

APPENDIX 6

Pharmacology Graduate Program

A. Description of the NIH-supported Pre-doctoral Program in Pharmacology and Toxicology

B. Ph.D. Graduates of the Pharmacology and Toxicology Department

APPENDIX 6A
PRE-DOCTORAL TRAINING PROGRAM IN PHARMACOLOGY & TOXICOLOGY

This description is condensed from a 2001 application to NIH for the renewal of the long-standing Pre-doctoral Pharmacological Sciences Training Program and cast in the past, rather than the present tense. Much of the detailed information in the application was presented in Tables, which have been omitted but are still referred to in the text. This application was not successful, which is not surprising because NIH Study Sections often terminate training programs if the PI has changed, particularly if the previous PI had been in charge for many years.

8. Resources

The facilities for the training of graduate students in pharmacology at West Virginia University were excellent. All major equipment items and facilities needed were available within the Robert C. Byrd Health Sciences Center or the Mary Babb Randolph Cancer Center of West Virginia University. The collaborative nature of this training program allowed its students and faculty to utilize a wide variety of resources in different departments. These included:

1. Many different types of equipment were available to all graduate students for cell culture, molecular biology, enzyme studies, electrophysiology, pharmacokinetics, microwell assays, protein analysis and purification, isotope use, histology, HPLC, organic synthesis, nuclear magnetic resonance, and electron spin resonance in the individual laboratories of the 21 training faculty.
2. Departmental facilities were also available for trainee's use including cold rooms, tissue culture rooms, darkrooms, a machine shop, and student computer labs.
3. The Health Sciences Center maintained excellent animal holding rooms and sterile surgery suites.
4. The Health Sciences Library is located in the building and provided electronic access to over 300 journals and 30 medical databases.
5. Six core facilities maintained equipment and provided technical assistance for the entire Health Sciences Center [Details of each greatly condensed]:

- A. The Recombinant DNA Core Facility included all the equipment needed for state-of-the art molecular biological techniques. A full-time technician operated the facility and provides training services.
- B. The Image Analysis Facility in the Department of Neuroscience provided equipment for a variety of traditional and confocal imaging and subsequent analysis of the results. A full-time technician was available for consultation.
- C. The Flow Cytometry Facility of the Mary Babb Randolph Cancer Center maintained a flow cytometer for cell cycle analysis with 1- and 2-color imaging. Assistance was available
- D. The BioScreen Technology Center in the Department of Biochemistry and Molecular Pharmacology provided high sensitivity, rapid throughput technology to all students and faculty, and included a macroarray imaging system and an automated system for high dynamic range analysis of fluorescence images.

- E. The Mass Spectrometry Center was situated in the Department of Biochemistry and Molecular Pharmacology. Its resources included a Finnegan SSQ 7000 single-stage quadrapole MS with HPLC and electrospray and Excalibur-Spectra ID data analysis software. A full-time technician staffed the center.
- F. The Computational Chemistry & Molecular Modeling Laboratory is found in the School of Pharmacy. It includes three silicon graphics OCTANE computers networked to an SGI processor with remote access to NCSA.

In addition to providing physical facilities, the WVU School of Medicine provided the Pharmacological Sciences Training Program with stipends for four graduate students and paid the majority of each participating faculty member's salary from state funds. Several WVU Foundation funds were used to provide equipment and supplies for laboratories in which Program students were trained; additional funding was available for the hosting of seminar speakers as well as for the purchase and repair of laboratory equipment (Table 1).

9. Research Training Program Plan

1. Background

A recent study by the National Academy of Sciences has identified a need for a multidisciplinary approach to graduate training programs in the biomedical sciences (ref: Addressing the Nation's Changing Needs for Biomedical and Behavioral Scientists, NAS, 2000). Such an approach emphasizes the connections among the basic sciences themselves and between the basic sciences and other fields such as chemistry, behavioral sciences, and clinical medicine. Integrative training programs are needed to produce pharmacologists who are able to adapt to the rapidly changing interdisciplinary nature of biomedical research today (The Pharmacologist 40: 32 - 37, 1998). Such training is also required for a career in the pharmaceutical industry. Although molecular mechanisms form the basis of much of modern drug discovery, an understanding of classical pharmacology is required in order to assess the clinical effectiveness of a drug in an animal model. Currently there is a shortage of scientists with training in classical pharmacology (The Scientist 13 [22], 1999). The Pharmacological Sciences Training Program at West Virginia University provided its students with a strong background in both classical and molecular pharmacology; its curriculum and the research of its faculty reflected the connections among the basic sciences and other disciplines. Research opportunities were available for students in genomic and molecular mechanisms as well as whole-animal techniques.

