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The Recruitment and Training of the Research Psychiatrist

Formulated by the Committee on Psychopathology

Group for the Advancement of Psychiatry

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This report is the sixth in a series of Reports and Symposiums that will comprise Volume VI. For a list of other GAP publications on topics related to the subject of this report, please see page 578.
STATEMENT OF PURPOSE

The Group for the Advancement of Psychiatry has a membership of approximately 185 psychiatrists, organized in the form of a number of working committees that direct their efforts toward the study of various aspects of psychiatry and toward the application of this knowledge to the fields of mental health and human relations.

Collaboration with specialists in other disciplines has been and is one of GAP’s working principles. Since the formation of GAP in 1946 its members have worked closely with such other specialists as anthropologists, biologists, economists, statisticians, educators, lawyers, nurses, psychologists, sociologists, social workers, and experts in mass communication, philosophy, and semantics. GAP envisages a continuing program of work according to the following aims:

1. To collect and appraise significant data in the field of psychiatry, mental health, and human relations;
2. To re-evaluate old concepts and to develop and test new ones;
3. To apply the knowledge thus obtained for the promotion of mental health and good human relations.

GAP is an independent group and its reports represent the composite findings and opinions of its members only, guided by its many consultants.

The Recruitment and Training of the Research Psychiatrist was formulated by the Committee on Psychopathology.*

* The Committee wishes to express its special thanks to its consultants on this report: Dr. Bert E. Boehm, Chief, Research Fellowship Program, National Institute of Mental Health; and Dr. Max M. Levin, Associate Director, Institute for the Study of Human Problems, Stanford University

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INTRODUCTION

Psychiatry today is in a remarkable and exciting phase of growth. The vast need for its services has sharply augmented public interest and support. However, while its techniques multiply and its scope broadens, one may discern a serious imbalance. Not only does demand outstrip supply, but practice outruns knowledge and theories are often built on shaky foundations. Within the medical family, psychiatry tends to be a field of over-speculation. Psychiatrists too often are partisans of narrow schools of interest who have not yet assumed in a serious and sustained manner the responsibility of disciplined scientific labor. Although the importance of research is generally recognized, psychiatric investigation has yet to become an integral or widely established part of the profession. It is readily agreed that the three essentials for any clinical discipline are service, research, and training, but within psychiatry expanding pressures for service to the relative exclusion of research threaten the vitality of both.

It is the committee’s strong belief that in order to remedy this imbalance, there must be not only a profound scientific development within psychiatry, but also an impact of this scientific development upon patterns of psychiatric practice and training. Such a development is essential in order to explore and evaluate current thinking and practices, to validate therapeutic methods, to add new and significant knowledge, to strengthen our theory and to coordinate our efforts with advances in other fields—in a word, to advance psychiatry to a much higher scientific level.

Further, the complexities of modern biological and behavioral sciences are such that a casual approach to research is simply not adequate.

For leadership toward an adequate science of psychiatry, we shall require a much larger group of devoted investigators within the profession than the small number of research psychiatrists now at work. Basic scientists of many disciplines will continue to investigate problems relevant to psychiatry, and to improve the body of knowledge for understanding human behavior and the treatment of the mentally ill. But unless well-trained research psychiatrists are incorporated into these investigative activities, their relevance to the issues central to psychiatry may remain unrecognized and incomplete.

Because many more psychiatrists must be attracted to and trained in research, this report will review factors affecting recruitment for research, requirements in training programs, and influences exerted from medical school through post-residency training upon present and future careers of research in psychiatry. The discussion will move from opportunities for developing research interests in the medical school to the present status of the psychiatric investigator. However, specific recommendations such as those to be expressed on recruitment and training will fail unless attitudes of psychiatrists toward scientific endeavor become more positive and realistic. It is our conviction that the most potent influence needed to relieve the present imbalance is an attitudinal shift among psychiatrists that will result in a more scientific orientation. A satisfactory investment in the long-term goals of research will occur when the psychiatric community as a whole is willing to make it.

Identification of the Research Psychiatrist

In this report a research psychiatrist will be identified as a medical scientist, trained in clinical psychiatry, who devotes a major part of his energy to investigations bearing on the etiology, diagnosis, treatment, or prevention of mental illness. He may
work as a scholar with scientific literature, be concerned with theory and methodology, depend mainly upon clinical observation, or work in a laboratory; and he may use the techniques of any scientific discipline to study human or infrahuman behavior.

