In 1983, a paper written by clinical professor Heyward Hull, PharmD, and colleagues from academia and industry appeared in the American Journal of Pharmaceutical Education making the case that pharmacy was changing and that pharmacy education needed to change with it.

Pharmacists were expanding beyond their traditional roles as dispensers of drugs and were taking positions on school faculties and in the pharmaceutical industry. In his paper, titled “Training the ‘Clinical Scientist’ Through a Combined Industrial-Academic Fellowship,” Hull argued that with the increasing interest in drug-related research by clinical pharmacists, schools needed to focus on medical, legal and regulatory issues associated with clinical drug trials that were not being taught in pharmacy graduate programs. At the same time, pharmaceutical companies were demanding professionals with more advanced skills and knowledge in clinical research and drug development that, at the time, were not a part of the pharmacy school curriculum.

And so, Hull and faculty colleague Wayne Pittman ('72 BSPharm, ’78 MS) from the UNC Eshelman School of Pharmacy created the postgraduate fellowship program to meet the needs of students, industry, and academia. Today, the program has grown to include industry-sponsored fellowships in drug development and clinical research and in pharmacokinetics/pharmacodynamics in addition to academic fellowships in oncology, HIV pharmacology and heart failure.

“This program’s been around a long time thanks to the dedication of our faculty and the longstanding commitment of our industry partners,” said Bob Dupuis, PharmD, a clinical associate professor and the fellowship program’s director. “The program has flourished, even in some challenging economic times.”

“For those of us in research, it’s a gift”

Initially the School partnered with Burroughs Wellcome (now GlaxoSmithKline) to offer a program in clinical drug research and drug development methodology by using pharmaceutical industry, with university and hospital research facilities as the classrooms. As fellows went through that program —which was the first of its kind in the country — and into industry, they shared their experience with their employers. More companies, such as PPD, United Therapeutics, Quintiles and King Pharmaceuticals, have joined in, allowing the School to expand the fellowship program. Another fellowship was added for this coming year with biopharma company UCB.

“The School is really invested,” Dupuis said. “And on the industry side, there’s great support. Many of our industrial partners are former fellows or scientists who have worked with our fellows.”

The program has 15 to 20 fellows at any given time. Each year, eight to 12 fellows are chosen to enter the program from nearly 100 applicants. Fellows receive two year appointments. During the first year in the program, fellows are primarily engaged in clinical research and complete some specialty coursework in experimental design and data analysis, as well as in pharmacokinetics. Industry fellows spend the second year working at the companies that sponsor their fellowships, where they learn first-hand about clinical drug development. Academic fellows continue at the UNC Eshelman School of Pharmacy during the second year, focusing on clinical research in their specific area.

“We build a foundation for them in clinical research,” Dupuis said. “They gain hands-on experience and learn how to run clinical trials. Clinical research is a complicated process that starts with the study concept and proceeds from protocol development to IRB approval, subject recruitment, study conduct, data analysis, presentation of results, and finally publication of the results. The fellow is involved in every step.”

During the two-year program, fellows give back to the School in a number of ways. Principally, they provide faculty with eager professionals who want to learn about research and bring with them a variety of educational backgrounds and different perspectives.

“For those of us in research, it’s a gift,” said Herb Patterson, PharmD, who is vice chair for research and graduate education in addition to overseeing the academic heart failure fellowship. “We recruit and work with some incredibly talented pharmacists who come into the program — bright, enthusiastic young people — and teach them about research. In exchange, they share their talents with us for two years.”

The School’s partners in industry also benefit. While there is certainly an altruistic component to companies’ involvement, they also are
Jill Henry, a drug development fellow, counsels Carlton Spivey at the UNC Heart Center at Meadowmont in Chapel Hill.
looking to identify top-notch employees. The fellowship program provides fellows with a year of academic experience and then a year of work experience at the company.

