

Science and people are my two passions. My favorite classes have always been biology, chemistry and communications. This made it a little difficult to decide upon a major when I was applying for college. While the three disciplines were intriguing, I disliked the idea of having to pick one over the others; then I began to explore the field of pharmacy. Once I realized that pharmacy was essentially biology, chemistry and communications molded into one discipline, I knew I had discovered my career. Four years later, I am still excited that my future profession is to help people while studying science. With each additional pharmacy class, I become even more committed to my future as a pharmacist.

Pharmacy is the science of medications. In accord, a pharmacist is a person who provides patient counseling concerning illnesses and their medications. While this notion represents the majority of a pharmacist's responsibilities, there is another role which a pharmacist fills, namely, a consultant. With the explosion of news reporting and media information, consumers have become exposed to a greater amount of health information. From medication side effects to contaminated drinking water, consumers have been bombarded with a vast amount of information with little help in separating fact from fiction. In turn, people consult the most available health professional, their pharmacist, for answers.

As pharmacists, we are prepared to address both the medication and environmental concerns of our patients. While the majority of our classes are focused on drugs and illnesses, we are also educated in the field of toxicology. Toxicology is the study of the adverse effects of chemicals on human beings. Training in toxicology also allows pharmacists to assess the risk of human exposure to harmful chemicals. While pharmacy students typically receive only two credits of toxicology class work, I intend to advance my knowledge in this field. Admission to the University Scholar Program would allow me to expand my study of toxicology within the pharmacy curriculum. As a University Scholar Graduate, I will become a leader through the

development of a new avenue within pharmacy practice. Advanced classes and research in toxicology will aid in my pharmacy career by providing me with greater knowledge and skills for helping my patients with non-medication and environmental concerns.

Upon admission to the University Scholar Program, I will follow the enclosed plan of study which will include graduate toxicology courses and independent research as a supplement to my present pharmacy studies. One concern is that the pharmacy curriculum was designed with little flexibility due to licensure requirements. Thus far, I have adapted my research and elective work to the strict pharmacy curriculum. Therefore, I am confident in my success as a University Scholar with the addition of five graduate courses and continued research to an already rigorous plan of study. My previous course work and research experiences have prepared me for the challenges within my University Scholar proposal.

Each summer I have and will continue to seek research experiences to further develop my investigative and analytical skills. I spent the summer of 1998 as a research intern at the University of Connecticut Health Center Graduate School in the Department of Pharmacology studying the biochemical mechanisms of human prostate cancer. This past summer at the pharmaceutical company, Bristol-Myers Squibb, my research focused on identifying additional infectious organisms susceptible to a new quinolone antibiotic. Importantly, this research will lead to new treatment alternatives for infectious diseases. I intend to transfer to the Clinical Research Department at Bristol-Myers Squibb this upcoming summer. The additional training in toxicology that I will gain as a University Scholar will greatly benefit me in my clinical research.

My commitment to enhancing my knowledge of toxicology began in the Spring 1998 semester with the commencement of my undergraduate Honors research in the laboratory of Professor Steven Cohen. The focus of his research is the adverse effects of chemicals on the liver

and kidney. My research project focuses on the anticancer drug, cisplatin. While cisplatin is highly effective for the treatment of a variety of cancers, it also injures the kidney. Researchers have demonstrated that cisplatin depletes cellular levels of glutathione, a compound which is responsible for protecting the cell from toxic molecules. It has been theorized that lower glutathione levels are the primary cause for the kidney damage seen in cisplatin patients. To prevent cisplatin-induced kidney damage, compounds which elevate glutathione levels in the kidney have been investigated. I have tested a glutathione-elevating agent, Ribose Cysteine (RibCys), to determine its effectiveness in ameliorating cisplatin-induced kidney damage in mice. I have been able to demonstrate the ability of RibCys to partially protect the kidney from cisplatin. I have presented my research results at the 1999 Frontiers for Undergraduate Research Program, the 1999 Pharmacy Student Research Conference and at both the 1998 and 1999 UCONN School of Pharmacy Research Symposium. Through research, I have developed laboratory and analytical skills which have already benefited my pharmacy studies.

While my Honors dissertation research is near completion, experimental questions remain and further research is warranted. For example, the measurement of glutathione concentrations and kidney enzyme levels, a marker of injury, will enable a better characterization of the activity of RibCys. This research will provide insight for more detailed studies of the mechanism underlying the action of RibCys protection. An understanding of how RibCys protects the kidneys will allow for the design of more beneficial treatments. Additional potential cisplatin antagonists will also be studied and compared with RibCys. This research will lead to the development of safer alternatives for cancer treatment. Such research will provide direction for future clinical studies.

I expect to graduate as an Honors Scholar in May 2000 with my Bachelor of Pharmacy Studies. I would like to be a University Scholar for the remainder of my Bachelor of Pharmacy

Studies curriculum, but more importantly for the Pharm.D. program which I expect to complete in May 2002. I will add graduate classes to the following semesters: Spring 2000, Fall 2000 and Spring 2001. Due to the heavy course load for the next two semesters, I will perform minimal research until Spring 2001. The graduate classes will greatly enhance my appreciation and perspective of the research. I will continue my research into the final year of the Pharm. D. program.