The Special Function of the Research Psychiatrist

The research psychiatrist is expected to make a special contribution to behavioral science because of a unique perspective from clinical training and experience. As a physician he assumes medical responsibility in research involving human subjects. Medical training emphasizes the application of the basic biological sciences to clinical problems. From clinical study and practice, the psychiatrist has gained first-hand knowledge of mental disorders, from minor maladjustments to severe psychoses. He examines a clinical situation in its full complexity, with awareness of significant factors in the patient's biological functioning, personal development, family relationships, and cultural setting. Psychiatrists are needed both to design research on the problems of clinical psychiatry and to bring to behavioral research the issues and techniques of psychiatry.

Teaching psychiatry to medical students involves the special problems of presenting effectively a medical discipline that is derived from the behavioral as well as the biological sciences. This dual origin of background knowledge augments the difficulties encountered by all disciplines in creating a program that effectively combines clinical theory, clinical practice, and application to scientific problems. If psychiatry is to attract its proper share of students with the aptitude for scientific accomplishment as well as clinical skill, the scientific basis of the discipline must be presented at the beginning of the medical school curriculum and must be continuously integrated into the clinical teaching.

It is encouraging that psychiatry is taught much more extensively in medical schools now than it was a generation ago. A recent GAP report¹ points out that in the 1940's and 1950's the number of medical schools in which psychiatric departments offered both freshman and sophomore courses rose from 25 to 61. During this period, the average number of hours scheduled for preclinical psychiatric teaching increased from 20 to 73.

Clinical Orientation of Introductory Courses

While there is considerable variability and new trends are emerging, the introductory courses in psychiatry are still commonly taught with a dominating clinical orientation in order to provide an overview of psychopathology and its use in clinical

¹Group for the Advancement of Psychiatry: The Preclinical Teaching of Psychiatry, GAP Report No. 54, October, 1962.
practice. In a number of medical schools, especially since the mid-1950's, the introductory courses have been broadened by an emphasis upon the scientific approach to problems of behavior that complements the presentation of clinical theory and practice. In one department, for example, the introductory course stressed the basic sciences of clinical psychiatry in relation to a central theme of psychodynamics. Both clinical and experimental material was presented, and the entire course was taught by a research psychiatrist. In the year following this curriculum change, the number of students who chose to work in psychiatry as part of their undergraduate research training increased from 8 to 23; previously few freshman or sophomore students had taken advantage of the opportunity for psychiatric research experience. Exposure to this kind of teaching seemed to make students aware that psychiatry, like the other subjects to which they were introduced, invites research.

In a second medical school, a similar result was obtained from the innovation of a basic course on human behavior, conducted by a combination of lectures and laboratory sessions for small groups. In each of the small groups two instructors participated, a psychiatrist and either a psychologist or a sociologist. This course stimulated the interest of medical students in psychiatric research to such an extent that a majority of the part-time or summer stipends available in the department have been awarded to freshmen. That these two examples represent a current tendency is evident from the GAP report the preclinical teaching of psychiatry, which shows that a number of medical schools have integrated the teaching of basic behavioral sciences in the preclinical psychiatric courses. These changes in curriculum and emphasis in the first two years of medical school appear to have enhanced the attractiveness of psychiatry for medical students in some schools. If supported by adequate psychiatric teaching after the preclinical years, they could constitute an important step in recruitment to psychiatric research. It should be recognized, however, that at present the basic science approach in psychiatric teaching is still experimental. The present diversity of teaching programs, some employing a basic science and others a clinical orientation, may permit a future evaluation of their relative efficacy in recruiting research psychiatrists.

It has been found, however, that although interest in psychiatric research may be generated in the preclinical years of medical school, this interest may evaporate during the junior and senior years. In both of the departments cited above as examples of effective preclinical teaching, the number of applicants for research training in psychiatry markedly decreased after the sophomore year.

**Contribution of Research Experience**

Since the majority of students make their career decisions during their last two years of medical school, the effectiveness of the teaching program in the clinical years is especially important. Part of the problem of sustaining interest at this time may be that in psychiatry clinical teaching is less effective than it is in some other specialties. In medicine and surgery, for example, medical students respond to skilled clinicians with an interest in research who reinforce in the students' minds the scientific nature of their specialties. Comparable clinical teachers of psychiatry are needed who are scholarly in their teaching, bringing out alternative explanations for observed phenomena and cultivating an attitude of inquiry.

That experience in research contributes effectively to undergraduate psychiatric education has been demonstrated during the past decade in many medical schools. Participation in a research project is appealing to students in each of the four years, and in a number of programs a significant proportion of medical students who have engaged in research in psychiatric problems have undertaken psychiatric residency training.

