Marie A. Chisholm, Pharm.D., FCCP

Narrative for 2003 Regents' Research in Undergraduate Education Award

Although I have many facets to my job, the most rewarding are teaching and my research in education. Teaching is about learning, therefore my research in education involves exploring learning and the learning process. As a child, I had always been fascinated with the learning process and the science of education. Even now, I often find myself pondering: What can be done to enhance the educational process? Which teaching methodologies influence learning the most? What factors predict academic success or other positive student behaviors? I have spent my academic career researching answers to many of these questions in my pursuit of research in education.

My research goals (objectives) in education fall under <u>three</u> central themes: (1) determining significant factors influencing pharmacy students; (2) predicting the academic success of pharmacy students; and (3) implementing and evaluating different teaching methodologies and its effects on student learning. Below you will find a list of goals, objectives, findings, and references from selected educational published works in which I served as principal investigator and author:

 <u>Goal</u>: Determine significant factors that influence undergraduate pharmacy students. <u>Objectives</u>: To determine the significance of role models, work experience, and career goals as influencing factors for undergraduate pharmacy students. Findings:

Findings:

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- Practicing pharmacists are significant role models for undergraduate pharmacy students.
- Work experience and career goals are significant determinants of the pharmacy degree pursued.

<u>Impact on teaching and learning in the discipline</u>: Supports practicing pharmacists serving as role models throughout the pharmacy curriculum.

Selected references:

Chisholm MA, Pritchard FL. The significant influence of pharmacists as role models. *American Journal of Health-System Pharmacy*. 1995;52(12):348.

Chisholm MA, Cobb HH. Work experience and career goals as determinants of pharmacy degree pursued. *American Journal of Health-System Pharmacy*. 1996;53:305-307.

 <u>Goal</u>: Determine significant factors that predict academic performance of pharmacy students. <u>Objectives</u>: To determine which factors significantly influence pharmacy students' academic performance.

Findings:

The most important factors for predicting the academic performance of pharmacy students were math/science GPA, PCAT Composite score, and PCAT Verbal score. Although most students do not have a prior college degree, for those who had a college degree it was found to be a significant factor in predicting academic performance.

Impact on teaching and learning in the discipline: As a result of publishing my research in this area, the significant factors found in my research have been adopted by many colleges' of pharmacy admissions committees across the United States.

Selected references:

- Chisholm MA, Cobb HH, Kotzan JA. Significant factors for predicting academic success of first year pharmacy students. *American Journal of Pharmaceutical Education*. 1995;59:364-370.
- Chisholm MA, Cobb HH, Kotzan JA, Lautenschlager GJ. Prior four-year college degree and academic performance of first year pharmacy students: a three year study. *American Journal of Pharmaceutical Education*. 1997;61:278-281.
- Chisholm MA, Cobb HH, DiPiro JT, Lautenschlager GJ. Development and validation of a model that predicts the academic ranking of first-year pharmacy students. *American Journal of Pharmaceutical Education*. 1999;63:388-394.
- Chisholm MA. Students performance throughout the professional curriculum and the influence of achieving a prior four-year college degree. *American Journal of Pharmaceutical Education*. 2001;65:350-354.
- 3) <u>Goal</u>: Implementation and evaluation of different teaching methodologies, and its influence on student learning.

<u>Objectives</u>: To implement and evaluate different teaching methodologies, and its effects on student learning.

Findings:

- Students learn pharmacotherapeutic principles from computer-assisted instructional programs, and enjoy using computer-assisted instructional programs to learn.
- Student exposure to actual patients in the classroom enhances learning. First-year pharmacy students prefer to learn patient care principles by using actual patients.
- Student exposure to HIV/AIDS patients enhances first-year pharmacy students' attitudes toward caring for HIV/AIDS patients.
- Students' grades and instructors' teaching evaluations are not adversely affected by using interactive videoconferencing as an instructional delivery method.
- Disease management case studies enhance student learning, and students prefer to learn by traditional lectures and case-based lectures rather than by traditional lectures alone.
- Students enjoy using the Internet as a learning medium.
- Pharmacists, compared to pharmacy students, believe that receiving lectures via the Internet is more convenient than attending "live" lectures to obtain pharmacy-related instruction.

Impact on teaching and learning in the discipline: Supports the use of interactive video conferencing, computer-assisted learning, "live" patients, Internet lectures, and case-based lectures as teaching/learning tools in colleges' of pharmacy curriculums.

