A BRIEF HISTORY OF THE FAIRLEIGH DICKINSON UNIVERSITY POSTDOCTORAL M.S. PROGRAM IN CLINICAL PSYCHOPHARMACOLOGY

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Fairleigh Dickinson University in Teaneck, New Jersey, established a training program for psychologists in psychopharmacology in 2000. This manuscript provides a description of the program, as an example of the type of training being provided to American psychologists in preparation for prescriptive authority. A history of the program is also presented in the context of the movement to provide American psychologists with postdoctoral training in clinical psychopharmacology.
Key words: *FDU Psychopharmacology Program, Postdoctoral training, American Psychologists*

La Universidad Fairleigh Dickinson en Teaneck, Nuevo Jersey, estableció un programa de formación para psicólogos en psicofarmacología en el 2000. Este manuscrito ofrece una descripción del programa, como ejemplo del tipo de formación que se está proporcionando a los psicólogos americanos para prepararse para la capacidad legal de prescribir. También se presenta una historia del programa en el contexto del movimiento para proporcionar a los psicólogos americanos con una formación posdoctoral en psicofarmacología clínica.
Palabras clave: *Programa FDU de Psicofarmacología, Formación postdoctoral, Psicólogos americanos.*

The history of American psychologists' efforts to become more involved in medication management has been brief but vibrant. It begins in 1984, when Senator Daniel Inouye spoke to the Hawai i Psychological Association about the drastic shortage of suitably trained providers of psychotropic medications, and recommended that psychologists begin pursuing prescriptive authority. His concern subsequently led him to introduce a bill into Congress to establish a demonstration project in the U.S. military in 1989. The bill passed, and led to the creation of the Psychopharmacology Demonstration Project (PDP), which ultimately resulted in 10 military psychologists receiving training in preparation for prescribing.

THE PSYCHOPHARMACOLOGY DEMONSTRATION PROJECT

The first iteration of this program began with four psychologists in 1991 (Sammons & Brown, 1997). The initial program involved two years of full-time coursework, essentially equivalent to the first two years of medical school, followed by a year of clinical training. This rigorous curriculum not only required a year longer to complete than was originally intended, it involved training in a variety of medical domains that were irrelevant to the participants' involvement in pharmacotherapy. As a result, the second and third iterations were substantially reduced. Where the first iteration involved 1365 hours in the classroom, the subsequent cohorts completed between 640.5 and 660 hours, eliminating a full year from the program. What was particularly important was the creation of courses specifically designed for participants in the PDP, which was an explicit recognition that traditional medical school training is not the appropriate training path for prescribing psychologists.

The initial legislation mandated objective evaluation of the PDP program. Because of its controversial nature, four different evaluations were conducted. This is a remarkable level of analysis for a program that only generated 10 graduates! These evaluations were consistently positive, and demonstrated that psychologists can be taught to prescribe in a manner that is safe, cost-effective, and distinctive from other professions (Newman, Phelps, Sammons, Dunivin, & Cullen, 2000).

TRAINING IN THE CIVILIAN SECTOR

The program was terminated, in part due to its controversial nature, in 1997. Even so, it energized efforts

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to train psychologists in the civilian sector. The first milestone in this movement was the founding of the Prescribing Psychologists' Register, or PPR, which began training psychologists in psychopharmacology in 1992. It is uncertain how many psychologists ultimately completed their training through PPR, as this information has never been made public. The task of estimating the number is also complicated by the fact that PPR established several different levels of training. Furthermore, the program was modified in response to historical events, one being the adoption of formal training guidelines by the American Psychological Association, and another being the legislation of training requirements for licensure as a prescribing psychologist in New Mexico. I have attempted on several occasions to estimate the number of psychologists who have completed at least 300 hours of postdoctoral training in psychopharmacology through PPR, and it is my best guess that somewhere between 250 and 400 psychologists meet this criterion. Though the number of psychologists who receive their training from PPR has clearly declined since then, PPR still holds the honor of having trained more psychologists in preparation for prescriptive authority than any other program.