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5 Almost 75 per cent of the 1960 medical graduates did not decide upon a specific career until the last two years of medical school. See C. P. Schumacher, "The 1960 Medical School Graduate: His Biographical History," *Journal of Medical Education*, Vol. 56, 1961, p. 394.
The provision of stipends by the National Institute of Mental Health for full-time psychiatric assignments in the summer periods between academic years, or part-time assignments during the academic years, has enabled many medical students to extend their psychiatric education beyond the requirements of the curriculum. This NIMH program was made available to the medical schools in 1957. During its first four years, 1957-1960, a total of 2,216 stipends were awarded. Analysis of a sample of 500 awards during these years demonstrated that 252, or 50 per cent, of the students elected research assignments; 33, or 7 per cent, elected mixed clinical and research assignments; and 191, or 40 per cent, chose clinical assignments. Of the 500 students, 61 per cent received stipends during their freshman or sophomore years. A sample of 47 research projects showed the most favored to be in psychopharmacology, psychophysiology, and psychotherapeutic processes (four to eight projects in each). There were one or two projects in each of 20 other fields of research.

The experience of one department of psychiatry in a medical school exemplifies the effectiveness of an undergraduate research training program that had the advantage of an active research group on the teaching staff. During the five years beginning in 1957, a total of 66 students participated. They were encouraged and helped to select their own preceptors and types of research experience. More than half of the projects they chose were in clinical research, and about one-fourth consisted of laboratory experiments involving human subjects. Others were focused upon a variety of problems in the basic sciences. Of this group of 66 medical students, 25 were seriously attracted to specialization in psychiatry; 12 of those whose decision appeared to be firm have devoted two or more periods in medical school to research projects; and most of the 12 had chosen laboratory projects. These observations suggest that scientific experiences with problems of mental illness may influence medical students to elect a career in psychiatry.

In addition to the special training programs in psychiatric re-
THE PSYCHIATRIC RESIDENCY

In the education of psychiatrists, residency training is a major influence upon subsequent professional work. The resident concentrates for three to five years, within the broad discipline of psychiatry, upon the acquisition of knowledge and skills in a succession of varied clinical assignments. The goal of competent clinical practice naturally dominates, because of the resident's intense concern for his patients, as well as because of medical tradition and the great public demand for psychiatric services. Under such pressure, it is not surprising that opportunities for scientific experience are slighted in favor of clinical experience.

Most residency programs do little to foster the scientific interest of residents or to prepare them for investigative work. How to provide training in both clinical practice and research has, indeed, baffled program directors who are themselves scholarly and imaginative. It is argued that there is too little time in the residency for both clinical training and research and that research training should be put aside until a later date. Frequently, psychiatric teachers manifest active resistance to the inclusion of research training within the residency program. Some teachers assert that research projects are antithetical to the doctor-patient relationship and that they interfere with the teaching of psychotherapy. The assignment of residents and the allocation of their time can become controversial, reflecting differences in values. Given such attitudes on the part of program directors, the resident with research promise is penalized. As a result of this prevailing attitude, efforts to balance psychiatric education have been frustrated, and the experience of frustration because of a lack of scientific skills is common among psychiatrists even from the stronger residency programs.

Scientific Orientation in Clinical Training

In the 1960's sufficient maturity has been achieved in graduate psychiatric education to permit a different orientation in residency training. Psychiatry can be presented with an emphasis upon its scientific basis, as well as upon its application to clinical problems. From this point of view, research can be incorporated into the residency as part of clinical training. Its value will be appreciated by those residents who choose a career in private practice as well as by those who become professional investigators.

In his residency every psychiatrist must become aware of the uses and limitations of clinical data that come from subjective reports and the observations of behavior. To be discriminating, the psychiatric resident must learn neither to accept all subjective reports and his own observations as "truth," nor to accept as fact only observations substantiated by laboratory data. He must become expert in evaluating the reliability and validity of data from both sources.

It is difficult for a psychiatrist to function without some general theoretical framework that permits him to organize the complex clinical data he handles. But theory often governs the nature of the observations. The resident must not only acquire a broad knowledge of relevant theory, but also understand the evidence on which the theory is based so that he will not be vulnerable to fads and doctrinaire positions. Every psychiatric residency should provide training that will enable the resident to read critically publications relevant to his specialty. A research orientation enhances curiosity about the nature of clinical observations and directs attention to the nature of clinical problems. It also promotes a dissatisfaction with superficial explanations of clinical phenomena.
Pressures for commitment to a prevailing orientation may inhibit the development of the researcher. Restriction to a single approach within a training program—whether it be psychoanalysis or molecular biology—hinders the spirit of investigation. Similarly, uncritical acceptance of community mental health concepts that have not yet been validated will fail to encourage scientific inquiry.