Selected references:

- Chisholm MA, Dehoney J, Poirier S. Development and evaluation of a computer-assisted instructional program in an advanced pharmacotherapeutic course. *American Journal of Pharmaceutical Education*. 1996;60:365-369.
- Chisholm MA, McCall CY, Francisco GE, Poirier S. Student exposure to actual patients in the classroom. *American Journal of Pharmaceutical Education*. 1997;61:364-370.
- Chisholm MA, Martin BC. Development of an instrument to measure students attitudes concerning pharmaceutical care. *American Journal of Pharmaceutical Education*. 1997;61:374-379.
- Chisholm MA, Ricci JF. Development and cross-validation of an instrument to measure pharmacy students' attitudes toward AIDS/HIV patients. *American Journal of Pharmaceutical Education*. 1998;62:162-166.
- Martin BC, Chisholm MA. Cross-validation of an instrument measuring students

attitudes toward pharmaceutical care. *American Journal of Pharmaceutical Education*. 1999;63:46-51.

- Wade WE, Cobb HH, Spruill WJ, Chisholm MA. Assessment of student performance in an advanced pharmacokinetics course taught by three methods of instructional delivery. *American Journal of Pharmaceutical Education*. 1999;63:82-85.
- Chisholm MA, Ricci JF, Taylor AT. Implementation and evaluation of an HIV/AIDS intervention program to improve student attitudes toward providing care. *American Journal of Pharmaceutical Education*. 1999;63:72-77.
- Chisholm MA, Spruill WJ, Wade WE, Cobb HH, Francisco GE. Implementation and evaluation of a disease management course in a new curriculum. *American Journal of Pharmaceutical Education*. 1999;63:315-322.
- Chisholm MA, Wade WE. Factors influencing students' attitudes toward pharmaceutical care. *American Journal of Health-System Pharmacy.* 1999;56:2330-2335.
- Chisholm MA, Wade WE. Using actual patients in the classroom to develop positive students attitudes toward pharmaceutical care. *American Journal of Pharmaceutical Education*. 1999;63:296-299.
- Chisholm MA, Miller AW, Spruill WJ, Reinhardt BO, Cobb HH, Terry AV, Reese RL, Wade WE. Influence of interactive videoconferencing on the performance of pharmacy students and instructors. *American Journal of Pharmaceutical Education*. 2000;64:152-158.
- Chisholm MA, Cobb HH, Lautenschlager GJ, McCall CY, Wade WE. Pharmacy students' attitudes toward therapeutics and clinical pharmacokinetics lectures via interactive videoconferencing. *Journal of Pharmacy Teaching*. 2000;8(1):21-32.
 - Chisholm MA, Walborn LL. An internet-based program to teach osteoporosis: do pharmacy students' and pharmacists' attitudes differ concerning education via the internet? *American Journal of Pharmaceutical Education*. Accepted 6/02.

The following is a list of selected publications that involve undergraduate students as research participants (students serving in the data collection, analyzing, and abstract submission phase). Many of these students actually helped present this work at national pharmacy education meetings. Undergraduate student names are bolded for easy identification.

- Chisholm MA, Cobb HH, **Rollins T, Agbim I, Barnard J, Holley J, Mbaegbu-Duru F.** Significant factors in determining the professional degree pursued by pharmacy students: Is work experience in a particular pharmacy environment significant? *International Pharmaceutical Abstracts.* 1995;32(21):2407.
- Chisholm MA, Dehoney J, Poirier S, **Curtis P, Livsey C**. Implementation and evaluation of a computer-assisted instructional program to increase patient problem solving skills in advanced therapeutics. *American Journal of Pharmacy Education*. 1996;60:91S.
 - Chisholm MA, Hawkins DW, Taylor AT, **Sanacore F, Fedyk R**. Analysis of pharmaceutical care activities provided by doctor of pharmacy clerkship students in an acute care setting. *International Pharmaceutical Abstracts*. 1997;34(21):2264.
 - Chisholm MA, Spruill WJ, **Fedyk R**, Francisco GE. Implementation and evaluation of a disease state management course in a revised curriculum: integration of traditional and case based-lecture. *American Journal of Pharmaceutical Education*. 1997;61:93S.
- Chisholm MA, **Walborn LL.** Development and evaluation of an online osteoporosis teaching module in a disease management course. *American Journal of Pharmaceutical Education*.

2000;64:104S.

