

The Kellogg Pharmaceutical Clinical Scientist Program: Nuts and Bolts

Albert I. Wertheimer

BACKGROUND

In 1975, the American Association of Colleges of Pharmacy Study Commission on Pharmacy presented its findings in a report entitled *Pharmacists for the Future*. In this report, the commission discussed in depth its examination of the state of pharmacy practice and the education of pharmacists. It set forth a number of proposals and recommendations that were seen by the commission as being of paramount importance both in establishing the role of pharmacy practice within the health care system and in preparing pharmacists to step into the various facets of this role.

The following excerpts from the report of the Study Commission on Pharmacy serve as an explanation of the stimulus for the development of the Kellogg Pharmaceutical Clinical Scientist Program at Minnesota.

To some observers, including the members of the Study Commission, the greatest concern regarding the nature of pharmacy arises from . . . unique circumstances [relating] to the discontinuities which exist between the generation of

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knowledge about drugs and the application of that knowledge in the clinical use of drugs. In nearly all other parts of the health care system there exists a functional inter-relationship among the components involved in the education of health professionals, the delivery of health services to patients, and the search for new knowledge. . . . This inter-relationship facilitates the broad and ready application of new knowledge and consequently is beneficial to the education of health professionals and to the delivery of health services. In contrast, important parts of pharmacy—particularly the search for new knowledge—lie outside this framework. Most new knowledge is developed in the research laboratories of the pharmaceutical manufacturers.

. . . In the view of the Study Commission the greatest contribution which a foundation or governmental agency could make to upgrade pharmacy education, and thereby improve drug services to the public, would be to fund a national program to train a modest number of clinical scientists for pharmacy . . . [giving] well-trained pharmacy practitioners the opportunity to acquire deeper scientific knowledge, the skill of rigorous research, and broadened understanding of the management and control of disease.

. . . The trends of the future seem clear. More pharmacists will practice in institutions; probably fewer will be individual entrepreneurs. All pharmacists, whatever their practice environment, will become more and more a part of the system not only of pharmacy but of health services as a whole. . . . As quality control becomes widespread pharmacists will . . . be asked to set standards of pharmacy services; they will be asked to monitor drug utilization; they may be asked to concern themselves with patients' compliance and experiences with adverse drug reactions. Pharmacists will be expected to play important roles both in improving primary care and in preventive medicine. . . . [I]f pharmacists are to participate actively in primary and preventive care, it will not be so much as dispensers of drugs but rather as dispensers of drug information

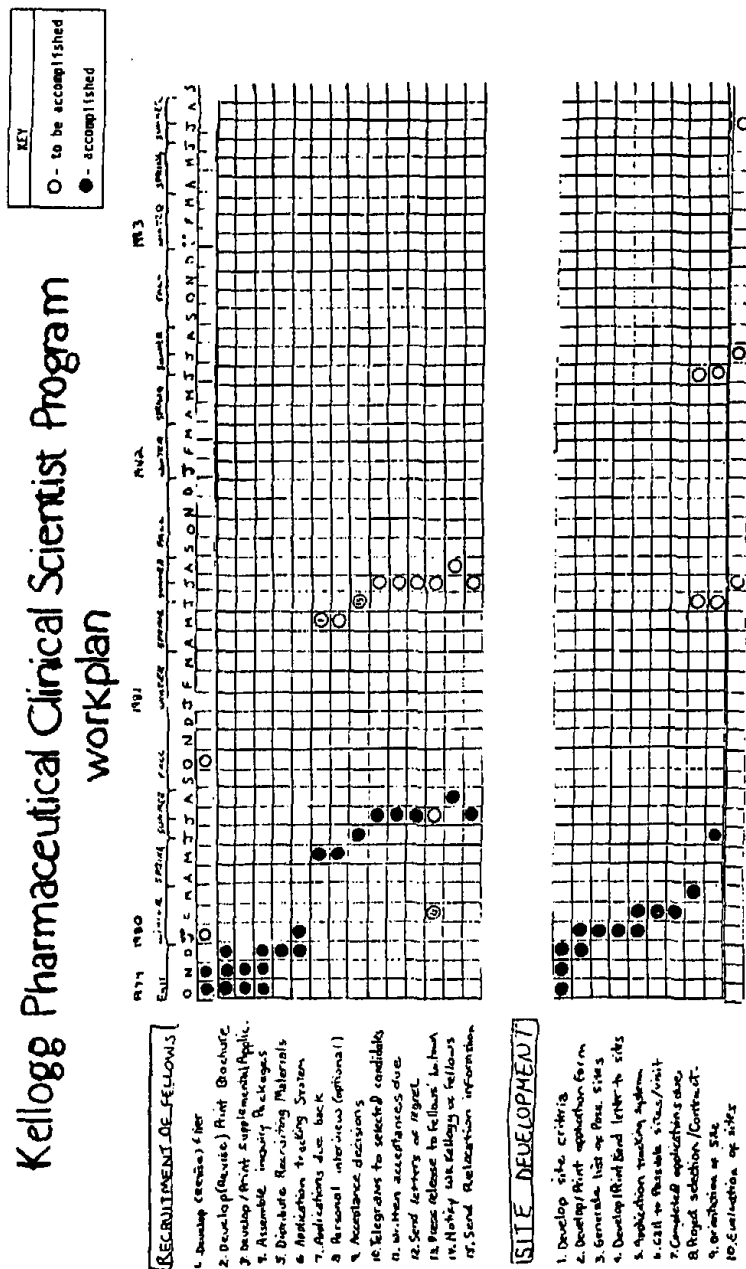
both to the individual and to the community. The skills required are those of communication and education; the knowledge required is that of drugs and their action in human behavior.