“Scientists in industry will always be doing cutting edge research,” Patterson said. “Because of the program we offer, I believe fellows completing our program will always have opportunities in industry even though there may be fewer clinical research positions available. I’d like to think our fellows will be very competitive for these positions. There’s always going to be a need for well-trained clinical scientists.”

Answering industry’s needs
Throughout the program’s history, the focus has been on PharmD-trained fellows although there have been some with other degrees. This year, Dupuis said, the program has a MD fellow with the UCB fellowship.

However, while the program has changed to adapt to the times, it’s never deviated from its initial mission — to train the next generation of clinical scientists.

“We’ve been doing this for 30 years,” Patterson said. “The program continues to evolve and we have been very successful. And if you look at where the fellows have gone — most in industry, some in academia, some in regulatory — they’re strong proponents of the program and our best ambassadors. We have a strong national reputation so we attract the best candidates for our program. We clearly have one of the premier fellowship programs in the country!”

Fellowships Offer Multiple Disciplines to Serve Industry and Academia

The Clinical Research and Drug Development Fellowship seeks to provide an orientation to all aspects of the drug development process, including experience in developing, reviewing, and composing protocols, study reports, and regulatory submissions and exposure to the selection, set-up, and monitoring of clinical sites participating in Phase I/II/III and/or pharmacokinetic studies.

Pharmacokinetic/Pharmadynamic Fellows participate in clinical pharmacokinetic, pharmacodynamic, transport and/or metabolism studies with faculty at the School and with members of the Clinical Pharmacology group at Quintiles Inc. or with the Clinical Pharmacokinetics, Modeling and Simulation group at GlaxoSmithKline. These fellows design, initiate and conduct pharmacokinetic/pharmacodynamic studies and develop skills in pharmacometric data analysis and presentation in reports, regulatory submissions, and published manuscripts.

The Oncology Fellowship is intended to develop independent research skills for a career in academics. Experience with clinical trials (phase I pharmacokinetic, multicenter phase II-IV), preclinical model systems (cell culture), analytical techniques (HPLC) and molecular techniques (Westerns and PRC) are available. Fellowship activities include protocol development with IRB submission, data collection and analysis with pharmacokinetic and/or statistics programs, and oral and written presentation.

HIV Pharmacology Fellows are prepared to become independent researchers in anti-infective clinical pharmacology. Specific research areas include antiretroviral pharmacokinetics/pharmacodynamics and pharmacogenetics. These fellows will gain experience in all areas of translational research, from grant-writing to manuscript submission and are expected to present research findings at scientific meetings.

The Heart Failure Pharmacotherapy Fellowship provides extensive research experience in cardiovascular pharmacotherapy, with a special emphasis on heart failure and cardiovascular pharmacokinetics and pharmacodynamics. A multidisciplinary team approach including medicine, pharmacy, and nursing is applied to research and management of heart failure.
30 Years of Fellows: Where Are They Now?