We redesigned our graduate training program to adapt to the changing field of pharmacological sciences and to take advantage of recent organizational changes in the WVU Health Sciences Center. The Dean of the School of Medicine reorganized the basic sciences departments at the WVU Health Sciences Center in July 2001. In doing so, the Department of Pharmacology and Toxicology was dissolved and its members joined the departments of Anatomy, Physiology, and Biochemistry. As a result, the Pharmacological Sciences Training Program was housed in the latter department and included seven of the faculty previously in the program and 14 additional researchers from the other basic science departments in the Schools of Medicine and Pharmacy. Graduate students in any participating department could enter the program. Admissions and administration of funding were done through the Department of Biochemistry and Molecular Pharmacology. The program received institutional funding for graduate stipends, equipment and supplies, seminar speakers, and equipment repairs as described in Section 8 and Table 1.

The Pharmacological Sciences Training Program offered a rich selection of research opportunities in the study of biochemical, molecular, and biophysical mechanisms as well as organ, organ system, and whole organism function. The total number of faculty members, predoctoral students, and postdoctoral trainees in each participating department was shown in Table 2. Each program faculty member maintained an active, funded research laboratory, and most had external funding (Table 3). In addition, each participating department had a variety of sources of training support available for its students (Table 4). Additional centers and facilities that strengthen to the Pharmacological Sciences Training Program included the Mary Babb Randolph Cancer Center, the

Blanchette Rockefeller Neurosciences Institute, and the National Institute of Occupational Safety and Health [Detailed descriptions omitted].

The Program had been continuously supported since 1959 and had awarded a total of 127 Ph.D.s by 2001. It was under the direction of Dr. William Fleming from 1960 until his retirement in 1999. It had been particularly successful in producing well-trained scientists for academia, industry, and government laboratories. Of those who have graduated since 1985, 13 were employed in academia in 2001, 13 in industry, 4 in government, 3 in private research or consulting firms, 3 in clinical medicine, and 10 in postdoctoral or residency positions.

Summary:

The Pharmacological Sciences Training Program at West Virginia University had many qualities which make it a successful training program: the ability to adapt to the changing educational needs of today's students and employers, a faculty which was actively engaged in a wide variety of research areas and collaborations, a large amount of intramural and extramural funding for graduate education, and a long history of producing highly skilled scientists. The Program's relationship with several important research centers and its multidisciplinary curriculum emphasized the connections between the basic sciences and provided a particularly fruitful environment for the training of graduate students.

2. Program Plan

a. Program Direction

Dr. Jeannine Strobl would have served as director of the Pharmacological Sciences Training Program. She has been a member of the Department of Pharmacology and Toxicology since 1983. Her research in the field of breast cancer growth regulation is both novel and clinically relevant. She had been continuously funded since joining the department and was the PI on three grants and co-PI on two grants with graduate students in 2001, and had been active in several federal grant review panels (see her Biosketch). Dr. Strobl would have given 10% effort to the direction of this program.

Dr. Karen Woodfork would have served as Assistant Program Director. Previously, as an assistant professor at Washington and Jefferson College, she coordinated and/or designed curricula for six undergraduate courses, contributed to the writing and administration of a Howard Hughes Medical Institute grant for undergraduate education, and served as an advisor for over 30 students. Dr. Woodfork would have given 10% effort to serve as mentor for the Pharmacological Sciences Training Program students in their first year.

The Pharmacological Sciences Training Program Committee met several times per year and jointly made all major decisions. This committee consisted of Dr. Strobl, Dr. Woodfork, the Graduate Admission Committee (Dr. Salati, Dr. Graber, Dr. Mahaney, and Dr. Wonderlin), and representatives from each participating department. The Committee was responsible for the selection of graduate applicants, modification of the curriculum or requirements, annual evaluation of students, and determination of actions such as student termination from the Program. Each year, the Committee brought in at least one outside consultant to assess the strengths and weaknesses of the Program. This

consultant spent the day with the trainees, gave a seminar, met with the training faculty, and provided a written evaluation of the Program.

b. Program Faculty

The faculty of the Pharmacological Sciences Training Program came from a wide variety of disciplines. The primary departmental affiliation, role, and percent effort of each member are shown in Table 5. The research interests of the program faculty were described in Table 6. All students trained by the program faculty members in the last 10 years were listed in Table 7 (this Table is available as an appendix).

Throughout the years there had been an exceptional amount of interaction and collaboration among the faculty of the training program. There were many examples of faculty members working together on projects, publishing manuscripts together, and jointly sponsoring graduate or postdoctoral research. The fifth edition of *Modern Pharmacology* (to be published in 2002) was a collaborative venture among members of the program faculty, graduates, former faculty, and individuals at other institutions.

c. Proposed Training

The program usually attracted applicants who hold a BA or BS in chemistry, biochemistry, biology, or pharmacy. Some applicants entered with a MS, MD, or DDS. Because these applicants came from different backgrounds, our course requirements were somewhat flexible. All entering graduate students in biomedical sciences took a common first-year curriculum in 2001. After this, they chose an area of emphasis and one of six graduate training programs. The curriculum for the Pharmacological Sciences Training Program is listed in Table 8. Three courses reflected the multidisciplinary nature of the program and are therefore listed below (the first two were part of the common first-year curriculum).