There is no set formula for the integration of scientific inquiry and clinical training, and procedures will vary with personnel, facilities, and administrative policies, as well as with teaching techniques. One vital influence, however, is the clinical teacher with an active interest in research.

If those responsible for training are engaged in research, residents will tend to identify with them and adopt their attitudes. A recent study of the careers of psychiatrists, who had their residency in a large hospital showed that the career choices were determined in part by the hospital setting, but most importantly by their teachers. At one time there was an exceptionally strong research interest in the hospital; subsequently, the percentage of residents who became involved in research doubled.

Ideally, the psychiatric teacher should be skilled in diagnosing and treating patients, in communicating his knowledge to residents, and in conducting research. Few will be able to carry on all of these activities with equal effectiveness. The presence of scientific attitudes among the faculty, nevertheless, nurtures these attitudes among residents. Continued re-examination of basic assumptions behind current beliefs and practices keeps medical education vital. Critical spirit flourishes in a climate where differences of opinion are expressed and respected. This vitality is especially fostered if teachers employ diverse methods to approach similar problems.

In a scientifically oriented program, residents can see that while there are differences between research and the care of patients, there are criteria for evaluating evidence which apply equally to both and that theories are always provisional. Particul-

arly in the beginning, a resident may find difficulty in an atmosphere where opinion and fact appear to have a temporary and fluid character. The teacher, therefore, understands the need of the resident to find a stable frame of reference. The teacher will attempt to bring out an attitude of critical self-reflection in the resident, so that he can be an observer of experiments of nature and at the same time be able to intervene therapeutically on behalf of his patient. The absence of a well-founded scientific answer to a clinical question does not justify a dodging of responsibility for the patient or unwarranted delay in treatment.

The faculty members of psychiatric residency programs have the responsibility to bring to the clinical teaching new developments in clinical psychiatry and also to incorporate new findings from related disciplines such as anthropology, sociology, biochemistry, psychology, and neurophysiology.

Aside from the general atmosphere of the residency program, there are a number of more or less specific techniques that may be employed to foster research training.

Project-Centered Training in Research

A variety of seminars may be used to introduce and stimulate research. Many programs have journal clubs. Some have regular research presentations by members of the faculty or invited guests. Others give formal courses in research design and methodology. An example of an effective approach is the kind of research seminar used in one department of psychiatry in which residents carry out actual research projects, using record-room material. One first-year and one second-year resident function as a team, with a faculty member as an adviser and all faculty available for consultation. The entire faculty and resident group attend all sessions. Presentations are structured by a definite plan involving a series of research questions. A recent example is a problem in which residents were asked to determine whether the symptom patterns of conversion hysteria had changed during the past 40 years. After examining psychiatric records, the residents,
on their own initiative, obtained similar records from the department of neurology. The results of this survey demonstrated that neurologists still see hysteria of the type described by Charcot, whereas the symptoms of the patients referred to psychiatry are quite different.

This type of exercise with active participation in a manageable project was chosen in preference to a formal course in research methods, statistics, and so on. Although some formal orientation is desirable, experience suggests that the discussion of research methods makes an impact only when it is related to a definite problem. The problem-centered research seminar accomplishes the goal of instructing the resident group in the criteria for proper research design, evaluation of evidence, and statistical validation, and it provides experience in reviewing the literature pertinent to research problems. Perhaps more important, residents have developed a keen awareness of the problems connected with the use of ordinary clinical records for research purposes and of the need for well-organized plans in data gathering. A research seminar of this type, which contributes to clinical training, consumes relatively little time. The problem faced reinforces the need for the application of scientific principles to both clinical and research problems.

It is important that residents be encouraged to undertake research projects at any time during the residency and that adequate opportunities to conduct investigations be provided. There are grounds to support the introduction of some type of research activity in the first year of training. It has been frequently observed that delaying its introduction until the third year can be most unsatisfactory and frustrating to the resident. By the time he has reached his third year, he has already developed a degree of skill in clinical psychiatry, and he naturally feels awkward and unskilled in the new area. For this reason the resident tends to turn away from research activities and to go back to the thing he knows something about. The amount of time to be used in research will naturally vary. By the third year a resident may profitably use as much as half of his time in investigative work. The importance of the freedom to use the research method whenever the occasion arises cannot be overemphasized. It permits the resident, under supervision, to work on his own initiative and to achieve results. Essential to such a program is an adequate balance of staff and patients, so that time can be used in research without injury to the demands of patient care. This balance is always hard to achieve. Maintaining it as additional patterns of psychiatric service are developed will continue to be a problem.