Debbie Montague '81 ('77 BSPharm, '81 MS, '06 PharmD), Senior Clinical Specialist, UNC Hospitals
Lucy Allen '82 ('79 BSPharm), Project Manager, Quintiles
Jim Mannion '83, President, CEO, and Founder, Galleon Pharmaceuticals
Karl Donn '83 ('85 MS, '87 PharmD), Vice President, Drug Development, Parion Sciences
Judy Bryson '83
Jill Slater '84
Michael Dalton '84, Founding partner, Gnomon Group, FDA liaison for 22nd Century Limited
Michael King Jolly '84, Senior Vice President of Drug Development Partnerships, NovaQuest
Linda Winship Manning '85 ('82 BSPharm), Section Head for Home Care Product Safety and Regulatory Affairs, Procter & Gamble
Ann Talton Lee '86 ('84 PharmD), Director, GlaxoSmithKline
Ramadas Balasubramanian '87
Brenda Jameson '87
Karol Krueger LaCroix '87 ('83 BSPharm), Project Manager, GlaxoSmithKline
Betty Hussey '88 ('83 BSPharm, '87 PharmD), Director of Clinical Pharmacology, GlaxoSmithKline
David Bremseth '89, Consultant, Independent Medical Device
Ingrid Lewis '90 ('88 PharmD), Vice President Informatics, Medkeeper
Tom Lampkin '90, Director of Clinical Development Cancer Metabolism Drug Development Unit, GlaxoSmithKline
Carl Roland '91, Senior Director of Neurosciences Medical Development, King Pharmaceuticals
Jeanne M. Bertsch '91
Doug Figg '92, Head, Molecular Pharmacology Section, Senior Scientist, National Cancer Institute, Medical Oncology Board
Brian Wagner '92, Freelance Account Supervisor Consultant pharmaceutical advertising and marketing industry
Pamela Barrett Sarver '92 ('89 PharmD)
Shelly Gray '92, Professor of Pharmacy, University of Washington
Becky Nagle '93
Ed Liao '93, Consultant, Boehringer Ingelheim
Jyoti Patel Jankowsky '93
Stephen O'Quinn '93, Director of Marketing for Wellbutrin-XL, GlaxoSmithKline
David Hermann '93, Senior VP Early Development & Pharmacometrics, Great Lakes Drug Development, Inc
Patricia Warner Jacob '93, Senior Regional Medical Scientist II, Clinical Development and Medical Affairs North America, GlaxoSmithKline
David Martin '94, Senior Vice President of Drug Development and Regulatory Affairs, Tobira Therapeutics, Inc.
George Foose '94
Jacqueline G. Nolen '94, Assistant Professor, Feik School of Pharmacy, University of the Incarnate Word
Lynn Fitzgerald '94
Kristen Jones Letrent '94, Director of Global Medical Communications and Medical Affairs, Pfizer Oncology
Michael J. Koronkowski '94, Clinical Assistant Professor of Pharmacy Practice, UIC
Kellie Schoolar Reynolds '94, Deputy Director, Division of Clinical Pharmacology 4, Office of Clinical Pharmacology, Center for Drug Evaluation & Research, FDA
Margaret Britto '94, Senior Research Pharmacokineticist, Clinical Pharmacology, Quintiles
Jamie Blose '95, Clinical Drug Development, Edelex Therapeutics, Vice President, NovaQuest
Penny Shelton '95
Denise Rhoney '95, Department of Pharmacy Practice Associate Professor, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University
Patrick Wire '95, Director of Regulatory Affairs, GlaxoSmithKline
Valerie Brooks '95 ('89 BSPharm, '93 PharmD)
Katy H.P. Moore '95 ('93 PharmD), Director of Clinical Pharmacokinetics Modeling and Simulation, GlaxoSmithKline
Stephen Letrent '95 ('98 PhD), Clinical Oncology, Vice President, Asset Team Leader, GlaxoSmithKline
Deborah Copeland '96
Gary Hoel '96
Melissa Ellis '96, Research Scientist, GlaxoSmithKline
Paul Meisner '96, Senior Director, King Pharmaceuticals
Tracy Eatmon Thomason '96 ('92 BSPharm, '94 PharmD), Adjunct Professor, UNC Eshelman School of Pharmacy
Mary Beth Mann Wire '96, Clinical Pharmacokineticist, GlaxoSmithKline
Ben Lee '97
Kristin M. Williamson '97 ('94 PharmD), National Director of Neurology and Psychiatry, US Medical
Rob Kustra '97, Associate Director of Development Sciences, GlaxoSmithKline
Elizabeth Migoya '97 ('87 BSPharm, '95 PharmD), Director of Early Stage Development, Merck Research Lab
Yazdi K. Pithavala '97, Director of Clinical Pharmacology, Pfizer
Ed Brewer '98, Medical Science Liaison, Medical Affairs, Otsuka American Pharmaceutical, Inc.
Jodi Decker '98 ('96 PharmD)
Amy Mewborn Meadowcroft '98 ('93 BSPharm, '95 PharmD), Director, Clinical Development, Business Lead for Clinical Study Planning Initiative, GlaxoSmithKline
Jeannine McCune '98 ('95 PharmD),

Clinical Development and Medical Affairs, Pfizer

If you’d like to be notified of reunion plans or if you can help us get in touch with other past fellows, contact the PAA at paa@unc.edu.
Associate Professor, Department of Pharmacy, University of Washington

Katie Graham Lyons ’98, Owner and Director of Medical Content, Consulting Services, LLC

Jeffrey Fischer ’98, Manager of PK Automation Services, Pharsight, Inc.