1. Introduction to Biomedical Research. This course focused on research facilities, research ethics, and government regulations involving the use of radioisotopes, experimental animals and biohazardous agents.
2. Cellular & Molecular Biochemistry I and II. This course was designed to introduce the basic concepts and techniques of biochemistry and was taught by faculty from all basic science departments. It was offered for the first time in 1994-1995 and was very successful. The course topics and faculty presenting were shown in Table 10.
3. Physiological Pharmacology I and II. This course, new in 2001, was specifically designed for graduate students and replaced Medical Pharmacology in our curriculum. Material was presented from the level of macromolecules to organ systems; drugs were studied as their mechanisms of action impact upon physiological processes. The course topics and faculty presenting were shown in Table 9.

The Pharmacological Sciences Training Program required high academic standards. Students were required to have a minimum GPA of 3.0 in all coursework by the end of the second year. Two qualifying exams were used to test the students. A 2.5-day written exam was taken at the end of the first year; this exam assessed the student's mastery of the information to which he/she had been exposed in course work and other academic formats. A pass was required to continue in the Ph.D. program; at the committee's discretion, a student could be admitted to a M.S. degree program. An oral exam at the end of the second year covered all course work and the background knowledge related to the student's dissertation work. A dissertation committee was chosen at the end of the second year. Annual committee meetings allowed the faculty to foster student's growth as a scientist and were used to assess the written research proposal, to evaluate annual progress reports, and to conduct the student's oral dissertation defense.

During the first year, each student in the Pharmacological Sciences Training Program selected three faculty members with whom he/she spent 2-8 weeks in research rotations, which aid the student in selecting a laboratory and mentor. In order to maintain equity among all the Health Sciences departments participating in this program, a student had to choose a primary advisor who was a member of both the department that admitted him/her and the Pharmacological Sciences Training Program.

Because verbal communication skills are so critical for a successful career in the sciences, students were required to participate in a journal club and seminar series. Students attended one of three journal clubs for their entire training period: Developments in Therapeutics, Cellular Regulation, or Protein and Membranes. Students made one presentation per semester and, beginning in the second year for three consecutive semesters, students provided a written critique of three journal club articles before the oral presentations. Students also presented four seminars during their graduate training: a research proposition in the spring of their second year, a seminar on a subject unrelated to their research in their third year, a presentation in the Van Liere Graduate Research Competition, and the final dissertation defense. In addition, students were expected to acquire 2 credits of teaching experience in which they acted as the primary instructor (a Teaching Practicum offered by Dr. Paternostro in the Department of Physiology and Pharmacology was available to meet this requirement).

APPENDIX 6B

Department of Pharmacology and Toxicology

West Virginia University

Ph.D. Graduates

1962-2007

Note: Graduates from 1962-2001 are from a Table included in the 2001 application for renewal of the predoctoral training grant

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1962		
1. Schmidt, James L. (West Virginia University) *West Virginia Univeristy, M.D.		Deceased, 1995; formerly in private practice, Harrisville, WV
2. Westfall, Thomas C. (West Virginia University)	Karolinska Institute, Stockholm	Professor and Chairman, Department of Pharmacological and Physiological Sciences, St. Louis University, St. Louis, MO
Ph.D. 1964		
3. Morey, Emily R. (West Virginia University)		Deputy Division Chief, Life Science Division, NASA, Ames Research Center, Moffett Field, CA
4. Egle, John L. (Shepherd College)	Bowman-Gray, School of Medicine	Professor of Pharmacology, Medical College of Virginia (Retired)
5. Mason, Walter H. (West Virginia University)	Tulane University	Unknown
6. Stump, John M. (West Virginia University)		Associate Medical Director, Clinical Research and Development; Administrator, Medical Research Dupont-Merck Pharmaceutical Company
7. Tsai, Tsui-Hsien (National Taiwan University)	Department of Pharmacology, Harvard University, School of Medicine	Director, U.S. Clinical Research, Operations, Merrell Pharmaceutical Company, Kansas City, MO (Retired)
Ph.D. 1965		
8. Currie, Gustavus, N. (University of Maine) *University of Maine, M.S.	Harvard University, School of Medicine	Senior Toxicologist, President AT & C Labs, Inc., Presque Isle, ME

Note: Table of graduates from 1962-2001 is from the 2001 pre-doctoral training grant application

