



Successful Practices in

**College/School Involvement in Conducting  
Residency Programs**

*Successful Partnerships for Conducting Residency Programs (college/school affiliation with practice site-based program), Residency Training as a Foundation for Faculty Preparation, Combined Residency/Graduate Degree Programs, Residency Contribution to Faculty Development*

Pharmaceutical Education 2009



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**Area of Successful Practice: Successful Partnerships for Conducting  
Residency Programs**

**The University of Georgia**  
College of Pharmacy  
Albany, GA 31701

**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

**Description**

The primary determining factor for the college's participation in residency training is/was the faculty and the college's leadership to dedication to advancing the profession through residency training programs. Specific language has been written into the college's mission statement and strategic plan, as well as the mission/strategic plan for the Department of Clinical and Administrative Pharmacy. While residents are involved in patient care activities that are potentially reimbursable, the facility is not currently billing for their clinical activities and they are not generating revenue at this time.

UGA has a Residency Steering Group Chaired by Dr. Brian Buck that is used for information sharing and development of all of UGA-affiliated sites and, beyond networking, to increase the extent and value of the college's involvement in residency training. UGA has implemented several programs through this group including the Resident Enrichment Series and the Teaching Certificate Program, and has also developed an overall strategic plan/vision for sustained growth and advancement of the program. In the next year, plans are in place to expand into the Athens hospitals to meet increasing demand for training sites.

UGA has several different models for the basic structure of the residencies, depending on the site and whether they are PGY1 or PGY2. The structures include:

Athens – PGY1 Community Pharmacy program – 3 positions

*Sponsorship:* sponsored by UGA and affiliated with Kroger community pharmacies and one independent, Village Pharmacy

*Funding:* funded by UGA and grants from Kroger and two independent pharmacies

*Relationships:* UGA provides a Residency Director to oversee the residencies; Faculty members help residents with research projects and fulfilling teaching certificate requirements

Athens – PGY2 Ambulatory Care – 1 position

*Sponsorship:* sponsored by UGA and affiliated with the Athens VA CBOC

*Funding:* 100% funded by UGA, proposals have been submitted for VA funding

*Relationships:* Residency Director is UGA faculty and UGA faculty serve as preceptors

Albany – PGY1 Pharmacy – 2 positions

*Sponsorship:* Sponsored by Phoebe Putney Memorial Hospital (PPMH) and affiliated with UGA

*Funding:* 100% funded by PPMH

*Relationships:* Residency Director is UGA faculty who is 50% co-funded by PPMH, UGA faculty act as preceptors

Augusta – PGY1 Pharmacy – 4 positions

*Sponsorship:* sponsored by Medical College of Georgia Hospital and affiliated with UGA

*Funding:* co-funded, UGA funds one of the four residency positions

Augusta – PGY1 Community Pharmacy – 1 position

*Sponsorship:* sponsored by Barney's Pharmacy in Augusta

*Funding:* funded entirely by Barney's Pharmacy

*Relationships:* UGA provides a Residency Director to oversee the residencies. Faculty members help residents with research projects and fulfilling teaching certificate requirements.

Augusta – PGY2 Pediatrics – 1 position

*Sponsorship:* sponsored by UGA and affiliated with MCG

*Funding:* 100% funded by UGA

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# **The University of Louisiana at Monroe**

College of Pharmacy

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## **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

### **Description**

The program is a partnership between the College of Pharmacy and three (soon to be four) charity hospitals that are involved in the training of family practice medical residents. The programs are somewhat different and are undergoing separate accreditation. All programs are PGY1 residencies.

- Program 1 (2 residents) is located in the same city as the College of Pharmacy and is overseen by the residency director in the College. The residency setting is a rural charity health-system that has a Family Practice Physician residency program and assists in training surgical residents from a sister institution 1.5 hours away. College of Pharmacy faculty as well as institutional pharmacists provide residency education. The College was the initial sponsoring agency and has transferred sponsorship to the institution.
- Program 2 (2 residents) is located two hours from the College of Pharmacy and is overseen by the residency director in the College. The residency setting is a rural charity health-system that has a Family Practice Physician residency program and assists in medical residents from a sister institution 2 hours away. Pharmacy resident education is provided by institutional pharmacists with input from the residency director. The College was the initial sponsoring agency and has transferred sponsorship to the institution. This program focuses on ambulatory care.
- Program 3 (6 residents) is located at an academic medical center located 1.5 hours from the College. The College has a satellite campus located at the Academic Medical Center. The residency director is a part of the pharmacy at the academic medical center and pharmacists at the academic medical center and faculty from the College of Pharmacy provide educational oversight for the residents. The academic medical center is the sponsoring agency.
- Program 4 (will have 2 residents) is located four hours from the College of Pharmacy. The residency setting will be an urban charity health-system that has a multiple graduate medical education programs. The residency will be overseen by a residency director from the practice site and College of Pharmacy faculty as well as institutional pharmacists will provide oversight of resident education. The College will be the initial sponsoring agency and will then transferred sponsorship to the institution after the first year.