Joi Odishaw Dunbar ’98, Director of Clinical Pharmacology, Infinity Pharmaceuticals

Kristine Radomski Crews ’98, Translational Research Laboratory Director, Pharmaceutical Sciences Department, St. Jude Children’s Research Hospital

Angela Donahue ’99, Director of Product Management, PPD, Inc.

Donald Graff ’99, Clinical Research Scientist, Celerion

Katie Graham ’99

Michael Kotlyar ’99, Associate Professor, Department of Experimental and Clinical Pharmacology, University of Minnesota *

Jodi Weidler ’99, Senior Director, Oncology, Biomarker Clinical Development/Medical Affairs, Monogram Biosciences

Kim Parnell ’99 (’94 BSPharm, ’96 PharmD), Associate Director of Clinical Research, Johnson & Johnson Pharmaceutical Research

Odin Naderer ’99, Director of Infectious Diseases, Discovery Medicine, GlaxoSmithKline

Tracy Allen Fischer ’99, Manager of U.S. Regulatory Affairs, GlaxoSmithKline

Min Song ’99

Paul N. Mudd ’99, Director of Clinical Pharmacology Modeling/Simulation, GlaxoSmithKline

Sarah Roberts ’00

Stephanie Faucette ’00 (’95 BSPharm, ’97 PharmD), Clinical Pharmacokinetic Manager, Sepracor *

Jo Ellen Rodgers ’00 (’94 BSPharm, ’96 PharmD), Clinical Assistant Professor, UNC Eshelman School of Pharmacy

John Rublein ’00 (’91 BSPharm, ’97 PharmD), Clinical Scientist Abbott Virology, Abbott Laboratories

Karl Gotzkowsky ’00, Senior Director of Product Development, United Therapeutics

Kim Hollar ’00 (’92 BSPharm, ’97 PharmD), Clinical Science Manager in Virology, Abbott Laboratories

Matthew Lamb ’00

Chec Ng ’00, Principal Scientist in Department of Discovery Medicine and Clinical Pharmacology, Bristol-Myers Squibb *

Julie Kim ’01

Michael Watkins ’01, Manager of Clinical Development MDC Clinical Respiratory U.S., GlaxoSmithKline *

Monica Johnson ’01

Naumann Chaudry ’01, Director of Medical Affairs, Pfizer *

Stacy Shord ’01, Oncology Group for FDA *

Christina Hill-Zabala ’01, Manager of Global Strategic Planning of Stiefel, GlaxoSmithKline

Scott Pescatore ’01, Region Europe Brand Lead-Oncology, Novartis

Mary Jayne Kennedy ’01 (’95 BSPharm), School of Pharmacy, Virginia Commonwealth University

Daphne H. William ’01, Senior Clinical Pharmacokineticist, GlaxoSmithKline *

Bindu P. Murthy ’01, Assistant Director, Clinical Pharmacokinetics, Clinical Pharmacology and Experimental Medicine, Johnson & Johnson Pharmaceutical Research and Development *

Heather Tangeman ’02

Sheri Holyer Arndt ’02, Senior Medicate Writer, Abbott Laboratories *

Craig R. Lee ’02 (’00 PharmD, ’06 PhD), Assistant Professor, UNC Eshelman School of Pharmacy

Sunila Reddy ’02, Associate Director of Clinical Research, Liver Diseases, Gilead Sciences

Seth Berry ’02, Clinical Pharmacologist, Quintiles *

Susan Ford ’02, Clinical Pharmacologist, GlaxoSmithKline *

Kimberly Dombrock-Lavendar ’03

Kevin Haynes ’03, Adjunct Professor of Epidemiology, University of Pennsylvania School of Medicine

Michael Lim ’03, Therapy Area Director, Immuno-Inflammation and Respiratory CPSSO, GlaxoSmithKline

Aliou Ousmanou ’03, Senior Project Manager, PPD, Inc.