Most physicians admit their need for professional assistance in making decisions of all kinds about drugs but only a few believe that, at the present time, the assistance they require can be obtained from pharmacists. Perhaps the basic concern, therefore, is whether the profession of pharmacy can develop into a strong and effective third force to the end that optimal drug services will be acceptable to physicians and available to patients who require them. (1)

In 1930, breakfast cereal pioneer W. K. Kellogg contributed \$45 million in personal wealth to establish the Kellogg Foundation. Using income from that bequest, the foundation has made grants over the past 5 decades totaling \$500 million in the areas of health, education, and agriculture. Today the foundation is among the largest private philanthropic organizations in the nation and supports pilot programs on four continents, including North America, Europe, Latin America, and Australia. Believing that a pharmaceutical clinical scientist program would interest the foundation, the University of Minnesota contacted the Kellogg Foundation and solicited funds. Support was granted for the preparation of 15 pharmaceutical clinical scientists. A project schedule was developed to aid in design and execution of the program (Figure 1).

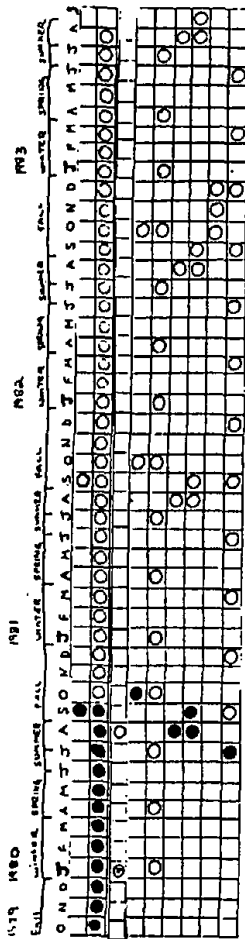
PROGRAMS OF STUDY

Kellogg Pharmaceutical Clinical Scientist Fellows were expected to pursue a course of study leading to the receipt of a Ph.D. in Social and Administrative Pharmacy within a span of 36 months. Fellows had individually customized courses of study planned for them following extensive discussions with their advisors. The anticipation at the outset of the Kellogg Program was that all fellows would first proceed through a series of required core courses where they would exercise personal inclinations by selecting one of two

Kellogg Pharmaceutical Clinical Scientist Program
workplan

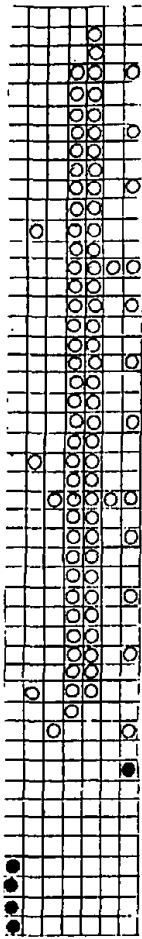
PROGRAM OPERATION

1. Core begins
2. Core group meetings
3. Core planning meeting(s)
4. Typical Advisory group etc.
5. Budget needs
6. Review workshop
7. Prep/Distribution Annual Rep
8. Placement development
9. Develop/Print Newsletter(s)



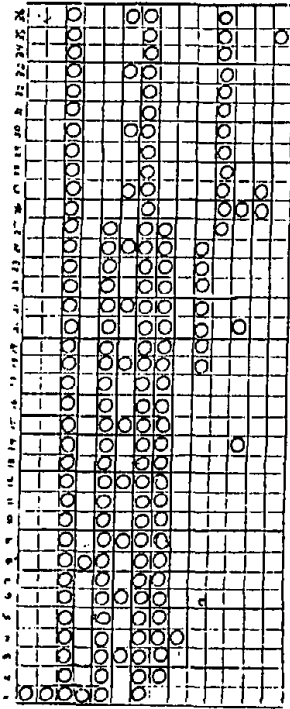
ACADEMIC PROGRAM

1. Develop curriculum tracks
2. Advisor identification
3. Design/Revise fellow invitation
4. Open Seminars(s)
5. Conduct Seminar(s)
6. Annual Eval of Program by Student
7. Advisor Group meeting



STUDENT PLAN

1. Motivation
2. Selection of Advisor
3. Advisor/ Fellow Agreement
4. Reader selection
5. Identify Study
6. Evaluation
7. Seminar
8. Independent Project(s)
9. Report/Submit Plan of Study
10. Research Presentation Show
11. Commence Thesis Research
12. Preliminary written Exams
13. Preliminary Oral Exam
14. Thesis Defense



tracks for specialized study. These two tracks, tailored to the individual's needs, were:

Track 1—Clinical Practice Administration

Track 2—Research in Clinical Practice

Core courses for both tracks included legislative control, covering the historical development and social and economic causes and consequences of drug and health legislation; pharmaceutical economics; drug marketing; social and behavioral aspects of pharmacy practice; research design, statistics, and data processing; medical sociology; and required monthly seminars and weekly departmental seminars throughout the duration of the fellow's studies.