TABLE 1
APA MODEL CURRICULUM FOR POSTDOCTORAL TRAINING IN PSYCHOPHARMACOLOGY

Topic	Hours
I. Neurosciences	
A. Neuroanatomy	25
B. Neurophysiology	25
C. Neurochemistry	25
II. Clinical and Research Pharmacology and Psychopharmacology	
A. Pharmacology	30
B. Clinical Pharmacology	30
C. Psychopharmacology	45
D. Developmental Psychopharmacology	10
E. Chemical Dependency and Chronic Pain Management	15
III. Pathophysiology	60
IV. Introduction to Physical Assessment and Laboratory Exams	45
V. Pharmacotherapeutics	
A. Professional, ethical, and legal issues	15
B. Psychotherapy/pharmacotherapy interactions	10
C. Computer-based aids to practice	5
D. Pharmacoepidemiology	10

Adapted from American Psychological Association Council of Representatives. (1996, August 12). *American Psychological Association recommended postdoctoral training in psychopharmacology for prescriptive privileges.* Washington, DC: Author.

The next milestone was the development of formal guidelines for postdoctoral training in psychopharmacology briefly mentioned in the previous paragraph. The American Psychological Association (APA) established a task force to develop such guidelines in 1995. The resulting document (APA Council of Representatives, 1996) was adopted as official APA policy in 1996, almost exactly 10 years before these words are being written.

The guidelines suggested a minimum of 300 hours of coursework. However, when the actual content areas for the coursework were listed, they totaled 350 hours, so the guidelines allowed some flexibility in the curriculum. Table 1 provides the recommended content areas.

The document containing the guidelines has proven extremely controversial in the ensuing years, for several reasons. First, they hold open the possibility of incorporating portions of the curriculum into an "expanded predoctoral curriculum" (APA Council of Representatives, 1996, p. 1). This was considered a problematic statement by those who were concerned about the possible impact of such a modification of the predoctoral curriculum on the training and identity of psychologists (e.g., Council of University Directors of Clinical Psychology, 2001; McGrath, Wiggins, Sammons, Levant, Brown, & Stock, 2004).

Second, the guidelines define a series of prerequisites to be completed before the psychologist is eligible to participate in postdoctoral psychopharmacology training. Most programs have instead elected to incorporate those topics into the programs themselves, to reduce the number of hurdles to be completed prior to matriculation. Third, the guidelines indicate "didactic courses will be administered for academic credit with careful attention to trainee evaluation. … The provider of this training program must be a regionally-accredited institution of higher learning or another appropriately accredited provider of instruction and training" (APA Council of Representatives, 1996, p. 3). These were problematic requirements at a time when the only training program available in the civilian sector (PPR) was a freestanding organization without links to a university. Finally, guidelines that were provided for a clinical practicum were ultimately found to be internally inconsistent and impractical (McGrath, 2004).

Despite these problems, the development of a generally accepted framework for training spurred the

development of new programs in the civilian sector.[1] The California School of Professional Psychology (now part of Alliant International University) began the first postdoctoral master's degree program in clinical psychopharmacology in 1998, creating a distinction between programs that offer a degree versus a certificate of completion. Within the next year, three new certificate programs and another master's program followed. The Georgia Psychological Association created a certificate program in partnership with the University of Georgia and Georgia State University. The other two certificate programs were The Psychopharmacology Institute in Nebraska, which was the first purely distance-based program, and a joint program between the Southwestern Institute for the Advancement of Psychotherapy and New Mexico State University. The new master's program was established at Nova Southeastern University in Florida. All these programs continue to exist except the Georgia program.

Though not directly related to issues of training, yet another important event was the founding of Division 55 of the APA in 1998. The divisions of the APA represent special interest groups within the larger association. Division 55 is the American Society for the Advancement of Pharmacotherapy, or ASAP, and is devoted to issues surrounding psychologists' increasing involvement in clinical psychopharmacology. The division has proven a particularly important locus for the discussion of training issues, and for strategizing about legislative efforts towards prescriptive authority.

One final milestone in the advancement of training in the civilian sector was the creation of a national examination for psychologists who have received training in clinical psychopharmacology. The American Psychological Association Practice Organization recognized that States that award psychologists prescriptive authority would need some mechanism for evaluating competence. In addition, given the diversity in the training programs that were emerging, some objective standard was considered useful for demonstrating mastery of the relevant material. The College of Professional Psychology, which is a branch of the Practice Organization that develops advanced credentials, was charged with the development of what came to be known as the Psychopharmacology Examination for Psychologists, or PEP. Developed in conjunction with a nationally recognized firm that specializes in the development of licensing examinations, the PEP consists of 150 items that tap a large variety of content domains. The full set of domains may be found in several places on-line, including http://www.rxpsychology.com/pep_knowledge_domains.pdf.