Alison Lyke ’03 (’01 PharmD), Dermatology resident, MUSC

Amanda H. Corbett ’03, Clinical Assistant Professor, UNC Eshelman School of Pharmacy

Kevin Laliberte ’03, Senior Director of Product Development, United Therapeutics Corp.

Christine M. Brandquist ’03, Senior Manager of Clinical Pharmacology, Celerion *

Leslie Davidson Kalvass ’04

Lisa Patel ’04 (’01 PharmD), Health Services Research Consultant with Family Health International

Jennifer Park ’04, Clinical Program Lead,

Fellows and faculty members gather at a Durham Bulls game in July 2010.
When Linda Winship Manning ('82 BSPharm) decided to change career paths late in her undergraduate years, she turned to a fellowship at the School to help her prepare for conducting clinical research in industry. Five years later, when she had to leave the pharmaceutical industry, her experience from that same fellowship again paid off.

Manning says she knew back in junior high that she wanted to be a pharmacist but couldn’t decide which area of pharmacy she wanted to pursue. By the end of her time as an undergraduate in Chapel Hill, she was leaning toward industry and wanted to get into sales and marketing, but she needed 100 more internship hours the summer before she was to take the pharmacy boards. Her sister, who was a physician in Richmond, Va., helped get her into a pharmacy-services clinic there. That experience opened Manning’s eyes to the opportunities with clinical pharmacy.

“I became very interested in disease management and the interaction with patients,” Manning said. “My preceptor began talking to me about using my clinical skills and interests by pursuing a PharmD degree. By the completion of my hours with him he convinced me.”

After receiving her PharmD at the Medical College of Virginia, Manning returned to Chapel Hill for the School’s fellowship in drug development and clinical research. She split her time between classes in Chapel Hill and working at Burroughs Wellcome (now GlaxoSmithKline) in Research Triangle Park.

“I spent a year there writing protocols and monitoring studies for new drugs,” Manning said. “Since it was jointly with Burroughs and UNC, I had the opportunity to go to UNC and take classes. I also wanted to make sure I wanted to go into industry, so I did one last clinical rotation in the ICU at UNC Hospital my last month and decided I wanted to get a job in industry. The fellowship showed me that there was a way to bridge my newfound interest in clinical pharmacy with my desire to work in the pharmaceutical industry.”

Following her fellowship in 1984 and 1985, Manning spent four years as a clinical project coordinator for A.H. Robins Co. in Richmond. She then relocated to Austin, Texas, when her husband enrolled in graduate school. With no industry positions for her to pursue in Austin, her fellowship training helped land her a position in academia — on the faculty of the University of Texas’ College of Pharmacy, where she was a clinical assistant professor. While there, Manning also directed a Phase I drug studies unit.

“But I’d done my fellowship in clinical research and worked, I was adequately trained to take on a role like that,” she said. “I felt like it was difficult to get a job in industry and clinical research without experience,” she said. “I felt very fortunate to have the fellowship. It gave me a great heads up over others applying for a job. I knew what the job was, and I’d had a year’s worth of training under my belt.”