Name	Postdoctoral Experience	Present Title and Location
<i>Ph.D. 1965 Continued</i>		
9. Cline, William H. (Davis and Elkins) *West Virginia University, M.S.	Department of Pharmacology, West Virginia University	Assistant Executive Officer, American Society for Pharmacology and Experimental Therapeutics
10. Hudgins, Patricia (West Virginia University) *West Virginia University, M.S.		Professor of Pharmacology, West Virginia College Osteopathic Medicine, Lewisburg WV (Retired)
<i>Ph.D. 1967</i>		
11. Davis, Scott H. (West Virginia University)	Department of Pharmacology, University of Minnesota	Metropolitan State Community College, Minneapolis, MN
12. Ford, George D. (West Virginia University) *University of Iowa, M.S.	Department of Physiology and Biophysiology, University of Rochester, NY	Professor of Physiology, Medical College of Virginia, Virginia Commonwealth University
13. Akester, John M. (Ohio State University) *University of Cincinnati M.S.	Department of Pharmacology, University of Iowa	Senior Clinical Research Monitor, Lederle Labs, American Cyanamid Co.
<i>Ph.D. 1968</i>		
14. Peach, Michael J. (Shepherd College)	Cleveland Clinic	Deceased, 1992; formerly Associate Dean for Research and Professor of Pharmacology, University of Virginia
15. Stahl, Philip D. (West Liberty State College)	Department of Molecular Biology, Vanderbilt University	Professor and Head, Department of Cell Biology and Physiology, Washington University, School of Medicine, St. Louis, MO
16. Westfall, David P. (Brown University)	Department of Pharmacology, Oxford University	Vice President for Academic Affairs, University of Nevada, Reno, NV; Professor, Department of Pharmacology

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1969		
17. Clark, Joseph D. (West Liberty State College)	Department of Pharmacology, University of Missouri	Consultant, BMF&R (retired as Vice President, Regulatory and Scientific Affairs, Warner-Lambert)
18. Kovacic, Beverly (Fenn College)	Department of Pharmacology, University of Minnesota, School of Medicine	Retired; formerly Research Associate, Lafayette Clinic, Detroit, MI
19. Furner, Raymond (West Virginia University)	Department of Pharmacology, University of Tübingen	Retired; formerly Assoc. Director, GC/MS Lab, Dept. of Psychiatry, University of Alabama, Birmingham, AL
20. McCarthy, Jeane (University of Miami, FL), University of Miami, M.D.	Department of Pharmacology, University of Miami, School of Medicine	Neonatologist, All Children's Hospital, St. Petersburg, FL (Part-time)
Ph.D. 1970		
21. Smith, David J. (Bethany College)	Department of Pharmacology, University of Iowa	Professor of Pharmacology and Toxicology, West Virginia University
22. Azzaro, Albert J. (Wheeling College)	Department of Pharmacology, University of Colorado	Director of Clinical Research, Covance Center for Somerset Labs, Tampa, FL
23. Colasanti, Brenda K. (West Virginia University)	Department of Pharmacology, Mt. Sinai University	Professor Emeritus of Pharmacology and Toxicology, West Virginia University
24. Knych, Edward (Loyola) *Creighton University, M.S.	Department of Pharmacology, University of Wisconsin	Associate Professor, Department of Pharmacology, University of Minnesota (Duluth), School of Medicine
25. Wagner, Lorin (Hofstra University)	Department of Pharmacology, University of Colorado	Associate Medical Director, Schering-Plough Corporation
Ph.D. 1971		
26. Mawhinney, Michael G. (Grove City College)		Professor of Urology and Pharmacology and Toxicology, West Virginia University

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Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1971 Continued		
27. Corey, Sharon Perrine (Grove City College)	Department of Microbiology, West Virginia University	Assistant Professor, University of Pittsburgh, School of Pharmacy
28. Wenger, Galen T. (Goshen College)	Department of Pharmacology, University of Colorado, Department of Psychiatry, Harvard University, School of Medicine	Professor of Pharmacology and Toxicology; Director, Division of Pharmacology, University of Arkansas for Medical Sciences, Little Rock, AR
29. Hunt, Walter A. (Bethany College)	National Institute Alcohol Abuse, NIH, Bethesda, MD	Branch Chief, Neuroscience Behavioral Research Branch, Division of Basic Research, NIAAA, Rockville, MD, retired
30. Lantz, Christin H. (University of Maryland) *University of Virginia, M.D.	Department of Pharmacology, University of Virginia	Deceased, 1979
Ph.D. 1972		
31. Smith, Carol G. (West Virginia University)		Formerly Associate Professor of OB-GYN, University of Texas Health Science Center, San Antonio (left because husband changed position)
32. Stevens, James (Penn State University)	Department of Pharmacology, Hershey Medical School	Coordination and Scientific Affairs, Toxicology Department, CIBA-Geigy Inc., Basel, Switzerland
33. Foley, Dennis J. (Fordham University)	U.S. Army, Walter Reed AMC	Director, Regulatory Liaison, Lederle Labs, Pearl River, NY
34. Stawarz, Robert J. (University of Pittsburgh)	Department of Pharmacology, Vanderbilt University	Boots Pharmaceuticals
35. Carter, George (Frostburg State University)		Vice President, Immunoscience Research, Abbott Labs, Chicago, IL
36. Stevens, Paul (Northeastern University)	Department of Medicine, UCLA, School of Medicine	Research Scientist, Amgen Corporation, Thousand Oaks, CA