It was in the midst of this rapidly developing milieu that the Fairleigh Dickinson University Master of Science Program in Clinical Psychopharmacology was born. It was a process not without growing pains, however.

THE FOUNDING OF THE FAIRLEIGH DICKINSON UNIVERSITY PROGRAM

By 2000, a company called Global HealthEd was considering the possibility of a distance-based certificate program. Global HealthEd was one of several companies that had been created in affiliation with the University of Florida to create distance-based programs in health and education. Initially, Global HealthEd intended to offer the program in conjunction with the University of Florida Department of Psychology. They began by hiring Anita Brown, one of the graduates of the PDP program, as the Curriculum Director for the program, responsible for overall design of the curriculum.[2]

A training director who would be responsible for the ongoing academic direction of the program was identified from among the faculty of the department, materials were developed for the first semester, and extensive advertising to psychologists across the country

[1] Several other programs besides those described here were either announced, or actually offered for a brief period. The discussion here focuses on those programs that are still in existence, or that were particularly influential in terms of popularizing the idea of training psychologists to prescribe. Several other programs have been established since the Fairleigh Dickinson program, most notably a master's program at the Massachusetts School of Professional Psychology and a certificate program at Texas A&M University. At present, there are nine programs active, including five certificate programs and four master's programs.

[2] To date, four of the 10 PDP graduates have played an important role in the program: Anita Brown, Elaine Mantell, Morgan Sammons, and John Sexton. The last has served as a video presenter. The other three have served as video presenters and course instructors. In addition, Anita Brown continues to serve as a consultant to the program.

generated an initial class of 36 psychologists. The program was on-schedule to offer its first courses in September 2000. During the spring of 2000, the Department of Psychology experienced intense pressure from medical staff in the university to terminate its involvement. Threats included the termination of all referrals from the medical school to the departmental clinic. In short order, the Department of Psychology decided to withdraw from the program, barely months before the proposed start date.

Global HealthEd was understandably eager to find an alternative partner. At the time, the company happened to be in negotiations with Fairleigh Dickinson University in Teaneck, NJ, about several other programs, and mentioned the possibility of adding the psychopharmacology certificate program to the package. When I agreed to serve as the training director of the program, the university decided to accept the offer.

The program is distinctive in several ways. The program combines elements of traditional education with a distance format. Each course has an instructor who is responsible for its design and student progress. Each of the eight courses is divided into 5-8 modules. Each module incorporates 1-3 lectures, readings, and questions that reflect the main topics of the lecture.

Lectures for each course are videotaped using a special system that switches the focus back and forth between the lecturer and PowerPoint slides. Instead of having a single instructor present each lecture, lectures are assigned to individuals with expertise in the topic covered in that module. Students are provided the PowerPoint slides used in each lecture. Unlike some programs that simply film a class or the PowerPoint presentation, the result is much more consistent with the traditional combination of materials and personal presentation.

Courses are matched to the university's academic calendar, with a strict schedule for proceeding through courses. Each course was ultimately set to a 7.5-week schedule, so each two courses complied with the 15-week semester schedule established in New Jersey. This approach facilitates progress through the program more effectively than the traditional distance education approach of allowing the student to set the pace.

Student interaction is achieved primarily through a weekly on-line chat. These chats last an hour or more, and usually focus on clinical integration of course material. For example, a case may be presented that is associated with the current course topic. The students then spend an hour discussing the details of the case, diagnosis, and treatment issues.

Second, the program is not purely distance-based. It is recognized that some material is best presented in a face-to-face format, with training in physical examination being the best example. At the end of each of the five semesters, students meet for two days in what is called the Regional Interaction Session.

A third distinctive feature is the involvement of at least two faculty members in each course. The instructor is responsible for designing the course, building examinations, oversight of the course as it progresses, and addressing questions about the material at an academic level. Because the program is not geographically restricted, instructors can be selected primarily on the basis of expertise and teaching ability. All are either graduates of the PDP, or have full-time university appointments.

Each student is also assigned to a facilitator, who is primarily responsible for the chats and conducting the Regional Interaction Session. Facilitators are generally assigned a maximum of 15 students, so courses with more students are assigned multiple facilitators. Though the relationship between instructor and facilitator is similar to the traditional distinction between instructor and teaching assistant, the facilitators are well-qualified professionals, usually prescribing nurse practitioners with a specialty in mental health.