My classes for Spring 2000 would not be greatly altered by my admission to the University Scholar Program due to the minimal opportunity for electives in the final semester of the Bachelor of Pharmacy Studies Program. However, I am planning to include two graduate classes; PHAR 374 Principles of Safety Evaluation and BIOL 311 Enzyme Structure and Function. The first class will focus on the testing required in drug development and how research is utilized to assess risk from exposure to drugs and other chemicals. BIOL 311 will broaden my knowledge of biochemistry and cell biology. Since chemicals often injure cells through alterations in enzyme functioning, this class will be relevant to my study of toxicology.

Current	Spring 2000	Additional Proposed Classes	
PHRM 222 Endocrine/ GI Systems	3 cr	PHRM 374 Principles of Safety Evaluation	1cr
PHRM 246 Dispersed Systems	3 cr	BIOL 311 Enzyme Structure and Function	3 cr
PHRM 208 Pharmacy Law & Ethics	3 cr		
PHRM 254 Therapeutics II	3 cr		
PHRM 207 Pharmaceutical Care			
PATH 297 Pathobiology	3 cr		
PHRM 247 Dosage Forms Prep Lab II	1 cr		
PHAR 297W Honors Thesis	3 cr		
Total Semester Credits:	19cr	Total Semester Credits:	23 cr

While the course requirements for the Bachelor of Pharmacy Studies program are strict, there is more elective credit allotted in the two-year Pharm.D. program. As a University Scholar, I will include two additional courses to the required classes for the Fall 2000 semester. Both

PHAR 355 Advanced Toxicology and PHAR 371 Advanced Pharmacology will extend my knowledge of toxicology beyond the PHRM 225 Toxicology pharmacy requirement.

Current		Fall 2000 Additional Proposed Classes	
PHRM 225 Toxicology	2 cr	PHAR 371 Advanced Pharmacology	3 cr
PHRM 224 Chemotherapy	2cr	PHAR 355 Advanced Toxicology	4cr
PHRM 255 Therapeutics III	2 cr		
PHRM 257 Clinical Pharmacokinetics	3 cr		
PHRM 223 Pharmacology Discussion/Lab	1 cr		
PHRM 209 Pharmaceutical Care	1 cr		
PHRM 200 Evaluation Skills	3 cr		
Total Semester Credits:	14 cr	Total Semester Credits:	21 cr

The spring 2001 semester is my final semester of didactic pharmacy studies before the initiation of the professional rotations. As a University Scholar, I will take PHAR 375 Toxicology Scholars Colloquium. This course will expose me to cutting edge toxicology research by distinguished researchers who have made significant contributions to our understanding of how drugs and chemicals injure living organisms. In addition, I will resume the toxicology research discussed earlier.

Current		Spring 2001 Additional Proposed Classes	
PHRM 226 Immunology	3 cr	PHAR 375 Toxicology Scholars Colloquium	1cr
PHRM 256 Therapeutics IV	3 cr	Toxicology Research	
PHRM 211 Intro. to Clinical Practice	2 cr		
PHRM 212 Prescription Processing (Lab)	3 cr		
PHRM 210 Non-Prescription Medication	3 cr		
PHRM 209 Pharmaceutical Care			
Total Semester Credits:	14 cr	Total Semester Credits:	15 cr

During the final year of the Pharm.D. program, I will be participating in the professional rotations needed for pharmacy licensure. I am required to spend one month at each of the following rotations; PHAR 262, PHAR 263, PHAR 264 and PHAR 265. In addition, I will spend one month in three of the elective rotations; PHAR 267, PHAR 268 and PHAR 280 (3 months total). My final two rotations will consist of full-time toxicology research (2 months total). Therefore, as a University Scholar I will resume my research during the Spring and

Summer of 2001 and it will continue into the two-month research rotation period. Advanced research will extend my analytical and investigative skills beyond my Honors research project.

Fall 2001/ Spring 2002 (one month each)		
PHRM 262 Professional Experience in Community Pharmacy	4 cr	
PHRM 263 Professional Experience in Hospital Pharmacy	4 cr	
PHRM 264 Professional Experience in Ambulatory Care Pharmacy	4 cr	
PHRM 265 Professional Experience in General Medicine		4 cr
PHRM 270 Professional Experience in Pediatrics	4 cr	
PHRM 267 Professional Experience in Infectious Disease	4 cr	
PHRM 268 Professional Experience in Oncology	4 cr	
PHAR 299 Research Experience (2 months)	4-8 cr	
Total Year Credits:	32-36 cr	

As an undergraduate I have pushed myself to excel in my personal life and in my studies. My activities extend beyond academics. After classes end and the textbooks are closed, I spend my time quilting, cross-stitching and making greeting cards. In addition, I am the current Chapter President of the professional pharmacy organization, Lambda Kappa Sigma, and the Vice-President of the pharmacy leadership organization, Phi Lambda Sigma. I have used my extracurricular time to enhance my leadership skills so that I can effectively communicate with others. I am extremely committed to my academics, research and leadership. It is with this same commitment that I apply to the University Scholars Program. As a University Scholar, I will augment my present pharmacy studies with an emphasis in toxicology. The University Scholar Program will allow me to become a pharmacist able to provide more comprehensive toxicology information to the public and to better assess the risks of chemical exposure within my community. My fairly rigorous plan of study will enable me to become a leader for the advancement of toxicology within pharmacy practice.

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