Findings of these studies include:

- 1) Work experience is a significant factor determining the professional pharmacy degree pursued.
- 2) Computer-assisted instructional programs increase students' patient problem solving skills.
- 3) Pharmacy students provide pharmaceutical care during pharmacy clerkships.
- 4) Integration of traditional and case based-lecture enhances learning.
- 5) Students learn and enjoy using the Internet.

Pharmacy is a dynamic and diverse field in healthcare and offers graduates many career opportunities. Gaining acceptance to the University of Georgia College of Pharmacy (as well as other pharmacy schools) is extremely competitive, with a ratio of applicants to student enrollment of approximately 6:1. Selecting the most qualified students for pharmacy school has become an increasingly difficult task. In an attempt to better prepare pharmacy students for pharmacy school, I authored a book entitled "How to Prepare Students for the PCAT". The following page includes a picture of the book and selected reviews of the book, including outcome data indicating an increase in students' performance, from Amazon.com.

My Teaching Philosophy. Teaching is about learning. The content and the intent, the public and private, the environment and resources, the student and the teacher, and the method and delivery - all of it, influences learning. My teaching philosophy is quite simple and it can be summarized in seven words enthusiasm, dedication, accountability, motivation, commitment, passion, and involvement. I believe that teachers should be enthusiastic about teaching and learning. I also believe that good teachers are *dedicated* to learning and holding students *accountable* for achieving goals. In my experience as both a student and teacher (it is my belief that we all are students and teachers), I have learned that individuals strive to attain goals. Often, many will exceed their personal goals to obtain a level of excellence they never thought possible through the motivation and encouragement of another teacher/student. We should prepare our students to learn by *motivating* them to become life-long learners. I believe that a good teacher is also one who is *committed* to learning, and through this *commitment* is able to first develop a relationship with students that facilitates communication that optimizes the understanding of concepts that can be applied to "real life" situations. Furthermore, teachers should be *passionate* about teaching and learning, and this passion should be demonstrated in everything he/she does. Last, but certainly not least, I believe it is extremely important to get students *involved* in the teaching/learning process. To echo the words of Benjamin Franklin, "Tell me, and I forget; teach me, and I may remember; involve me, and I learn". This is the type of teacher that I strive to be.



Editorial Review

Book Description

This new edition has been expanded to include two full-length PCAT practice tests, with both answers and explanations. Review chapters and additional practice questions cover the three main PCAT test subjects: college-level biology, inorganic and organic chemistry, and quantitative ability. Other helpful and informative features include an overview of the pharmacy training process, a directory of pharmacy colleges in the United States, and a summary of their admission requirements.

Sample Test most like the PCAT, November 17, 2002

Reviewer: Dana Groulx (see more about me) from Wesley Chapel, FL United States

I used this review book for taking the sample tests. They were in exactly the same format as the actual PCAT, unlike some of the other books. The biology section was pretty much equal to the test in difficulty. Both the test and the book contained fairly simple questions. The chemistry and verbal analogy sections were also equal in the level of difficulty. The PCAT mathematics was a little harder than the questions in this book, even though it contained only geometry and elementary algebra. You only have 30 minutes to complete 60 questions and they neglect to tell you that fact in this book. I found that the reading comprehension questions were not anywhere as difficult as the actual test.

I do recommend this book, even if you just use it to get familiar with the format of the test. I scored at the 98th percentile and I think that part of that is due to this book. When I took the test, it seemed very familiar to me which helped my anxiety levels.

Good, November 6, 2001

Reviewer: A reader from Provo, Utah

This was the only book that I used to study for the PCAT. The outlines and sample questions were extremely helpful. The times allowed in the practice test were more generous than those on the actual exam. Overall, I recommend this study guide and would use it again.

A great investment to make!, October 23, 2001

Reviewer: Judy Wong from Brooklyn, NY United States

I just took my PCAT this past weekend and I have to say that this book was really helpful and certainly prepared me for the test. The samples questions got me very acquainted with the format of the questions on the test. As I was taking the exam I feel I was just working on sample problems in the book. The outlines were definitely helpful. I suggest going over the biology and chemistry outline.

Marie A. Chisholm, Pharm.D., FCCP

Condensed Curriculum Vitae

Present Rank/Institution:	Associate Professor, Department of Clinical and Administrative Pharmacy, University of Georgia (UGA) College of Pharmacy July 2001 - Present
	Associate Clinical Professor, Department of Medicine, Medical College of Georgia School of Medicine July 2000 - Present
Highest Earned Degree:	Doctor of Pharmacy University of Georgia
Post Graduate Training:	Pharmacy Practice Residency, Mercer University Southern School of Pharmacy and Piedmont Hospital
Didactic/Experiential Teaching:	Teaching students of pharmacy, nursing, health, and medicine at the undergraduate and graduate level. Also, teaching undergraduate students about careers in pharmacy.