Students pursuing programs in Track 1 studied—in addition to the core areas outlined above—accounting, industrial relations, finance, psychology of advertising, elements of public health, public health administration, health education, epidemiology, vital statistics, management, management information systems and human resources in health services organizations, long-term care administration, and other subject areas depending upon the needs and goals of the individual. Students in Track 2, in addition to the core areas outlined above, elected course work including program evaluation, advanced research methods, biostatistics, principles of measurement, behavior analysis, multivariate analysis, research planning, aging, and clinical trials.

Students were registered in the Graduate School of the University of Minnesota and were welcome to take courses through any and all departments of the university. It was the intention of the faculty and staff to make every effort to facilitate the progress of the Kellogg Fellows toward completion of all requirements for the Ph.D. in three years.

ORGANIZATION AND SCHEDULE

Figure 2 shows the organizational structure of the program. The students were expected to complete studies, as previously mentioned, within a 36-month stipend period. The program was struc-

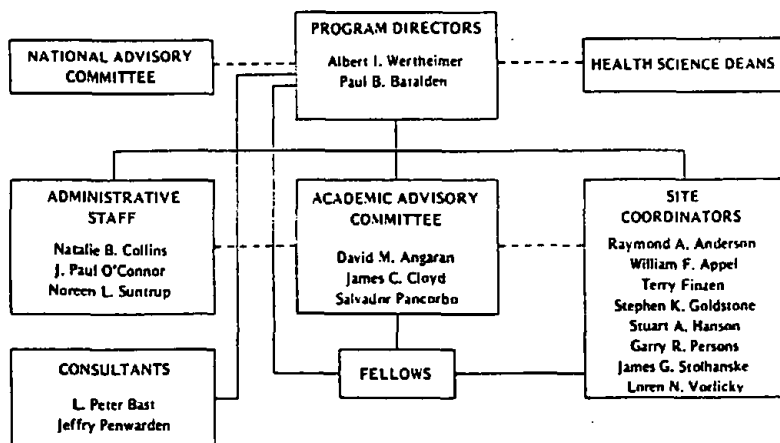


FIGURE 2. Program Organizational Structure

tured as seen in Figure 3. While it was possible for students to pursue their studies for periods longer than 36 months, the stipend offered to students was for a maximum period of 36 months.

RECRUITMENT

Recruitment was accomplished through advertisements and press releases sent to major organizations and schools of pharmacy, as well as to local societies and publishers of newsletters and periodicals. A fellowship opportunities poster was sent to these organizations with the request that it be posted in a visible place (Figure 4).

Applicants were asked to complete three forms. One of these was the standard University of Minnesota Graduate School admission form required of all students registered in the Graduate School. Another was the departmental supplementary application form (Figure 5). Applicants to the Pharmaceutical Clinical Scientist Program were required to complete a third form, which requested information on employment history; professional, service, or community-related activities; professional affiliations; and professional publica-