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Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1973		
37. Lee, Tony Jer-fu (Taipei, Medical College)	Department of Pharmacology, UCLA, School of Medicine	Professor, Department of Pharmacology, Southern Illinois, School of Medicine, Springfield, IL
38. Hartman, Elizabeth (West Virginia University)		Deceased, 1975
Ph.D. 1974		
39. Taylor, David A. (Alderson-Broadbush College)	NIGMS Pharmacological Research Associate, NIH (PRAT Fellow)	Professor and Chair, Department of Pharmacology, E. Carolina Univ. School of Medicine
40. Rowe, James N. (Morris Harvey College)	Division of Clinical Pharmacology, University of Virginia, School of Medicine	Senior Toxicologist, Technical Assessment Systems, Inc., Washington, DC
41. Keenan, Edward J. (Creighton University) *Creighton University, M.S.	University of Oregon Primate Center	Associate Professor of Pharmacology, Surgery, Medicine; Director, Hormone Receptor Lab, University Hospital; Assistant Dean, University of Oregon School of Medicine, Portland, OR
Ph.D. 1976		
42. Dieringer, Cindy (Grove City College) *University of North Carolina, M.D.	NIEHS, Research Triangle Park, NC	Medical Director, Doctor's Care, Forest Acres, Columbia, SC
43. Hoover, Donald B. (Grove City College)	Lab Clinical Science, NIMH (PRAT Fellow)	Professor, Department of Pharmacology, East Tennessee State University, James H. Quillen College of Medicine, Johnson City, TN
44. Bierkamper, George (Lock Haven State College)	Johns Hopkins University, School of Environmental Health	Deceased, 1988; formerly Professor of Pharmacology, Univ. of Nevada, Sch. of Medicine

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1976 Continued		
45. Zepp, Edwin Andrew (West Virginia University)	Research Associate, Kirksville College of Osteopathic Medicine	Senior Regulatory Medicine Associate, St. Peters, MD
46. Baylor, Michael (Thiel College)		Chemistry & Life Sciences, Research Triangle Inst., Research Triangle Park, NC
Ph.D. 1977		
47. Blume, Cheryl De S. (West Virginia University)		Vice President, Somerset Laboratories, Tampa, FL
48. Robinette, Chester Lee (West Virginia University) *University of Illinois, DVM	School of Veterinary Medicine, University of Illinois	Associate Professor of Pharmacology and Toxicology, North Carolina State University, School of Veterinary Medicine, Raleigh, NC
49. Sharifi-Hossaini, Kh. (Shiraz University, Iran)		Member, Department of Medical Affairs, Solvay Pharmaceuticals, Atlanta, GA
Ph.D. 1978		
50. Abel, Peter (University of Wisconsin)	Department of Pharmacology, University of Iowa Medical Center	Associate Professor of Pharmacology, Creighton University, Omaha, NE
51. Gerthoffer, William (Waynesburg College)	Department of Medicine, Baylor University, School of Medicine; Department of Physiology, University of Virginia, School of Medicine	Professor and Acting Chair, Department of Pharmacology, University of Nevada, Reno, NV
52. Demarest, Keith (Wheeling College)	Department of Pharmacology, Michigan State University, School of Medicine	Assistant Director, Endocrine/ Reproduction Research, Ortho Pharmaceuticals, Raritan, NJ
53. Trush, Michael (California State University)	NIH, Bethesda, MD	Professor, Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD

Name	Postdoctoral Experience	Present Title and Location
<i>Ph.D. 1978 Continued</i>		
54. Wince, Leon (Fairmont State College)	Department of Pharmacology, University of Kansas, School of Pharmacy	Associate Professor, Department of Biological Sciences, College of Osteopathic Medicine, Ohio University, Athens, OH
55. Wilson, Mark (University of Maryland) *University of Maryland, M.S.	Scripps Research Institute	Professor, Dental Research Center, UMDNJ, New Jersey Dental School, Newark, NJ (deceased)
56. Schein, Lonnie (University of North Carolina)	Harvard University, School of Public Health	Southern Research Institute, Birmingham, AL
<i>Ph.D. 1979</i>		
57. Neubauer, Blake (University of California-Irvine)	Department of Anatomy, University of Colorado	Senior Research Scientist, Eli Lilly & Co., Indianapolis, IN
58. Udeinya, Joseph (Brandeis University)	NIH, Bethesda, MD	Associate Professor of Anesthesiology and Pharmacology, Howard University
<i>Ph.D. 1980</i>		
59. Torphy, Theodore (University of Wisconsin)	Division of Pharmacology, University of California, LaJolla	President of a biotech company
60. Martin, Louis (University of Maryland)	Tennessee Neuropsychiatric Institute, Vanderbilt University, Nashville, TN	Manager, Biological Pharmacology, CIBA-Geigy Corporation
61. Donovan, Michael (University of California, Berkley)		Professor and Chair, Department of Biology, Southern Utah State College, Cedar City, UT