A variety of projects can be undertaken and completed during residency in psychiatry. Some may be quite extensive and involve complex designs and methodologies, while others may be simple. The choice will depend to a great extent on the specific background and experiences of the resident, as well as upon the availability of supervisors. The following are specific examples of research recently carried out in one program by residents with no previous research experience: (1) A comparative study of the behavioral effects, including psychological test changes, of two psychotogenic drugs, LSD and Ditran. This study showed that the effects of the drugs were different and failed to support the hypothesis of a general factor of individual susceptibility to psychotomimetics. (2) An investigation of personality characteristics and perceptual responses (olfactory and tactile) in children with congenital meningomyelocele. A central question concerned the evidence for anal traits in children who could never acquire bowel control. The results suggested that these children were less compulsive, and less inclined to react to appropriate stimuli with disgust, than a control group. (3) Evoked cerebral potentials were compared in patients with chronic brain syndromes and in a non-patient control group. Cerebral response differences were found to be of two kinds, associated (a) with aging and (b) with brain syndrome manifestations. The third project was the only one that required elaborate laboratory facilities.

It is helpful to have research conducted by residents reported
at periodic intervals to the whole resident group and to the faculty. If the problem involves related disciplines, it is important to have scientists from those disciplines present at the time the report is made. It is also desirable to set aside funds for equipment, technical assistance, travel, and publication costs. With such funds, residents can engage in substantial projects, visit research centers, attend lectures on related research, hear papers at national meetings, and, finally, write papers that may be published or presented to appropriate groups.

Supervision of Research Training

The role of the supervisor of residents in research often leads to a close personal relationship. The resident may tend to identify too much with the supervisor, or to ask that the supervisor make all decisions. On the other hand, he may sometimes react against the supervisor merely to assert his independence. It is essential for those guiding research efforts to allow the resident to assume responsibility to the best of his capacity, and to avoid using residents only to assist in their own investigations. The supervisor must guard against imposing inappropriate goals or standards, which become frustrating and stifling. However experienced, the supervisor must keep reminding himself, if he is to keep the effects of his teaching free from inhibition or dependence, that it is his job to guide and to encourage.

The faculty supervisor can help a resident to arrive at a clear statement of a problem, to explore methodology, and to enjoy enthusiasm for investigation. At the same time he may make it clear that limited research experience does not produce a finished investigator. The supervisor needs to evaluate the strengths and weaknesses of the resident, and to gauge the degree of supervision required. Some students are more productive on their own initiative than under frequent supervision. Sometimes residents may want to collaborate or join in a project directed by a faculty member. It is important for the resident to comprehend that there are many types of research and that all of these have their own requirements and methods. Perhaps the most important qualifications of the research supervisor are his attitude as an educator and his capacity to assume scientific responsibility with a professional problem, either on a clinical service or in a laboratory.

An orientation to research as an essential part of graduate psychiatric education will alleviate the dichotomy often found between clinical and research training at the resident level. With an emphasis upon a scientific attitude, it will be possible to strengthen the development of psychiatrists with a sustained interest in the pursuit of knowledge, whether they choose to engage mainly in clinical practice or in teaching and research.
3

RESEARCH CAREER DEVELOPMENT AND POST-RESIDENCY RESEARCH TRAINING

Research psychiatrists in the past and senior research psychiatrists in the present have achieved their competence by individual courses of medical training and experience. Some have completed training in two or more disciplines. Characteristically, they have created their own opportunities to work in laboratories and have developed programs of research that they have financed by extraordinary effort and ingenuity, through writing, teaching, clinical practice, and subsidies from all types of institutions and foundations.

During the past 10 to 15 years the research career, although as yet pursued by a small number of psychiatrists, has taken its place within the discipline as a recognized and appreciated type of specialized endeavor. Psychiatric residents with scientific aptitude look for opportunities to pursue research careers. At least a score of the strong residency training centers with established research programs recruit promising young psychiatrists for research, and patterns of career development for the research psychiatrist have emerged.

This section of our report has to do with the kinds of experience and training that may effectively assist a psychiatrist beyond the point of residency training to begin a career in research. Some who complete psychiatric residencies may already have received the benefits of carefully disciplined research training from the work required for a Ph.D. in a basic science. Most young psychiatrists, however, must begin with a fragmentary and incomplete knowledge, accumulated from those opportunities that could be included in the crowded program of activities of the medical school and the residency. This background is not likely to be sufficient for independent investigation since a broad range of theories and techniques must be encompassed. Psychiatric research requires access to the knowledge and techniques of other sciences, and for investigative work clinically oriented psychiatrists usually require special training in these sciences. Sciences that have proved to be germane to psychiatric research are neurophysiology, neuropharmacology, biochemistry, physiology, epidemiology, psychology, genetics, sociology, and anthropology. The amount of training that an investigator may need in any of these disciplines can be estimated only by assessing his background and his goals. His work may require a thorough grounding in another field equivalent to a doctoral program, or he may find that intensive study in one or more areas of a basic science will be sufficient. If he focuses his research on clinical problems for which scientific methodology in the use of clinical instruments needs to be developed, he may then have to acquire specialized clinical training beyond that which is feasible in a residency program.