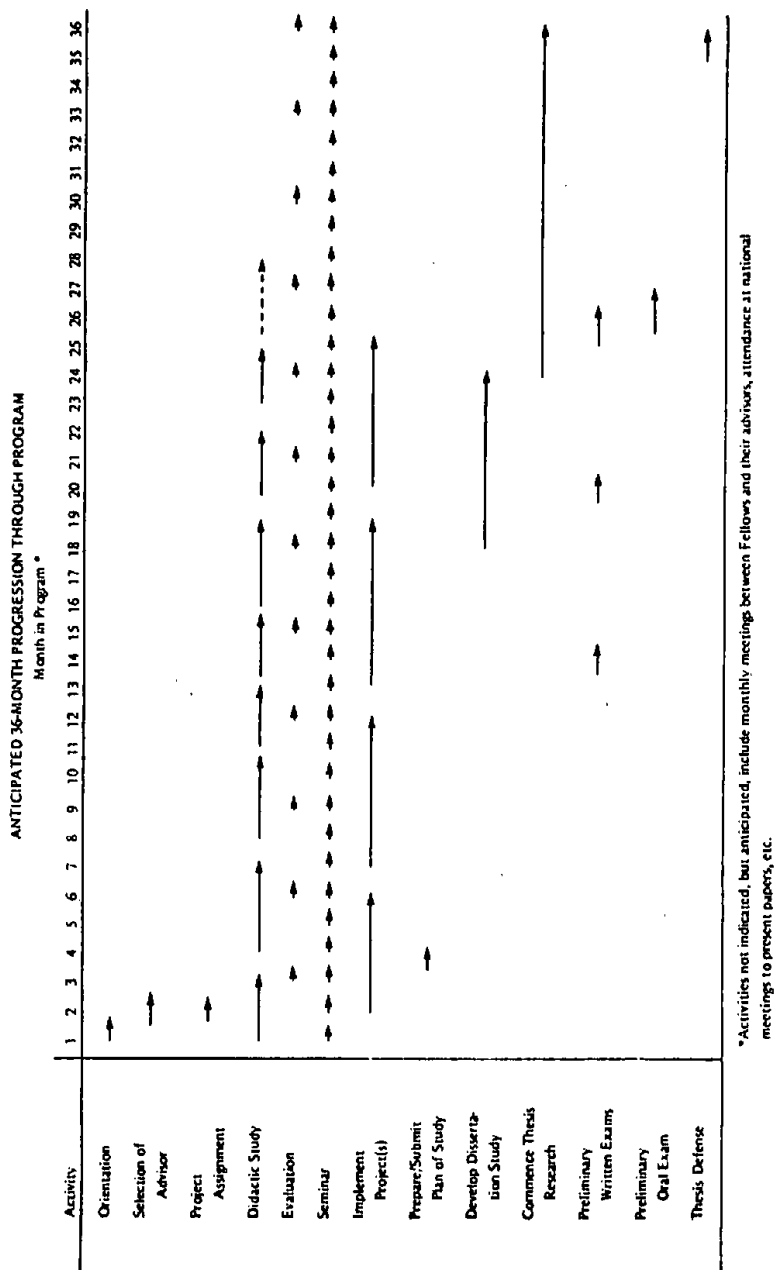


FIGURE 3. Student Schedule (36 mos.)

tions and presentations. It also asked the applicant to forward a writing sample. In addition to this information, candidates were given the following questions to answer:

- At this time, what areas of investigation do you believe would hold the most interest for you as a pharmaceutical clinical scientist?
- In what ways do you believe your professional experience to date will relate to your preparation and future performance as a pharmaceutical clinical scientist?
- What roles and needs for your services as a pharmaceutical clinical scientist do you envision in academic, health care delivery and/or research environments?
- Under what circumstances and by what methods have you most successfully exercised leadership?
- What do you believe have been your most important (a) personal and (b) professional accomplishments?
- Do you believe that your prior academic performance is representative of your abilities? If your answer is no, please explain.
- In your view, why should you be admitted to this program, and what strengths will you bring to it?

The special application form was the product of a great deal of research and study. The final version is our adaptation of the system used to screen applicants by the Markle Foundation Scholars Program, which was originally based upon the selection criteria used by the British Foreign Service.

When application forms were received, an applicant evaluation process was undertaken. The forms for this process are seen in Figures 6-12. Core staff were asked to evaluate the applicants and to employ this standardized scoring system so that comparable values would be available. Students who appeared to hold promise were scheduled for an interview. A typical interview began with breakfast with one of the project directors followed by a day of meetings with other program principals, hospital representatives, and Kellogg Fellows. The comments and evaluations of the interview were combined with the preliminary scores. The totaled results were

FIGURE 4. Fellowship Opportunities Poster

Kellogg Pharmaceutical Clinical Scientist Fellowship Opportunities

APPLICATIONS FROM QUALIFIED CANDIDATES ARE BEING SOUGHT FOR THE KELLOGG PHARMACEUTICAL CLINICAL SCIENTIST FELLOWSHIPS offered by the University of Minnesota in conjunction with the St. Louis Park Medical Center, Minneapolis, Minnesota.

**Entrance Dates and
Stipend:**

Fifteen fellowships will be awarded. Entrance dates will be March 31, 1980, Fall 1980 and Fall 1981. Each three-year fellowship carries a stipend of \$10,000 per year of study leading to a Ph.D. degree in Social and Administrative Pharmacy.

Background:

The Kellogg Fellowship Program, recently funded by the W.K. Kellogg Foundation, Battle Creek, Michigan, represents a revolutionary endeavor by an educational institution to fulfill a need identified by the 1975 Report of the Study Commission on Pharmacy (the Millis Commission). During their course of study, experienced practicing pharmacists will, in addition to University coursework, be provided with clerkship or residency experiences in clinical settings. Graduates are expected to become the major community resource for the application of pharmacy knowledge, to contribute significantly to the quality of drug-related services being provided in their communities, and to assume leadership roles in drug-related research.

Facilities:	Educational and research facilities available include the University of Minnesota Twin Cities Campus' vast Health Sciences Center and its bio-medical and university libraries housing extensive collections, 30 departmental libraries, the medical library at the Mayo Graduate School of Medicine in Rochester, Minnesota, and the University Computer Center. Fellows also will have access to facilities at the St. Louis Park Medical Center - a 120 physician multispecialty group practice, Methodist Hospital and the Hennepin County Medical Center in Minneapolis, and St. Paul Ramsey Medical Center.
Selection Criteria:	Criteria on which candidates will be judged include: a clinically-oriented pharmacy education; a minimum of two years clinical pharmacy practice experience (or relevant equivalent); professional licensure; superior prior academic performance; demonstrated leadership ability; and letters of recommendation.
Application Procedure:	Specific information concerning the above requirements, the program, and the formal application procedure may be obtained by writing to: Kellogg Pharmaceutical Clinical Scientist Program; Attn. Dr. Albert I. Wertheimer; College of Pharmacy; University of Minnesota; 128 Pleasant St. S.E.; Minneapolis, Minnesota 55455.
Deadline	Deadline for application for the fellowships to begin Spring Quarter is January 15, 1980. Final decisions on selection of fellows to enter during that quarter will be made by February 1, 1980.