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1981		
62. Waalkes, Michael (Hope College)	Department of Pharmacology, University of Kansas Medical Center, Kansas City, KS	Chief, Inorganic Carcinogenesis Section, Lab. Comparative Carcinogenesis, National Cancer Institute, Ft. Dietrick, Frederick, MD
63. McNulty, Michael (University of Pittsburgh)	CIIT, Research Triangle Park, NC	Senior Toxicologist, Burroughs-Wellcome, Research Triangle Park, NC
64. Lindamood, Charles II (San Diego State University)	CIIT, Research Triangle Park, NC	Director of Pharmacology and Toxicology, Forest Laboratories, Inc.
65. Ross, Stephen (University of Delaware) *Northeastern, M.S.; Marshall University, M.D.	Albert Einstein College of Medicine Institute of Neurotoxicology, Bronx, NY	Unknown
66. Pekoe, Gary (Aurora College)		President and CEO, Arkios BioDevelopment International
Ph.D. 1982		
67. Mariotti, Angelo (Grove City College) *West Virginia University, D.D.S.	NIH, Bethesda, MD	Chair, Department of Periodontology, The Ohio State University College of Dentistry, Columbus, OH
68. Schulz, John (Florida Atlantic University) *West Virginia University, M.D.		Ophthalmologist, Wenatchee Valley Clinic, Wenatchee, WA
69. Schoepp, Darryle (University of North Dakota)	Department of Pharmacology, University of Kansas	Research Advisor, Central Nervous System Research, Eli Lilly & Co., Indianapolis, IN
70. Wetzel, Lawrence (Villanova University) *Villanova University, M.S.		Senior Toxicologist, Agricultural Division, CIBA- Geigy Corporation, Greensboro, NC

Name	Postdoctoral Experience	Present Title and Location
<i>Ph.D. 1982 Continued</i>		
71. Hogaboom, G. Kurt (Texas Tech University)	School of Pharmacy, West Virginia University	Associate Director, SmithKline Beecham Pharmaceuticals
72. Levitt, Blanche (Lehigh University)	Department of Pharmacology, University of Arizona, Tucson, AZ	Senior Investigator, BioPharmaceuticals, Philadelphia, PA
73. Vallner, Debra (Thoma) (West Virginia University) *Golden State University, MBA		Vice President, Program Management, Inhale Therapeutic System, San Carlos, CA
<i>Ph.D. 1983</i>		
74. Monroe, Philip (Purdue University)	Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ	Senior Research Scientist, Battelle Memorial Institute, Columbus, OH
75. Barone, Suzanne (Gannon University)	Department of Pharmacology and Toxicology, West Virginia University	Pharmacologist, Consumer Product Safety Commission, Washington, DC
76. Curto, Karen (Chatham College) *Bryn Mawr, M.S.	Department of Biochemistry, University of Pittsburgh School of Medicine; Department of Pharmacology, West Virginia University	Research Associate, Institute on Aging, Johns Hopkins University, Baltimore, MD
77. Thornton, Mark (Bloomsburg State) *West Virginia University, M.D.		Medical Officer, FDA, Washington, DC
<i>Ph.D. 1984</i>		
78. Cassis, Lisa (West Virginia University)	University of Wurzburg, Germany; Department of Pharmacology, University of Virginia	Associate Professor, Division of Pharmacology and Experimental Therapeutics, University of Kentucky School of Pharmacy, Lexington, KY

Name	Postdoctoral Experience	Present Title and Location
<i>Ph.D. 1985</i>		
79. Ice, Kathleen (West Virginia University)	Department of Pharmacology, University of Washington	Assistant Director II, New Drug Development, Pfizer Inc.
80. Carter, Gregory (Hamline University) *West Virginia University, M.D.		Associate Professor, Neurology, Southwestern Medical School, Dallas, TX
<i>Ph.D. 1986</i>		
81. Gaido, Kevin (University of Notre Dame)	CIIT, Research Triangle Park, NC	Senior Research Fellow, CIIT, Research Triangle Park, NC
82. Sauers, Leonard (University of Delaware) *University of San Francisco, M.S.		Associate Director, Human and Environmental Safety Division, Procter & Gamble Co., Cincinnati, OH
83. Liccione, John (Florida Atlantic University)	Department of Radiation, Biology and Biophysics, University of Rochester School of Medicine, Rochester, NY	Toxicologist, Gaithersburg, MD
<i>Ph.D. 1987</i>		
84. Gaido, Marcia (University of Notre Dame)	Department of Physiology, University of North Carolina School of Medicine, Chapel Hill, NC	Research Assistant Professor, Department of Medicine, Renal Division, University of North Carolina, Chapel Hill, NC
85. Staats, Dee Ann (West Virginia Wesleyan College)	Baylor University, Houston, TX	Toxicologist, WV Dept. of Environmental Protection, Charleston, WV
<i>Ph.D. 1988</i>		
86. Thomas, Michael (West Virginia University) *West Virginia University, M.D.	Department of Biochemistry and Biophysics, Washington University, St. Louis, MO	Assistant Professor, Endocrine Division, Department of Medicine, University of North Carolina, Chapel Hill, NC