Publications concerning Teaching/Learning (over the last 8 years):

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1) <u>Published 3 books</u>. One of the books (two editions) is: **Chisholm MA.** How to Prepare for the PCAT. Hauppauge, New York. Barron's Educational Series Inc., 2nd edition. 2002 (442 pages). This book (and the first edition) is number 1 in sales for books that prepare undergraduate students to take the Pharmacy College Admissions Test.

2) <u>Published over 16 book chapters</u>. These chapters are in various books used to teach therapeutics and medical management of diseases. Selected examples:

Chisholm MA, Jackson MW. Evaluation of the gastrointestinal tract. In DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM (eds). Pharmacotherapy: a pathophysiologic focused approach. 5th edition. New York, New York. McGraw Hill. 2002;575-584.

Chisholm MA, Bagby TR, Mulloy LL. Renal Transplantation. In Swinghammer (ed). Instructor's Guide, Pharmacotherapy Casebook: a patient focused approach. 2nd edition. Stamford, Connecticut. Appleton & Lange. 2000;139-141.

3) <u>Published over 18 articles concerning my research in education in peered reviewed teaching journals.</u> Selected examples:

- **Chisholm MA**, Cobb HH, Kotzan JA. Significant factors for predicting academic success of first year pharmacy students. *American Journal of Pharmaceutical Education*. 1995;59:364-370.
- Chisholm MA, Dehoney J, Poirier S. Development and evaluation of a computer-assisted instructional program in an advanced pharmacotherapeutic course. *American Journal of Pharmaceutical Education*. 1996;60:365-369.
- Chisholm MA, McCall CY, Francisco GE, Poirier S. Student exposure to actual patients in the classroom. *American Journal of Pharmaceutical Education*. 1997;61:364-370.
- Wade WE, Cobb HH, Spruill WJ, Chisholm MA. Assessment of student performance in

an advanced pharmacokinetics course taught by three methods of instructional delivery. *American Journal of Pharmaceutical Education*. 1999;63:82-85.

- Chisholm MA, Ricci JF, Taylor AT. Implementation and evaluation of an HIV/AIDS intervention program to improve student attitudes toward providing care. *American Journal of Pharmaceutical Education*. 1999;63:72-77.
 - **Chisholm MA**, Cobb HH, DiPiro JT, Lautenschlager GJ. Development and validation of a model that predicts the academic ranking of first-year pharmacy students. *American Journal of Pharmaceutical Education*. 1999;63:388-394.
 - **Chisholm MA**, Miller AW, Spruill WJ, Reinhardt BO, Cobb HH, Terry AV, Reese RL, Wade WE. Influence of interactive videoconferencing on the performance of pharmacy students and instructors. *American Journal of Pharmaceutical Education*. 2000;64:152-158.
 - **Chisholm MA**, DiPiro JT, Fagan S. Implementation and evaluation of an Introductory Pharmacy Experience Model that increases learning. *American Journal of Pharmaceutical Education*. Accepted 11/02.

4) <u>Published over 25 abstracts concerning teaching strategies (practices) to improve student learning</u>. Selected example which involved a past student (Fedyk R) who participated in a teaching scholarship project:

Chisholm MA, Spruill WJ, Fedyk R, Francisco GE. Implementation and evaluation of a disease state management course in a revised curriculum: integration of traditional and case based-lecture. *American Journal of Pharmaceutical Education*. 1997;61:93S.

Presentations concerning Teaching/Learning (over the last 8 years):

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1) <u>Presented over 40 teaching research presentations at national meeting concerning teaching strategies</u> (practices) to improve student learning. Selected examples:

- "Student-centered learning in the new curriculum at the University of Georgia". 97th Annual American Association of Colleges of Pharmacy Meeting. Reno, Nevada. July 1996.
- "Assessment of academic performance in an advanced level pharmacokinetics course taught by three methods of instructional delivery". American Association of Colleges of Pharmacy Annual Meeting. Indianapolis, Indiana. July 1997.
- "Significant factors for predicting the academic success of pharmacy students in a new curriculum: a four-year study". American Society of Colleges of Pharmacy Annual Meeting. San Diego, California. July 2000.

