stock various chemical laboratories used by students with chemicals and laboratory apparatus and equipment such as sulphuric acid, hydrochloric acid, sodium hydroxide, and beakers and test tubes.
- Prepare qualitative and quantitative chemical solutions.
- Issue chemicals and equipment from storeroom.
- Record the number, kind and quantity of stock and equipment used.
- Maintain files of supplies and equipment in storeroom.

Analytical Services

UH Analytical Services Manager

- Supervises all facets of Nuclear Magnetic Resonance and Mass Spectroscopy, including personnel assigned to Analytical Services
- Maintains, calibrates, repairs and installs all NMR Spectrometers in the Chemistry Department.
- Performs system administration on the NMR Workstation Network, including managing accounts, updating software, and programming new utilities.
- Designs and constructs new accessories for the NMR and Mass Spectrometers.
- Keeps the NMR and NMR Spectrometers current in state-of-the-art techniques as they become available.
- Operates the NMR and Mass Spectrometers when highly specialized techniques are required to obtain useful data.
Nuclear Magnetic Resonance/Mass Spectrometer Specialist

- Responsible for all facets of Nuclear Magnetic Resonance and Mass Spectroscopy.
- Has primary responsibility for operating and maintaining Mass spectrometer.
- Stocks parts, accessories and special supplies and chemicals needed for particular applications.
- Consults with faculty and research personnel on technical applications.
- Provides spectra and interpretive assistance as required.
- Keeps expenditure, usage and maintenance records for cost determination.
- Schedules and performs routine maintenance
- Diagnoses and repairs malfunctions, or procures technical services for major problems.
- Determines needs, performs overhaul or modification of instruments as required.

Research Associate IV

- Has primary responsibility for operating and maintaining mass spectrometers.
- Consults with faculty and research personnel on technical applications.
- Provides mass spectra and interpretive assistance as required.
- Schedules and performs routine maintenance.
- Diagnoses and repairs malfunctions, or procures technical service if needed.
- Operates and performs routine adjustments for nuclear magnetic resonance spectrometers as required.
Instrument/Computer Services

Electronics Engineer II

- Design and supervise construction of analog and digital devices not available commercially.
- Plan and manage the development and evolution of department's computer systems and computer network.
- Design and implement changes to improve the reliability of high failure-rate systems.
- Design and supervise the implementation of program systems to convert departmental computing as new computer technology becomes available.
- Design and implement the chemistry department local area network (LAN) system.
- Train and approve users of departmental computer systems.
- Supervise and coordinate services of the instrument shop, the machine shop, and the electronics shop.

Research Associate V, Scientific Instrument Specialist

- Primary responsibility for departmental instruments in fields of Gas Chromatography, UV-visible, Infrared and Atomic Absorption Spectroscopy, X-ray diffractometry, etc., as assigned by the Electronics Engineer II.
- Designs and develops hardware and software to interface instruments and computers.
- Schedules and performs maintenance and repair services.
- Arranges user schedules for departmental instruments.
- Consults with faculty and research personnel regarding instrument applications.
- Assists with specifications development and makes recommendations on instrument purchases.
- Maintains operating and service literature on instruments and stocks spare parts.
- Determines needs for components, accessories and operating supplies.
- Reviews and judges instrument modification requests.
- Initiates action for outside service if necessary.
- Supervises departmental instrument room facilities and determines appropriate policies.

Scientific Instrument Maker

- Responsible for precision machine shop facilities designed for the needs of the Chemistry Department.
- Provides design and engineering assistance to scientists in the development of precision instruments and tools.
- Evaluates projects from engineering point of view and makes cost estimates from designs.
- Fabricates and repairs precision tools, components and instrument from sketches, drawings or blueprints.
- Builds, assembles and helps develop prototype instrumentation.
- Performs all departmental machine shop work.
Electronics Technician

- Provides diagnostic and repair services for electronic and electrical equipment.
- Assists with circuitry design problems or designs and/or fabricates apparatus according to provided requirements, or performs modification work as necessary.
- Maintains stocks of commonly used parts and components and initiates procurement actions for replenishment.
- Operates and maintains electronic test equipment.
- Constructs amplifiers, temperature controls, measuring and recording devices, etc.
- Maintains and repairs electronic computers

Glassblowing Services

- Provides glassblowing services for the entire University system.
- Repairs or fabricate apparatus of existing design.
- Assists in design and modification of glass apparatus not commercially available.
### Office of the Dean

#### Department of Chemistry

#### Office of the Chairperson

- **Chairperson (appointed from instructional faculty)**
  - Secretary II, SR-12, #31484: 1.00
  - Clerk Steno, SR-09, #15364: 1.00
  - Clerk Steno, SR-09, #14356: 1.00
  - Account Clerk II, SR-OB, #05711: 1.00

#### Associate Chairperson (appointed from instructional faculty)

#### Instructional Activities

**Faculty Positions**

- **Full-time:** #32011, #32117, #32455, #32510, #32624, #32719, #32950, #33065, #33203, #33346, #34088, #34330, #34662, #34692, #34892, #41027, #41114, #43035, #43182, #44684, #44950, #53114

- **Part-time:** #838035 (1.40)

**Graduate Assistants**

- #85020, #85021, #85023, #85024, #85049, #85091, #85118, #85233, #85314, #88022, #88040, #88104, #88114, #88116, #88150, #88153, #88162, #88183, #88220, #88234, #88274, #88318, #88330, #88356, #88419, #88459, #88461, #88468, #88472, #88475, #88496, #88497, #88520, #88554, #88567, #88570, #88590, #88590

**Total:** 40.00

---

### Storeroom Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Employee</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM Proc &amp; Prop Sp II, PO5, #80086</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Chem Stores Clerk, SR-09, #13930, #80014</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Chemical Supplier Clerk, SR:10.68607</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Chemical Stores Clerk, SR-09, #80068</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Clerk Typist, SR-08 #80060</td>
<td>0.50</td>
<td></td>
</tr>
</tbody>
</table>

### Analytical Services

- **#**UM NMR Spectrometer Technician, P11, #80362: 1.00
- UM NMR Spectrometer Technician, P11, #80892: 1.00
- UM Research Associate, PO7, #80121: 1.00

### Instrument/Computer Services

- **UM Electronics Engineer I, P12, #80069**: 1.00
- **UM Research Assoc. V PO9, #80022**: 1.00
- UM Scien. Instrument Tech II, PO9, #80015: 1.00
- **UM Electronics Tech. II, PO9, #80743**: 1.00
- To be reclassified

### Glassblowing Services

- UM Scientific Glassblower, PO9, #80251: 1.00

---

*To be established and classified*