The leading psychiatric centers with research programs offer flexibility to the young research scientist. Special opportunities to acquire laboratory skills are arranged in various departments of the medical school, and when formal or informal instruction is needed in psychology or in the biological or social sciences, it is available in the university community. Within his own department the young research psychiatrist may become a member of the staff with the expectation that he will contribute to the teaching program, participate in the clinical work according to his interests, and be free to organize his time for pursuit of his two main objectives: (1) experience in research projects and (2) education that will enable him to become an investigator with mature competence in design and methods relevant to the problems of his choice. Experience with the career investigator grant program of the National Institute of Mental Health suggests these objectives may be achieved in five years.
POST-RESIDENCY RESEARCH TRAINING

Research career development also necessitates the active cooperation of a senior administrative and research staff. Special funds are needed for research costs, for travel to scientific meetings, and for periods of study in appropriate centers away from the sponsoring institution. During this period of career development, in which a considerable investment is made for a contribution to psychiatry that must be realized fully at a later time, an acceptable salary must be provided.

All of these provisions have become available in a limited number of psychiatric centers through a combination of university research funds, state funds, and funds from both private foundations and federal agencies.

A variety of programs that provide for the support of psychiatrists in research training are administered by the National Institute of Mental Health. These programs have been authorized in response to the special needs of training and research centers and to extend opportunities for training in response to the national need for the advancement of psychiatry. Training grants, fellowship awards, and research career development awards support general residency training, specialized training beyond the general residency, training for interdisciplinary research, training, in fact, for any type of research applicable to mental health problems, and career development of the research scientist in appropriate institutions.

Graduate training grants in psychiatry, which provide for both teaching costs and stipends, may support residents in part-time research training during the first three years of a residency program and in more extensive research training during the fourth and fifth years. Graduate training grants in psychiatry are also available to support organized research training programs for a two-year period subsequent to residency training. Similar grants, covering teaching costs and stipends, are also available for training programs in the social sciences and in the biological sciences. These grants are designed not only to train biological or social scientists for research on mental health problems, but also to train psychiatrists as well as other mental health personnel in the research techniques and skills of the biological and social sciences.

In the research fellowships program of the National Institute of Mental Health the special research fellowship, which provides an individually determined stipend, is available to the psychiatrist who, on completion of his residency training, needs support for one to three years of full-time research training. Fellowship awards complement research training grant support for the reason that there are many opportunities for the research training of an individual that are not dependent upon an organized research training program.

For the psychiatrist who is prepared to commit himself to a career of research, having developed projects of experimental work, support is available from the National Institute of Mental Health research career program. One type of research career development award is designed to support psychiatrists and other scientists prepared to begin research on problems relevant to clinical psychiatry who require additional research training. Psychiatrists who are more advanced in research, to a point of being fully qualified for independent work, but who require additional experience to reach their full potential as research scientists, are also supported by a second category of research career development awards.

Specialization in Research

The objectives and the nature of experiments that have been conducted by research psychiatrists, as well as the interests of psychiatrists who are presently engaged in post-residency research training, demonstrate many possibilities of specialization. These require different combinations of background experience, formal and informal training, and facilities for research. In order to consider this range of possibilities, four distinct patterns of research that are attractive to psychiatrists will be described briefly, in relation to specific needs for post-residency research training.

1. Research on problems of behavior that are important to psychiatry, but are preliminary to clinical applications.
Studies of the fundamental social, psychological, and biological systems relevant to psychiatric issues may not be conducted with sufficient persistence, depth, or focus by scientists in disciplines other than psychiatry. For this research, psychiatric training is necessary to the identification of the problem, and psychiatric insight as well as basic science techniques is required for the design and conduct of the research. Psychiatric investigators study the biochemical mode of action of psychotomimetic drugs, the neuroendocrine controls of sexual differentiation in animals, or the psychopathology of social groups. Research of this kind brings about a strong professional relation between psychiatrists and their basic science colleagues, thus establishing a valuable communication concerning psychiatric objectives for research in the basic sciences.