FIGURE 5. Social and Administrative Pharmacy Departmental Application Form


 <p>UNIVERSITY OF MINNESOTA DEPARTMENT OF GRADUATE STUDIES IN SOCIAL AND ADMINISTRATIVE PHARMACY</p> <p>Supplementary Application Form</p>
<p>INSTRUCTIONS: Please complete this form and submit it directly to the Department of Graduate Studies in Social and Administrative Pharmacy, College of Pharmacy, 128 Pleasant Ave. S.E., Minneapolis, MN 55455. No applications will be considered until all materials requested by the Graduate School and the Department have been received.</p> <p>1. What do you hope to do professionally upon completion of your work (degree and/or courses) in Social Pharmacy at the University of Minnesota?</p> <p>2. Why did you select the Social Pharmacy program at the University of Minnesota as the program in which you would like to study?</p> <p>3. What do you feel graduate study in Social Pharmacy will do for you?</p>

FIGURE 5 (continued)

4. In what area or areas of Social Pharmacy research are you most interested?

5. What do you see as some of the major conflicts in pharmacy practice?

6. How can knowledge gained from the study of Social Pharmacy help to solve these problems?

7. In your view, why should you be admitted, and what strengths will you bring to the program?

Note: Please send this form directly to the Department rather than to the Graduate School.

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

Research

Possible Points	Actual Points
--------------------	------------------

1 point for each 10 weeks (quarter) of research
at 50% time

5 _____

Minimum acceptable: 0

Publications and Presentations

Possible Points	Actual Points
--------------------	------------------

Presentations:National or regional meeting (1 point each)
Inservice, lay seminar, etc. (0.5 pt. each)3 _____
2 _____Publications:Abstracts (1 point each)
Full paper (referreed journal)
(2 pts. each; 3 pts. if senior author)3 _____
no max _____

Total points possible: 10

Actual total points: _____

Minimum acceptable: 2

FIGURE 6. Applicant Evaluation Form

evaluated and decisions were made to offer invitations for the limited number of fellowship positions.

It should be pointed out that in the second and subsequent years an additional interview effort was undertaken in which the fellows who were already participating in the program were asked to evaluate the candidates who visited. Fellows were asked to rate the candidates in comparison to themselves and to decide whether the candidates would be of benefit to the program and to the fellows

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

<u>Education</u>	<u>Possible Points</u>	<u>Actual Points</u>
Clinical component of curriculum	3	_____

Total points possible: 3

Actual total points: _____

Minimum acceptable: 0

<u>Grades</u>	<u>Possible Points</u>	<u>Actual Points</u>
8GPA - 20	12	_____

Total points possible: 12

Actual total points: _____

Minimum acceptable: 4

FIGURE 7. Applicant Evaluation Form

personally. It was interesting to see how existing fellows evaluated potential comrades.

After the decisions were made using the criteria described above and outlined in the evaluation sheets, the selected applicants were sent telegrams extending fellowship offers. Applicants were asked to respond quickly so that those who intended to refuse a fellowship would not delay extension of an offer to another candidate.

FELLOW ACTIVITIES

During the actual study years, the major differences between the fellows and the other doctoral students were participation in the monthly seminars, enrollment in special recitation sections for stan-

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

<u>Clinical Experience</u>	<u>Possible Points</u>	<u>Actual Points</u>
A. Extent of Clinical Experience		
0.5 - 1.0 years	2	_____
1.0 - 3.0 years	3	
3.0 - 5.0 years	4	
more than 5.0 years	5	
B. Quality of Experience		
more than 50% clinical (non-distribution)	2	_____
20-50% clinical	1	
less than 20% clinical	0	

I. Possible points: 10

Actual points (AxB): _____

Training

Pharm.D. and Clinical Residency	5	_____
Pharm.D.-(Post BS) MS with Clinical Component	4	
Pharm.D. - 1st Degree	2	
BS	0	

II. Possible points: 5

Actual points: _____

Total points possible: 15

Actual total points: _____

Minimum acceptable: 5

FIGURE 8. Applicant Evaluation Form

FIGURE 9. Applicant Evaluation Form

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

<u>Clinical Skills</u>	<u>Possible Points</u>	<u>Actual Points</u>
Type of Practice (Source: application form, peers)	7	
A. Direct responsibility for drug therapy decisions		
1. Full-time (5 points)		
2. Part-time (4 points)		
B. Co-management of drug therapy (i.e. nursing home audits) (2 points)		
C. Consults on drug therapy (2 points)		
D. Provides patient education (2 points)		
Level of Practice (Source: peers - physicians and pharmacists)	6	
A. Knowledge of clinical pharmacology and therapeutics		
1. Demonstrates depth and breadth of knowledge (2 points)		
2. Demonstrates adequate knowledge (1 point)		
3. Demonstrates some weaknesses in knowledge (0 pts.)		
B. Capability of synthesizing solutions to therapeutic problems		
1. Able to develop logical and appropriate solutions (2 points)		
2. Able to develop solutions but requires assistance of others (1 point)		
3. Unable to generate solutions to therapeutic problems, tends to transfer to others (0 points)		
C. Ability to practice independently		
1. Able to practice independently (2 points)		
2. Requires minimal supervision (1 point)		
3. Unable to practice without supervision (0 points)		
Results of Practice (Source: application form)	2	
A. Publication of review articles (in area of expertise) (2 points)		
B. Publication of case reports (1 point)		