2) <u>Presented teaching research presentations at the University of Georgia teaching meetings concerning teaching strategies (practices) to improve student learning</u>. Selected example:

"Technology in Teaching". The University of Georgia, Academic Affairs Faculty Symposium. April 17, 1998. 1)<u>Received over \$100,000 in grant funding for research in education, the development of teaching methodologies, and implementing projects to increase minority students in post-secondary education.</u> Selected examples include:

- "Evaluation of GSAMS Programs (Adult/Higher Education to K-12 Programming)". Awarded in 1995 from the Georgia Statewide Academic and Medical System for \$4,200.00. **Chisholm, MA** (Principal Investigator).
 - "Development of a Program to Positively Influence Pharmacy Students' Attitudes Toward Patients with AIDS". Awarded in 1998 from Roche Pharmaceuticals for \$1,500.00. Chisholm, MA (Principal Investigator).
 - "Use of Multimedia and the Internet to Enhance Student Problem Solving Skills". Awarded in 1998 from the University System of Georgia Teaching and Learning Grants \$20,000.00. Chisholm, MA (Co-Principal Investigator).

Awards and Honors Received Concerning Teaching

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1) <u>Received over 15 teaching awards</u>. Greater than 50% of these teaching honors are at the national level or above, and some are at the state and local level. Selected examples include:

- Rufus A. Lyman Award For The Most Outstanding Publication in the American Journal of Pharmaceutical Education
- Awarded by AACP (American Association of Colleges of Pharmacy) in 1996.
- University of Georgia College of Pharmacy 1997 Teacher of the Year Awarded by the University of Georgia College of Pharmacy in 1997.
- University of Georgia Richard B. Russell Undergraduate Teaching Award Awarded by The University of Georgia in 1998.
- 1999 Regents Teaching Excellence Award
- Awarded by Board of Regents of the University System of Georgia in 1999.
- American Association of Colleges of Pharmacy 1999 Council of Faculties Innovations in Teaching Award
 - Awarded by AACP in 1999.
- Fulbright Teaching/Research Award
 - Awarded by the Council for International Exchange of Scholars in 2000.
- American College of Clinical Pharmacy (ACCP) Education Award Awarded by ACCP in 2000.

Experience with the Review of Teaching

<u>Member of several committees, national and local, concerning teaching/student learning.</u> Selected examples: Member (current or past) of American Association of University Professors, UGA Selection Committee for the Excellence in Undergraduate Research Mentoring Award, Self Study Committee on the Quality of the Undergraduate Experience at UGA, Selection Committee for the Richard B. Russell Outstanding Undergraduate Teaching Award, AACP Pharmacy Practice Teaching Commitee, and the ACCP Task Force for Cultural Competence.

Contact information:	Marie A. Chisholm, Pharm.D., FCCP
	University of Georgia at the Medical College of Georgia, CJ-1020
	Augusta, GA 30912-2450
	Phone: (706) 721-4915
	Fax: (706) 721-3994



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College of Pharmacy

Department of Clinical and Administrative Pharmacy

December 5, 2002

Selection Committee Regents' Research in Undergraduate Education Award

Dear Selection Committee Members:

It is my pleasure to recommend Dr. Marie Chisholm for the Regents' Research in Undergraduate Education Award. Dr. Chisholm is an outstanding faculty member at our College who has had many noteworthy accomplishments over a short time period. Dr. Chisholm began her career as a Faculty member in July 1994 and since that time has established a national reputation in pharmacy as an exceptional instructor and scholar. It is fair to say that she has become one of the most highly respected Faculty members in our College by students and colleagues. Also, she is one of the most accomplished faculty members in her field in the country. Evidence for this assessment is as follows:

- 1. She has received several prestigious teaching awards at the University of Georgia including being named a recipient of the 1999 University System of Georgia Regents Teaching Excellence Award and the Richard B. Russell Undergraduate Teaching Award from the University of Georgia in 1998. In 1997, she was named College of Pharmacy Teacher of the Year, and in 1999 received the Innovations in Teaching Award from the American Association of Colleges of Pharmacy Institute. In 2000, she received the Education Award from the American College of Clinical Pharmacy.
- 2. She has presented 45 instruction-related papers. More than 90% of these were at the national level and included invited presentations of her research.
- 3. She received the Rufus Lyman Award from the American Association of Colleges of Pharmacy (AACP) for the best paper to appear in the American Journal of Pharmaceutical Education in 1996. This educational research paper identified significant factors that predict the academic success of pharmacy students. She also received the Innovations in Teaching Award in 1999 from AACP for her research in a teaching methodology, which involved patients coming into the classroom to help teach pharmacy students about diseases. This course is rated by students as being one of the most valuable in the entire curriculum.