2. Research requiring the application of theory and methods from basic science to problems in clinical psychiatry.

Research psychiatrists with special competence in basic science may apply their skills to specific clinical problems. One example is the study of variations in electrical brain responses evoked by sensory stimulation in different psychiatric disorders and their changes with treatment. Another is the study of mother-infant interactions on the subsequent development of psychological disorders. Still another might be the utilization of ecological and epidemiological techniques in the study of psychiatric conditions. Such studies of clinical relevance, like the investigation of the more basic problems described above, require competence in a selected basic science area, such as neurophysiology, biochemistry, developmental psychology, or epidemiology.

3. Research on problems of clinical psychiatry by clinical methods.

This pattern of research would include, for example, studies of the incidence of hallucinations in a particular psychiatric disorder, the night-eating syndrome in obesity, or the incidence of separation experiences among suicidal patients. Studies of clinical problems such as those involved in psychodynamics, psychiatric diagnosis, and psychotherapy may be investigated by controlled and naturalistic observations in a variety of clinical settings.

4. Research on social problems involving the application of psychiatric knowledge.

Psychiatric investigators contribute to the understanding and solution of a variety of social problems such as disasters and other social crises, intergroup and international conflicts, problems of youth and old age, and problems of education and poverty. Social psychiatry is being increasingly focused on the elucidation of the role of individual and group psychopathology in such social problems. Developments in this field require the use of theory and research methods from social psychology, sociology, and anthropology.

The work of a psychiatric investigator may represent more than one of these four patterns of research, and there is evident need for specialized training that will enable research psychiatrists to move from one orientation to another for effective approaches to scientific problems. It should be emphasized that scientific psychiatric investigation that arises from clinical problems broadens the scope of the basic sciences.

Advanced Research Training in Relation to Research Experience

Whatever his goal in research may be, the formal training of a research psychiatrist by course work and guided reading should yield familiarity with the application of scientific method to areas of psychiatric investigation. He must develop the ability to define the purpose of a research project, make a critical review of the relevant literature, collect and analyze data, interpret the results in a relevant theoretical context, and prepare a scientific report.

Excessiveness and inflexibility, however, are hazards in formal research training. A schedule of didactic courses and seminars may encroach upon the time necessary for practical research experience, and the formal training may not be sufficiently tailored to the interests and needs of the investigator. Much of the factual
knowledge that a mature scientist has achieved by research experience is not approachable by a didactic short cut. One may be confident that the most expedient way to organize advanced training in psychiatric research, as well as research training at the level of the medical school or the psychiatric residency, is in relation to an individualized program of research activity, for which supervision by senior consultants is made available as needed.

The research psychiatrist who would develop knowledge and skill for the study of clinical problems by psychiatric methods has a special difficulty in organizing an effective training program. Training is hard to get in clinical phenomenology because of the scarcity of models. Although it is true that competence with theory and scientific method in a basic science sharpens the perception of phenomena in clinical research, experimental laboratory techniques are distant from observational and exploratory approaches in the investigation of clinical phenomena. Clinical investigation is nevertheless essential, and its value is reflected by the fact that during the past 30 years imaginative clinical research has illuminated such important syndromes as autism in children, as well as modes of communication in families, in groups, and in psychotherapy.

In the recent past, specialized post-residency training in clinical areas has been provided mainly by psychoanalytic institutes. The curricula of these institutes, however, have not emphasized research, and their faculties have been interested in training practitioners rather than investigators. Recent criticism within psychoanalytic education has repeatedly expressed the need for research and for research training in psychoanalysis. Although some psychoanalysts are among the most astute clinicians in psychiatry, few have competence in the behavioral sciences. Psychoanalytic teachers are capable of sharing their clinical experience with the research psychiatrist and of making the important contribution of training in clinical skills. To make a broader contribution to the training of the research psychiatrist, it would be

necessary for the psychoanalytic institute to develop an interest in the continuous review and control that questions the soundness of current approaches and skills and that seeks new solutions to old problems.

The pursuit of analytic training results in a major encroachment of time, energy, and commitment upon the research psychiatrist. For some, psychoanalytic training may be helpful in research. The time and money required, however, may become too much of a burden. The provision of funds for the training expenses of investigators and a modification of psychoanalytic training for research psychiatrists might reduce the necessity for engaging in private practice.

In addition to the training available in psychoanalytic institutes, there is a need for advanced clinical training in other areas. The contributions of Kretschmer, Bleuler, Meyer, and others have demonstrated that the tracing of the natural history of psychiatric disorders, the careful delineation and description of symptoms and signs, and the precise classification of clinical entities are greatly to be valued.

Advanced clinical training is now possible, furthermore, along a broad front in relation to community psychiatry. Clinical training in new environments such as emergency clinics, day hospitals, night hospitals, halfway houses, and domiciliary settings opens up additional experiences in the social therapy of mental patients. Conjoint family treatment is being improved and extended. There is an excellent movement in forensic psychiatry. The behavioral therapies, especially as adopted to retardates and patients with brain damage, are also coming to the fore.