FIGURE 9 (continued)

	<u>Possible Points</u>	<u>Actual Points</u>
C. Development of drug protocols (1 point)		
D. Presentations on patient care related topics (In-services, professional meetings, etc.) (1 point)		
Total possible points: 15		
Actual total points: _____		
Minimum acceptable: 6		

dard courses (held especially for the fellows), and access to more clerical and secretarial assistance so that the fellows would be able to devote more attention to academic and scholarly pursuits. One of the key differences between the Kellogg Program and the conventional program was the incorporation of site programs. As part of their education, fellows were required to conduct projects at participating sites. These sites were practice institutions or locations where activities related to pharmaceutical service delivery took place. Sites were required:

1. To participate in the monthly Kellogg fellows seminar
2. To provide regular supervision for the fellow by a single person identified for each project
3. To briefly describe the opportunities available to the fellow at the site
4. To assist the fellow in preparation of project work plan
5. To provide the fellow access to data
6. To be willing to contract with fellow and directors for performance of project
7. To participate in KPCSP evaluation activities.

The advisors and leaders in local pharmacy organizations recommended potential sites where the students could conduct interesting and unconventional research projects combining administrative, behavioral, and clinical practice experiences. The letter in Figure 13 is

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

<u>Professional Activities</u>	<u>Possible Points</u>	<u>Actual Points</u>
Member (state association, ASHP, APhA, AACP)	1	_____
Committee member (" " " ")	1	_____
Officer (" " " ")	2	_____
Non-professional activities (represent as pharmacist - Kiwanis, etc.)	1	_____
Multidisciplinary committee (American Heart Association, PSRO, etc.)	1	_____
Consulting	2	_____
Editorial Boards	1	_____
Major college committees	1	_____
Chairperson of any committee	1	_____

Total points possible: 10

Actual total points: _____

Minimum acceptable: 4

FIGURE 10. Applicant Evaluation Form

similar to those sent to numerous individuals and organizations in the Minneapolis/St. Paul metropolitan area. If a site agreed to participate, it was sent a site application form. This form asked for general information about the facility, including size, number of staff members, population served, and services provided. It also requested descriptions of projects that might interest site personnel, lists of resources available to fellows, and descriptions of involvement with previous research activities and the training of graduate students.

The students received copies of a menu of site opportunities that was about 20 pages in length. Figure 14 is a page from the site menu book prepared for the fellows so that they could evaluate

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

<u>Goals and Motivation</u>	<u>Possible Points</u>	<u>Actual Points</u>
Sees personal benefit in Kellogg Program	3	_____
Sees how program participation can help colleagues, profession, patients	6	_____
Evidence of prior discontent/frustration	3	_____
Mention of lack of skills, training	3	_____

Total points possible: 15

Actual total points: _____

Minimum acceptable: 11

<u>References</u>	<u>Possible Points</u>	<u>Actual Points</u>
Thought to have needed drive/stamina	1	_____
Thought to be sincere/serious	2	_____
Thought to be mature	1	_____
Thought to be "outstanding"	1	_____

Total points possible: 5

Actual total points: _____

Minimum acceptable: 3

FIGURE 11. Applicant Evaluation Form

research opportunities and alternate locations. Students were required to visit the site preceptors and discuss potential projects. When agreement on a project had been reached, the fellow prepared a brief proposal for submission to the program directors. The resulting document was a contract that specified what the student would

APPLICANT EVALUATION

Name of Candidate _____

Reviewed by _____

Date _____

<u>Writing Sample</u>	<u>Possible Points</u>	<u>Actual Points</u>
Grammar, punctuation, spelling	2	_____
Sentence structure	3	_____
Effectiveness of communicating idea(s)	5	_____

Total points possible: 10

Actual total points: _____

Minimum acceptable: 7

FIGURE 12. Applicant Evaluation Form

do, how long it would take, and what the products of the endeavor would be. This worked very well.

The full flow of site activities is seen in Figure 15. Fellows were expected to remain continuously involved in site activities, so when a site project was completed and the written report was received, only a small period of time would elapse before the next site proposal would be received. The student would then be expected to be working on that site activity. The norm was two or three site projects per year.