Yet a fourth distinction has to do with the length of the program. After receiving her training through the PDP, Anita Brown did not believe 300-350 hours offered sufficient training in psychopharmacology. As a result, the program was expanded to 480 hours. In particular 40% of the program is devoted to the practice of psychopharmacology. The curriculum may be found in Table 2.

The decision to expand the program was prescient. When prescriptive authority for psychologists became law in New Mexico, the legislature mandated at least 450 hours of classroom work. As a result, most programs in the country have expanded their curriculum to 450 hours. The Fairleigh Dickinson program is the only one that exceeds the New Mexico standard.

PROGRESS OF THE PROGRAM

The first class of 36 students began instruction in Fall

2000. The start was rocky, to say the least. It was Global HealthEd's first endeavor in healthcare education without the University of Florida, so they were working with an untested computer platform. The initial system proved so unstable that it was completely replaced twice within the first year. I had been training director for all of one month when courses began, and with almost no prior experience in distance education, I suddenly found myself dealing with both marketing such a program and trying to iron out its technical problems. Because of the size of the class, three facilitators were needed, and one of the facilitators was not hired until the semester was about to start.

By the end of the first year, Global HealthEd recognized the number of participants in the program was never going to meet their initial projections, and were hoping to reduce their involvement. At the same time, students had expressed their strong interest in converting the program to a master's degree despite the increased cost to them of doing so. Out of these two events came an agreement between Fairleigh Dickinson and its partner that the university would assume all responsibility for the program, and convert it to a master's degree. The conversion took well over a year to complete, but by the time the first group of students completed the coursework in Spring 2002, they were eligible to receive the degree Master of Science rather than a certificate for an additional charge. All agreed to do so except one. Since that time, all students have been accepted into the master's degree program.

One requirement for graduate programs in the State of New Jersey is some sort of capstone experience, usually met through a thesis or comprehensive examination. After some consideration, we thought requiring the PEP served several purposes. First, it met the state requirement. Second, since the program is distance-based, critics could question whether students are in fact completing their own work. The demands of the program make it unlikely that a student could recruit others to do the work for them, but given the controversial nature of the training, it was thought better to include safeguards. Third, the PEP was unlikely to succeed unless a reasonable number of individuals took the examination.

Requiring the PEP has proven to have been a good decision. Preliminary data suggest that about 30% of those taking the PEP fail on their first attempt. This has been a source of some controversy. Since all individuals who are completing the PEP have already achieved

TABLE 2
CURRICULUM FOR THE FAIRLEIGH DICKINSON UNIVERSITY M.S. PROGRAM

Course	Hours
Biological Foundations of Psychopharmacological Practice I	48
Biological Foundations of Psychopharmacological Practice II These courses present an integrated approach to the study of primary body systems (respiratory, cardiovascular, renal, hematologic/immunologic, gastrointestinal, endocrine, reproductive, musculoskeletal, and dermatologic) that correlates fundamental knowledge of the anatomy, physiology, and pathophysiology of a specific body system with the clinical applications (health assessment, physical examination, laboratory assessment) pertaining to that system. Exploration of clinical medicine concepts will utilize a problem-solving approach. The goals of these two courses are to enhance the student's recognition of signs and symptoms of medical conditions requiring collaboration with and referral to other health professionals and to provide knowledge about the psychological, biological and medical correlates of disease. Medical sequelae of psychotropic agents and familiarity with standard medical treatment of common disease states are addressed.	48
Neuroscience This course focuses on the anatomy and physiology of the nervous system, beginning at the cellular level. Knowledge of principles of neurochemistry, neuroendocrinology, and neuropathology will serve as a foundation for the understanding of neurotransmitter systems and their role in the etiology and treatment of mental disorders.	48
Neuropharmacology This course introduces the knowledge base pertaining to pharmacology and psychopharmacology. It includes continued study of neurotransmitter systems and other factors in the psychopharmacological treatment of mental disorders, as well as an introduction to classes of psychotropic medications.	48
Clinical Pharmacology This course presents major classes of drugs (excluding psychotropics) and their uses in clinical settings. It includes an examination of the social, cultural, and behavioral aspects of prescribing medications.	48
Professional Issues and Practice Management This course reviews issues in prescribing from the perspective of a professional healthcare provider. Legal and ethical issues, as well as standards of care ranging from informed consent to documentation, are addressed. Interprofessional relationships and aspects of collaborative practice, as well as practice enhancement strategies such as computer-based aids, will provide learners with a solid foundation for the continued integration of psychopharmacology into their practices.	48
Treatment Issues in Psychopharmacology: Affective Disorders	48
Treatment Issues in Psychopharmacology: Psychotic Disorders	48
Treatment Issues in Psychopharmacology: Anxiety Disorders	48
Treatment Issues in Psychopharmacology: Other Disorders This treatment-focused series provides students with access to virtual practicum experiences through didactic information and case studies addressing specific categories of mental disorders. Each case addresses the following: diagnosis/differential diagnosis; etiology/biological basis of disorder; psychopharmacological treatment options, including mechanism of action, side effects, adverse reactions, polypharmacy, drug interaction, and patient education. The integration of treatment strategies as well as the empirical basis for treatments is presented. Disorders covered will include the mood disorders, psychotic disorders, anxiety disorders, cognitive disorders, substance abuse and chemical dependency, chronic pain, Post-Traumatic Stress Disorder, and Attention Deficit Hyperactivity Disorder, as well as others.	48