Academic and clinical centers need clinicians dedicated to the scientific method for advanced training in a variety of clinical areas and clinical research methods.
THE TRAINED INVESTIGATOR

In this report we have considered the recruitment and education of physicians for careers of research in psychiatry. The recognized talent and interest among medical students and psychiatric residents, the increasing number of strong research training programs, and the value of the work being done by research psychiatrists all constitute evidence that research in psychiatry may continue to develop. In approximately half of the medical schools in the United States one or more research psychiatrists hold faculty positions in departments of psychiatry. Among all American institutions and agencies there are well over 150 psychiatrists experienced in research who maintain their identity as research psychiatrists in a variety of influential positions. They are appointed to the full range of academic positions. They serve as chiefs of laboratories and as directors of programs in hospitals and institutes. Some of these investigators are the chairman of university departments or the directors of large state or federal institutions.

Roles of the Research Psychiatrist

Although the trained research psychiatrist participates in many activities, his primary role is the pursuit of new knowledge. He is a problem-finder and a problem-solver who combines insight into psychiatric problems with sufficient scientific ability to find solutions. Selecting from a wide variety of techniques and methods, he has become expert in at least one. The research psychiatrist is also vitally important as the mobilizer, catalyst, and facilitator of the interactions of scientists of various disciplines who may establish common goals in research with psychiatric patients, their families, or the social milieu. In facilitating the investigatory efforts of his colleagues, the research psychiatrists experience in clinical psychiatry permits him to make vital suggestions to investigators from other disciplines about significant variables that must be recognized and controlled in an experimental design. His knowledge of clinical psychiatry may protect the patient's welfare and prevent potentially harmful affects that the non-psychiatrist investigator might overlook.

Although the major responsibility of the psychiatric investigator is to perform research, he simultaneously serves as a teacher and role-model for medical students, residents, and others. It has been observed that medical students more readily identify with the physician-teacher than with the Ph.D. The increasing tendency to emphasize the basic sciences as an introduction to psychiatry offers an opportunity for the investigator to participate at the preclinical level of instruction. Scientifically oriented students may be attracted early to careers in research psychiatry. Introduction of concepts, techniques, and philosophy of research into the clinical years is another major contribution that the investigator can make. It should be emphasized that during the residency and post-residency period the investigator has a key role and special responsibility in counseling and supervising future research psychiatrists.

The investigator frequently finds himself involved in administration. This function includes securing funds, organizing laboratory work, hiring personnel, handling staff group problems, obtaining the cooperation of clinicians and ward personnel, and so on. He also needs to coordinate his activities with other sections of the hospital or research institute. When the investigator reaches senior status still other roles are required—those of standard-setter and policy-maker.

The existence of multiple facets in the role of the research psychiatrist—investigator, clinician, teacher, and administrator—
entails a possible conflict of roles. Further, the relative emphasis on one or another aspect of his role may vary over the course of his career, requiring progressive revision in the light of changing experience. One hopes that the mature investigator will be able to resolve these multiple and ever-changing demands.

The Environment of the Research Psychiatrist

Investigators are currently employed in varied settings. They include university departments of psychiatry, state and federal hospitals and agencies, private institutes and hospitals, and industry.

It is obvious that the research psychiatrist's environment strongly influences his career. Administrators are faced with the conflicting demands of service, training, and research, and must determine priorities among these, often in the face of scarce resources. A crucial factor is likely to be the value or importance attributed to the research psychiatrist's activities by the administrative leadership of the organization in which he serves. There are favorable signs of a growing awareness of the need to provide a favorable environment to sustain research. Such an environment should provide the researcher with freedom to pursue his investigations, long-term support, and practical administrative arrangements to make research possible. Furthermore, the researcher hopes for realistic expectations from his colleagues concerning what he may reasonably accomplish. He should be compensated on a scale comparable to that of others in his profession.

Despite the long training, problems, and responsibilities that have been reviewed, the research psychiatrist has the gratification of being a member of the scientific community, the excitement of new ideas and discoveries, and the satisfaction of contributing to the understanding of human behavior and the alleviation of mental illness.

CONCLUSION

The importance of improving psychiatric knowledge needs no reiteration. A basic premise of this report is that research psychiatrists are required to accomplish this improvement. Such a development requires implementation at all levels of medical training from the freshman year of medical school to specialized training following the residency. In addition to a commitment of people, time, and money, an adequate development of research will require a pervasive change toward a scientific attitude within the discipline of psychiatry.