INFORMATION DISSEMINATION AND PUBLICITY

After the program was in the development stage, a quarterly newsletter was prepared. The purpose of the newsletter was to disseminate information and knowledge about the program and to aid in recruiting. It also contributed to communication among sites, pharmacy educators, and friends and colleagues in pharmaceutical

FIGURE 13. Sample Site Invitation Letter

Kellogg Pharmaceutical Clinical Scientist Program

Department of Social and Administrative Pharmacy
College of Pharmacy
University of Minnesota
Minneapolis, Minnesota 55455
(612) 376-2457

St. Louis Park Medical Center Research Foundation
5000 West 39th Street
St. Louis Park, Minnesota 55416
(612) 927-3525

May 24, 1980

Mr. William Appel
Appel Pharmacy
3952 Lyndale Avenue South
Minneapolis, MN 55409

Dear Mr. Appel:

Your pharmacy has been identified as one which might have interest in joining the University of Minnesota College of Pharmacy and the St. Louis Park Medical Center Research Foundation in a unique new endeavor to produce pharmaceutical clinical scientists. This program, funded recently by the W.K. Kellogg Foundation, was developed in response to a need identified in the 1975 Report of the Study Commission on Pharmacy (the Millis Commission). It aims to provide experienced clinical pharmacists with a formal doctoral educational program coupled with on-site clinical training experiences.

Nationwide recruitment is currently underway for the fifteen practicing pharmacists who will be selected as fellows for the program. Each Kellogg Fellow will pursue a three-year course of studies leading to a Ph.D. degree in Social and Administrative Pharmacy. Through the program, each fellow will enhance his or her already-possessed clinical skills through projects at various sites in the Twin Cities area. Concurrent academic coursework will stress the development of sharply honed scientific research skills coupled with a broadened understanding of social- and behavior-oriented interdisciplinary theories.

Area pharmacy leaders whose sites are selected to become a part of this Kellogg Pharmaceutical Clinical Scientist Program may look forward to an exciting experience that promises to be rewarding on both a personal and a professional level. Site participants will guide the fellows over the duration of a jointly selected research project, usually lasting three to six months. They will also share, along with the fellows and various other academic and advisory program participants, the opportunity to discover and develop new relationships between the pharmacist, the patient, and the environment in which they interact.

The professional leaders whose sites become a part of our program will be welcome to join us for regularly scheduled monthly seminars. In addition, they will be invited to participate in semi-annual gatherings of program directors and participants and to meet with our National Advisory Board in what is expected to be an annual event. This National Advisory Board, consisting

FIGURE 13 (continued)

of Drs. John Millis, Leighton Cluff, Lawrence Weaver, Jerome Halperin, Gerald Schumacher and Lawrence Hoff, will be available for guidance and consultation throughout the program's four-year duration.

We are enclosing our program's descriptive brochure and a site application form. We hope that after reviewing this information you will be interested in becoming a part of our program, and we encourage you to apply.

Sincerely yours,

Paul B. Batalden, M.D.
Program Director

Albert I. Wertheimer, Ph.D.
Program Director

PBB:AIW/pb

Enclosures (2): Program Brochure
Site Application Form

Program Directors: Albert I. Wertheimer, Ph.D.*Paul B. Batalden, M.D.
National Advisory Committee: John S. Millis, Ph.D. (Chairman), Chancellor Emeritus, Case Western Reserve University*Leighton E. Cluff, M.D.,
 Executive Vice President, The Robert Wood Johnson Foundation*Jerome A. Halperin, Acting Director, Bureau of Drugs, U.S. Food and Drug
 Administration*Lawrence C. Hoff, Executive Vice President, The Upjohn Company*Gerald E. Schumacher, Ph.D., Dean, Northwestern University
 College of Pharmacy and Allied Professions*Lawrence C. Weaver, Ph.D., Dean, University of Minnesota College of Pharmacy
Academic Advisory Committee: David M. Angaran, M.S.*James C. Cloyd, Pharm.D.*Ronald Kitzmann, Ph.D.*
 J. Paul O'Connor, B.A., L.S.T.*Salvador Pancorbo, Pharm.D., Ph.D.*Ronald Sawchuk, Ph.D.

Supported by the W. K. Kellogg Foundation, Battle Creek, Michigan

education. A typical issue included articles on presentations made by national advisors, fellows' plans for site project choices, and the activities of those involved in the direction of the program.

RESULTS

Of the 15 candidates who accepted fellowships, 14 completed the course work. To date, 12 of those 14 have received Ph.D. degrees and are employed in related areas. One former fellow continues to work on his doctoral dissertation and is employed in a research project at a health maintenance organization. The fellow who did not complete the requirements has dropped out of the program.

From the meetings that we have had each year since the completion of the program, we see that the students are undertaking interesting and progressive scholarly and administrative activities. It appears that there are few clinical requirements needed, for most of these persons have administrative or educational/administrative responsibilities at the moment. More time will be required to see whether the careers of these fellows differ and whether they make multidisciplinary accomplishments in the information process of pharmacy and in the overall health care delivery system. Only a long-term assessment can determine the impact or success of the program.

REFERENCE

1. Study Commission on Pharmacy. Pharmacists for the future: the report of the Study Commission on Pharmacy. Ann Arbor, MI: Health Administration Press, 1975.