licensure as a psychologist, and have completed a training program of at least 300-450 hours, some have considered this an excessively high failure rate. The failure rate is likely to become a greater source of contention later, when more people are taking the examination as part of their application to become a prescribing psychologist. For the moment, most people remain unaware of this issue. To date, the Fairleigh Dickinson University (FDU) passing rate has hovered around 80%, suggesting our training is at least as good if not better than that of programs that use traditional teaching methods. Even so, given the difficulty of the PEP, students have an option of an oral examination with three faculty members if they fail the PEP twice; this option for completing the Master Degree has so far only been necessary for one student. The oral examination is also available for students residing in foreign countries, for whom requiring the PEP would be prohibitive.

A second important revision was the addition of a practicum. Despite confusion about the appropriate standards for such an experience, students were eager to begin to apply their learning upon completion of the program. As a result, a practicum experience was created as an optional component. Finding physicians in their community willing to serve as supervisors has proven difficult to many students. As a result, only about 15 participants in the program have opted to pursue a practicum after completion of coursework. These have occurred in a variety of settings, including nursing homes, private practices, and psychiatric facilities. About half have involved a psychiatrist supervisor, with the other half divided across a variety of medical specialties. Feedback from the physician supervisors has been consistently exceptional; in every case, by the end of the year-long practicum the supervisor has rated the psychologist ready for independent practice.

At present, 46 students are taking courses in the FDU program. Another 85 students have already completed courses, and 26 of those have taken the PEP. Over the six years of the program, 59 individuals have opted to withdraw at some point in their training. This represents an average of 31 new students each of the six years the program has existed. Where other programs have opened their classes to other professionals, or even to graduate students, as a means of maintaining enrollment, every student in the FDU program has been a doctoral-level psychologist. Almost all have been licensed, though several individuals have been allowed to start the program while they complete the licensure process. Participants have been spread across the entire United States and several foreign countries as well, including Israel, Spain, and Korea.

A particularly important sign of the program's success is the growing number of state psychological associations that recommend the program to their members. It is recommended by the Maryland Psychological Association, and is now the official training program of the Tennessee, Georgia, and Alabama Psychological Associations. These relationships have been important, as they funnel students into the program, while assuring the state association that their members are receiving a quality education.

I consider it an important component of my position not only to deal with the parochial needs of my program, but to play a role in the advancement of psychologists' involvement in pharmacotherapy on both the educational and political levels. In 2000, I was appointed chair of the APA Division 55 Education and Training Committee. During the next several years, we undertook a variety of projects, including the creation of a spreadsheet that provides a direct comparison of the existing training programs. Though a little dated, this is still available at http://www.division55.org/Pages/ProgramComparisons.xls. Those activities ultimately led to my nomination as president of the division, in which position I am currently serving. I am also member of a task force soon to be convened by APA with the purpose of updating their guidelines concerning training curricula in psychopharmacology.

The Fairleigh Dickinson Master of Science Program in Clinical Psychopharmacology has gone from its troubled start to become one of the most respected programs of its type in the country. It has been exciting for us and for our students to participate so intimately in the next phase in the evolution of professional psychology. I have been consistently impressed by the thoughtful manner in which our students pursue their training, and the issue of how to become prescribing professionals without falling prey to the forces that led to the completely biological focus in modern psychiatry. That quality has allayed my initial concerns about whether this is the right choice for psychology. I am hopeful that psychologists in the United States are on the verge of creating a new model of prescribing, using medications as an auxiliary tool to

psychosocial interventions rather than as a primary or sole modality. It has been an honor to be a part of that process.

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