Name	Postdoctoral Experience	Present Title and Location
<i>Ph.D. 1988 Continued</i>		
87. Donohue, Susan (Iowa State University)	NIH, Bethesda, MD	Pharmacologist, Toxicology and Pharmacology Branch, National Cancer Institute
88. King, Andrew (Philadelphia College of Pharmacy and Science)	Smith, Kline & French Labs.	Senior Investigator, Department of Molecular Virology and Host Defense, SmithKline Beecham Labs.
89. Droy, Brad (University of Missouri)	LSU School of Veterinary Medicine, Baton Rouge, LA	President, Toxicological & Environmental Associates, Inc., Baton Rouge, LA & Columbus OH
90. Brown-Croyts, Laurie (University of Pittsburgh)	Institutes for Neuroscience, University of Texas, Austin, TX	Associate Professor of Pharmacology, Northeastern Ohio University, College of Medicine, Rootstown, OH
91. Doak, Carolyn (University of Texas) *University of Texas, M.D.		Unknown
<i>Ph.D. 1989</i>		
92. Biser, Peggy (Frostburg State University)	Department of Pharmacology and Toxicology, West Virginia University	Research Instructor, WVU Pharmacology and Toxicology
93. Holliday, Tammy (Randolph-Macon College)	Marine Science Department, Texas A&M, Galveston, TX	Scientist, Coastal Zone Laboratory, Texas A&M, Galveston
94. Thomas, Dori (Grove City College)	Washington University, St. Louis, MO	Medical Resident, University of North Carolina School of Medicine

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1990		
95. Vrana, Sheila (Lamport) (Emory University)	Department of Behavioral Medicine, West Virginia University	Director, Sponsored Research, Wake Forest University School of Medicine
96. Williams, Gene (Gannon University)	NIH, Bethesda, MD	Pharmacologist, Hoechst Marion Roussel, Inc., Bridgewater, NJ
Ph.D. 1991		
97. Gould, Errol (University of Massachusetts)	Department of Physiology, University of Virginia, Charlottesville, VA	Clinical Scientist, SmithKline Beecham Pharmaceuticals
98. Freeland, Thomas (West Liberty State College) *West Virginia University, M.S.	Department of Molecular and Cell Biology, Penn State University, University Park, PA	Associate Professor of Biology, Walsh University, Canton, OH
Ph.D. 1992		
99. Wijeweera, Jayanthika (University of SriLanka) *University of Oxford, M.S.	Department of Toxicology, University of Arizona, Tucson, AZ	Research Associate, Dept. Cell Biol. & Anatomy, U. Arizona
100. Roberts, Mark (University of Glasgow) *West Virginia University, M.D.	Yale University	Medical Resident, York, PA Medical Center
101. Yang, Hui-Min (Human Medical College) *Simon Fraser University, M.S.	EPA, Research Triangle Park, NC	Research Associate, ALOSH
Ph.D. 1993		
102. Sheng, Yaohua (Fourth Military Medical School, China, M.D.)	Department of Ophthalmology, Columbia College of Physicians and Surgeons	Associate Research Scientist, Dept. of Ophthalmology, Columbia University

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1993 Continued		
103. Hershman, Kenneth (University of Massachusetts)	Department of Pharmacology, University of Colorado, Department of Pharmacology, University of Pittsburgh	Research Scientist, Curagen Corp., New Haven CT
104. Antonini, James (West Virginia University)	Department of Occupational Health, Harvard University	Staff Scientist, NIOSH
105. Woodfork, Karen (Rice University)	Department of Pharmacology, University of Virginia	Adjunct Associate Professor, Dept. of Biochemistry and Molecular Pharmacology, West Virginia University, Morgantown, WV
106. Gabr, Rhonda (North Carolina State University) *West Virginia University, M.D.	Department of Pharmacology, West Virginia University	Resident, Duke University, Dept of Neurology
107. Urban, Mark (Grove City College)	Department of Pharmacology, University of Iowa	Research Investigator, Dept of Pharmacology, University of Iowa
Ph.D. 1994		
108. Cratty, Michael (Penn State University) *West Virginia University, M.D.		Medical Resident, Penn State University Medical Center, Hershey, PA
109. Gibb, Tracy (University of Utah)	Mary Babb Randolph Cancer Center, West Virginia University	Resident, WVU School of Medicine, Morgantown, WV
Ph.D. 1995		
110. Blake, Terri (Alderson Broadus College)	NIOSH, Morgantown, WV	Staff Scientist, Madigan Army Hospital, Tacoma, Washington
111. Malanga, C.J., III (Swarthmore College)	Medical Student, West Virginia University, M.D./Ph.D. Student	Clinical Fellow in Neurology, Brigham & Women's Medical Center, Harvard Univ.