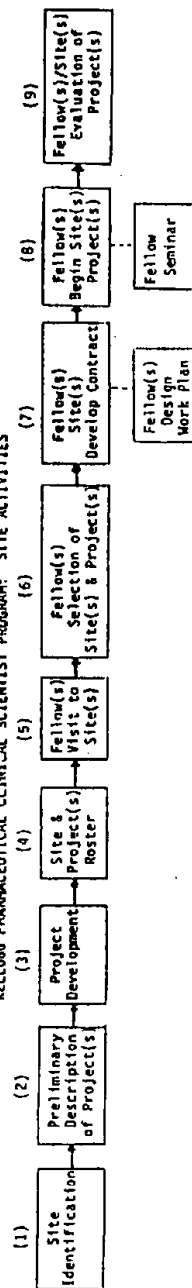
FIGURE 14. Sample Page of Site Menu Book

KELLOGG PHARMACEUTICAL CLINICAL SCIENTIST PROGRAM: CLINICAL SITE MENU

ORGANIZATION	Medcenter Pharmacy 5000 West 39th Street St. Louis Park, MN 55416 Ph: 926-8000
Contact Person(s)	Raymond Anderson Richard Bleck
Facility Description	Closely affiliated HMO mail order service.
Pharmacy Sq.Ft.?	1000
Rx Per Day?	350
In-patient?	No
Out-patient?	Yes
Population Served	Community
# of Staff Pharmacists	4
Resources Available	Affiliated Health Services Research Center. Patient educators available within group practice.
Library? # of Volumes	Yes - 960 Volumes
Computers?	Yes
Drug Profiles?	Yes
Patient Profiles?	Yes
	<u>Potential Projects:</u> 1. Effect of prepaid practice on pharmaceutical practice patterns. 2. Public policy implications of non-physician prescribing in response to economic and efficiency constraints. 3. Drug Utilization Review - re: sleeping pills. 4. Review of purchasing and dispensing procedures for a central pharmacy and its satellites. 5. Relationship and communication between ambulatory clinic and its pharmacy. 6. Balancing the HMO inspired move to generic drugs against problem of patient acceptance. 7. Development of a system for updating and maintaining the quality of an established drug formulary.

Methodist Hospital 6500 Excelsior Blvd. St. Louis Park, MN 55426 Ph: 932-5445	Midway Hospital Pharmacy 1700 University Avenue St. Paul, MN 55104 Ph: 641-5484
Ronald Kitzman Duane Bosch	Thomas Blissenbach Kenneth Majkowski
24 hour pharmacy service, IV admixture, unit dose for Extended Care Facility, inservice education, cancer team, assessment, aminoglycoside dosing.	Chronic Respiratory Care Unit. Chronic Pain Program. Community Hospital
3650	1000
1050	500+
Yes	Yes
Yes	Yes
1/3 outstate, community	Community
10.25	10
	Iowa Drug Information System.
Yes - extensive	Yes
Yes	No
	Yes
Yes	Yes
<u>Potential Projects:</u>	<u>Potential Projects:</u>
1. Inpatients: pharmacist involvement in taking medication history or doing patient discharge instructions for take home prescriptions, does it help?	1. Comparative cost analysis of drugs.
2. Drug displays and their effect on prescribing habits.	2. Initiation of area-wide hospital formulary development.
3. Emergency room outpatient prescribing behavior.	3. Analysis of potential for statewide buying groups.
4. Clinical pharmacy in a private hospital: political implications of charge; the pharmacist in transition.	4. Standardization of oncological chemotherapy process.
	5. Develop methodologies for cost-effectiveness analysis of moving to decentralized pharmacist (e.g., RN, cost savings).
	6. Measure and evaluate effect of self-administration drug monitoring and to behavior modification components of outpatient programs for cardiac rehabilitation and chronic respiratory care.
	7. Analyze potential for hospital pharmacy's role in community outreach programs.
	8. Development of drug therapy monitoring protocols for critical care drugs.

KELLOGG PHARMACEUTICAL CLINICAL SCIENTIST PROGRAM: SITE ACTIVITIES



Activity	Description	Estimates of Site Time
1. Site Identification	Kellogg Pharmaceutical Clinical Scientist Program (KPCSP) staff solicit site participants.	1 Hour
2. Preliminary Description of Project(s)	Interested sites complete site APPLICATION FORM item describing project(s).	1 Hour
3. Project Development	KPCSP staff and site contact meet to develop detailed description of site project(s).	--
4. Site and Project Roster	KPCSP staff assemble a listing of all sites and projects, along with descriptive information about site.	1 Hour
5. Fellow visits site(s)	KPCSP staff and KPCS fellow meet with selected site contact people to discuss possible projects.	1 Hour
6. Fellow selects site and project	KPCSP staff notifies site of selection.	--
7. Fellow and site develop contract	The fellow and site contact people, with assistance from KPCSP staff, develop a contract. Including time commitments, materials, work plan, objectives, desired outcomes, etc., setting limits without curbing independence.	2 Hours
8. Fellow begins site project	Fellows implement work plan, including organizing and active participation in fellow seminar, which may take place on site premises.	Ongoing according to contract
9. Fellow/ Site evaluation of project	At the end of individual project(s), the fellow, and the site contact people, will evaluate the project. Evaluation tools may be developed by fellow, site, and/or KPCSP staff.	2 Hours

FIGURE 15. Site Activities Chart