In 1994 Manning made the move back into industry, joining Procter & Gamble, where she has worked for the past 17 years, most recently as section head for home care product safety and regulatory affairs.
Hiba L. Tappouni '06 ('04 PharmD),
Senior Medical Project Manager, Gilead
Sciences
Kristen D. Rollins '06 ('04 PharmD),
Clinical Research Scientist Corp., United
Therapeutics
Christine M. Walko '06, Clinical
Assistant Professor, UNC Eshelman School of
Pharmacy
Nabil Uddin '06, Associate Director of
Clinical Programs, Seaside Therapeutics
Lakshmi S. Wasist '06, Clinical
Pharmacokineticist, Clinical
Pharmacokinetics/Modeling & Simulation,
GlaxoSmithKline
Todd E. Dumas '06, Clinical
Pharmacokineticist, Quintiles
Larry W. Buie '07 ('05 PharmD),
Pharmacy Resident, UNC Hospitals
Michael J. Kardas '07, Global Project
Lead Manager, Stiefel, GlaxoSmithKline
Julie Bruner Dumond '07, Research
Assistant Professor, UNC Eshelman School of
Pharmacy
Manoli Vourvahis '07, Associate
Director, Clinical Pharmacology-Infectious
Disease (HIV), Pfizer
Ted Shih '07, Clinical Scientist,
Genentech
Amar A. Mehta '07, Lawyer/Associate,
Jones Day/Pharmaceutical Patent Litigation
Grant W. Hogeland '07, Pharmacokineticist II, Clinical PK/PD, Early
Clinical Development, Quintiles
Kan Lu '08, Postdoctoral Research
Fellow, UCLA
Sunita Paul '08, Site Manager, Johnson
and Johnson Pharmaceutical Research and
Development
Thomas H. Cho '08 ('06 PharmD)
Katarina Ilic '08 Assistant Professor,
Dept. of Pharmacology, School of Pharmacy,
University of Belgrade, Serbia
Sarah J. Schrieber '08, Clinical
Pharmacologist, FDA
Ngoc “Betty” Ngo '08, Research
Scientist, Quintiles
Sandra L. Goss '08, Clinical
Pharmacokineticist, Abbott Laboratories
Almasa Bass '09, Senior Scientist,
Pharmacokinetics and Clinical Research, King
Pharmaceuticals
Research and Development, Inc.
Shriya Bhushan '09
Tedi Soule '09, Clinical Quality

Assurance Auditor, PPD
Ryan M. Criste '09, Research Scientist, MedImmune
Angela Y.C. Yu '10, Post-approval phar-macovigilence group, PPD, Inc.*
Dustan P.M. Byrd '10, Research
Scientist, PPD, Inc.
Ninh (Irene) La-Beck ('08 PharmD),
Assistant Professor, Texas Tech University
HSC
Amanda E. Jones Jenkins '10 ('08
PharmD), Research Scientist, United
Therapeutics
Colleen M. Lemmon '10 Clinical
Development Manager of Oncology,
GlaxoSmithKline
John S. An '10 ('01 PharmD), Regulatory
Intelligence Manager of Global Regulatory
Affairs, PPD
Kyle J. Ellis '10, Clinical Science Manager
for Pharmaceutical Strategic Initiatives, PSI
Yingxin Li '10
Ahsan N. Rizwan '10, Lead
Pharmacokineticist Clinical Pharmacokinetics
and Pharmacodynamics, Quintiles
Kevin Brown ('07 PharmD), Pharmacist,
UNC Hospitals
Noelia Nebot, 2nd year fellow with
GlaxoSmithKline
Austin Combest, 2nd year fellow with
PPD
Justin Koteff, 2nd year fellow with

GlaxoSmithKline
Meredith Howell ('09 PharmD), 2nd
year fellow with United Therapeutics
Bryant Tran, 2nd year fellow,
GlaxoSmithKline
Mark Walsh, 2nd year fellow in academic
hematology and oncology
Rachael Kendrick, 1st year fellow with
Quintiles
Teodora Dumitrescu, 1st year fellow with
Quintiles
Catherine Denton, 1st year fellow with
GlaxoSmithKline
Erick Borg, fellow in Clinical Research
and Drug Development
Jessica L. Adams, HIV Pharmacology
Fellow with UNC Eshelman School of
Pharmacy
Jill Henry, fellow in Clinical Research
and Drug Development
Savannah Steele, current fellow

Key: * denotes last known employment
To update your record or one of a friend
or colleague, email paa@unc.edu.

Fellows Day 2008