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1996		
112. Caveney, Scott (West Virginia University) *West Virginia University, M.D.	Medical Student, West Virginia University, M.D./Ph.D. Student	Medical Resident, Medical College of Georgia
113. DiMatteo, Michael (Duquesne University)		Medical Liaison, SmithKline Beecham
114. Lawrence, Tracey Elaine (Warner) (Bethany College)	ALOSH-NIOSH	Staff Scientist, Mylan Laboratories
115. Maize, David (Duquesne University)		Assistant Professor, Wilkes University, School of Pharmacy, Wilkes-Barre, PA 18766
Ph.D. 1997		
116. Dowland, Lara (Frizzell) (Plymouth State)	Brigham and Women's Hospital (Harvard), Boston, MA	Research Scientist, Schleicher & Schuell
117. Klimatcheva, Ekaterina (Sochenov Medical Academy, Moscow)	Research Associate, Cancer Center, University Rochester, Rochester, NY	Continuing
118. Hawranko, Alyssa (Gannon University)	Research Associate, Department of Pharmacology and Toxicology, West Virginia University and Department of Pharmacology, University of Pittsburgh	Medical Information Specialist, Astra Pharmaceuticals
Ph.D. 1998		
119. James Culhane (Washington and Jefferson College)		Assistant Professor, Wilkes University, School of Pharmacy, Wilkes-Barre, PA 18766
120. Molnar, Lance (West Virginia University)	PRAT Fellowship, NIH	Postdoctoral Fellow, Deptt. Of Pharmacology & Therapeutics, Univ. of Florida, Gainesville

Name	Postdoctoral Experience	Present Title and Location
Ph.D. 1999		
121. Kim, Julie (Wesleyan Univ) *Brown University, M.F.A.	Medical Student, West Virginia University, M.D./Ph.D. Program	Residency in Pediatrics, Yale
122. Harnagea-Theophilus, Eugenia (Al.I. Cuza University, Romania) *WVU, M.S., Chemistry		Research Toxicologist Avon Corporation, Suffern, NY
123. Wearden, Peter (Georgetown University) *West Virginia University, M.D.	Currently completing residency in Surgery, West Virginia University	Advanced fellowship, Surgery, Univ. Of Pittsburgh
124. White, David (West Virginia University)	Department of Pharmacology Emory University, Atlanta, GA	Continuing
125. Smith, Jeff (West Virginia University)		Toxicologist, Bertek Pharmaceuticals, Research Triangle Park, NC
Ph.D. 2000		
126. Johnston, Richard (University of Pittsburgh)	Harvard School of Public Health	NIOSH, Adjunct Associate Professor, Physiology and Pharmacology Department, WVU
Ph.D. 2001		
127. Griffin, William (University of North Carolina)	University of South Carolina	Continuing

(Undergraduate Institution)

*Graduate and/or Professional Training

Note: The following list is based on information from Dr. Bob Craig's *The History of Pharmacology and Toxicology at West Virginia University, 2007*

<u>Name (graduation year)</u>	<u>Post-doctoral Experience</u>	<u>Present Title and Location</u>
128. Taylor, Michael (2001) (West Virginia University)	NIOSH	Toxicologist, Aftom Chemicals, Richmond, VA
129. Melkounian, Zaroui (2002)		Cornell University
130. Slessarava, Janna (2003) (Moscow State University)	Univ North Carolina, Chapel Hill	Unknown in 2007
131. Ma, Hongzheng (2003) (Shandong Medical University, China)	Duke University	Pioneer-Hybrid, Johnston, Iowa
132. Sikora Erin (2003-4?) (University of Pittsburgh)		Toxicologist, Naval Medical Serices Corps, U. S . Navy
133. Brower, Stacey Rhodes (2004) (Washinton and Jefferson)		Staff Scientist, Precision Therapeutics, Inc Pittsburgh, PA
134. Zhou, Qun (2005?) (Naking College of Medicine, China)	Mary Babb Randolph Cancer Center	Johns Hopkins University
135. Rahim-Beta, Rayana (2005-6?)		Florida
137. Jing, Ti (2007) (Tianjin Medical College, China)		Unknown in 2007