CJ-1020, The Medical College of Georgia, Augusta, Georgia 30912-2450 (706) 721-4915 FAX (706) 721-3994 An Equal Opportunity/Affirmative Action Institution



4. She has published 27 abstracts and 18 research papers related to teaching. Most of these have been published in the *American Journal of Pharmaceutical*

Education, the major teaching journal in our field. These papers are notable for a few points: 1) describing teaching innovations and providing documentation of teaching effectiveness, 2) examining the factors that influence student academic success in pharmacy school, and 3) assessing the factors that affect attitudes of students towards patients with diseases such as AIDS.

- 5. Overall, she has published over 50 journal papers, 16 book chapters and three books including the book "How to Prepare for the PCAT" [the pharmacy college entrance examination]. In addition, she has constructed eight web sites for enhancement of didactic learning or as stand-alone educational programs.
- 6. She has served on national-level committees related to education, such as the Educational Affairs Committee of the American College of Clinical Pharmacy (the major national professional practice organization for our discipline) and the Research and Graduate Affairs Committee of the American Association of Colleges of Pharmacy.
- 7. She has received numerous grants for innovations in instruction. Some of these have been awarded by the College of Pharmacy, University of Georgia Research Foundation, UGA Office of Instructional Development, and the Georgia Statewide Academic Medical System (GSAMS).
- 8. Dr. Chisholm has received over \$2,000,000 in grants as principal investigator for projects related to the development of novel pharmacy services. Students have been actively involved in these services which focus on renal transplant patients. The development of these services have been well documented by multiple publications (found in Dr. Chisholm's curriculum vitae).
- 9. Student evaluations of Dr. Chisholm's instruction have consistently been excellent for the entire time that she has been at the University of Georgia. Score averages for all domains of assessment average 4.5 to 5 (on a scale of 0 to 5, 5 being best). These results were obtained through our formal College instructor evaluation process that is mandatory with each required course. Evaluations have been excellent for a variety of instruction formats, including large lectures, small groups, as well as for clinical instruction in pharmacy practice.

Dr. Chisholm is one of the most dedicated and devoted teachers I know. She is always accessible to students. She works countless hours assisting them on various projects and assignments, often late into the night and on weekends. She has been a valuable resource to both students and faculty. I know that she is always willing to help colleagues with some aspect of teaching and her input is greatly valued.

Dr. Chisholm brings to teaching other valuable assets, not the least of which is her infectious enthusiasm and excitement for the topics she teaches. There are not many academics who can sustain the level of energy and interest in the topics that she does. She has a passion for teaching and motivating students to learn as much as they can

from her. Dr. Chisholm is very much focused on her students. She is a master at getting students to exercise good problem-solving and critical reasoning skills, and she

has been quite successful at guiding students in self-directed learning. She is also an excellent mentor of good clinical judgement and professional behavior for students.

There is ample evidence of her dedication to teaching. Dr. Chisholm lives and works primarily on a satellite campus for the UGA College of Pharmacy, which is located at the Medical College of Georgia in Augusta. However, Dr. Chisholm spends a high proportion of her time in Athens. This takes time away from activities that may be more professionally rewarding for her individually, but she is driven to spend as much time as possible with her students in Athens. She feels that it is important to establish a good working relationship with her students and build their level of comfort with her. Often she must sacrifice personal time to carry this out. It is clear that this dedication allows for students to have the most access to her talents. Her dedication to teaching is also exemplified by her pursuit of grants to support teaching innovations and her zeal to publish the outcomes from her experience so that other faculty here and across the country can benefit.

She serves as Faculty advisor for student organizations, and is actively involved in minority student recruitment. It is clear that she maintains close contact with her students and has a tremendous influence on their development. She continually strives to improve her courses and use innovative methods to accomplish this. She has been a College leader in internet based education. She has developed computer-assisted instructional packages, and she has brought real patients into the classroom.

Overall, Dr. Chisholm has had more accomplishments in instruction than any other Faculty member in our College or other faculty that I am aware of in our discipline at other colleges of pharmacy. I strongly and unreservedly support Dr. Chisholm for the Regents' Research in Undergraduate Education Award. She is an exceptional teacher in the classroom and clinical settings and has contributed extensively to the science of instruction through her innovation and publication. Thank you for your attention to this letter.

Sincerely,

Joseph T. DiPiro, Pharm.D. Panoz Professor of Pharmacy Head, Department of Clinical and Administrative Pharmacy