The funding for each of the residencies is as follows:

- Program 1: The initial funding from this program came from the College of Pharmacy. A faculty line was cannibalized to provide funding for the residencies. The program has since been transferred to the practice site and they are applying for funding from CMS
- Program 2. The initial funding for the residency was received as a grant from a regional healthcare foundation. This provided funding through accreditation, and the funding of the program will be transferred to the practice site that will apply for CMS funding.

- Program 3. The funding has always come from the academic medical center.
- Program 4. The initial funding was provided to the College as a grant from the Charity Hospital System. Funding will be transferred to the practice site at accreditation to allow the practice site to apply for CMS funding.

The College became involved in the residency program for several reasons: 1) the lack of residency training opportunities in the state led to students who were interested in residency training leaving the state with a low return rate, 2) the lack of residencies in the state led to students who were interested in postgraduate training forgoing the training due to geographic constrictions, 3) it was felt that the residencies would raise the level of pharmacy practice at the site and improve the site as an Advance Practice Experience site, 4) the residents would provide increasing opportunities for faculty scholarship, 5) the residency program would potentially provide future faculty members (three current faculty have undergone training at one of our residencies), and 6) residents could serve as preceptors and lecturers in the College of Pharmacy Program.

Residency training is incorporated into the strategic plan. Benefits include increased scholarly production by faculty involved in the residency training program, apparent increase in job satisfaction of faculty involved in the residency program, extra preceptor sites for the College, extra lecturers for the classroom, interactions between the residents and students in journal club, at the practice site and in the classroom, postgraduate training sites for geographically-bound students, enhanced pharmacy services at the institutions involved, applicants for pharmacy practice faculty positions in the College of Pharmacy and stronger ties between our institution and the medical training programs within the state.

Each residency program has contractual agreement outlining responsibilities. In programs 1, 2 and 4, the residency director is the same person in the College of Pharmacy ensuring consistency across the program and efficiency in the administrative process. The financial arrangements for initiating the residencies have allowed the College to sponsor the residency until accreditation at which time the sponsorship is switched to the practice site allowing them to obtain CMS funding. Program 3 is similar to most academic medical center programs. The involvement of faculty in these programs allows for quid pro quo agreements with the practice sites and our students without payment for services. In addition, poster and podium presentations as well as publications are expected to have the name of both institutions on them allowing for increased institutional exposure.

### **Outcomes**

All programs allow residents significant teaching exposure through precepting of students. Program 1 has a significant teaching component in the classroom as well. Residencies in Programs 2, 3 and 4 can have classroom experience if desired. In addition, programs 1, 2, and 4 have a residency research committee that provide input on the resident's research project in the same manner as a masters or doctoral graduate student committee. We currently do not track or evaluate interest in academia; however, 7 program residents [three out of four for the one located in the city of the College with Program 1 have applied for faculty positions at our institution (3 hired) and one has been placed at an outside institution (also from Program 1)]. Residents may serve as preceptors, teach in the classroom and participate in student journal clubs.

Residents can serve as faculty extenders at three of the sites allowing faculty more time for scholarly activities. In addition, faculty can serve as research advisors or co-author papers with residents to increase scholarly activity. In addition, the residents' clinical activities and research projects are raising the awareness of the need for enhanced pharmacy services with physicians at one site insisting that they could not do without the residents. It is too early to know if they stimulate practice change, but early indicators lead us to believe that they will. Faculty are rewarded for their interaction with the resident in both the teaching and scholarship areas of promotion and tenure and the residency director is given a stipend and reduced workload for the position.

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**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

**Description**

The School of Pharmacy-Boston at the Massachusetts College of Pharmacy and Health Sciences (MCPHS) has demonstrated a long-standing commitment to support postgraduate residency programs. Six years ago, a Residency/Fellowship Committee was established at MCPHS to support the School's strategic plan for maintaining high quality residency programs, and to develop new residency programs. The Committee is comprised of faculty members who serve as residency program directors and/or preceptors, and includes a pharmacy resident representative.

Each residency program has been designed in close partnership with external practice sites and has been tailored to support the residency program's goals and needs. The majority of our residency programs are structured with the practice site as the sponsor, and the School as the affiliate, with approximately two-thirds of the funding for the residency program provided by the practice site, and the remaining one-third from the School. One residency program is fully funded by MCPHS, with both an administrative and academic component. The resident salary for the newest program, its practice site at Sullivan's Pharmacy and Medical Supply (an independent pharmacy), has received funding from the Cardinal Health Foundation. Additionally, each program varies in terms of number of sites involved, and its designation as a Postgraduate Year 1 (PGY-1) or PGY-2 program. The residency programs are:

- Beth Israel Deaconess Medical Center/MCPHS PGY-1 Residency
  - Co-funded by Beth Israel Deaconess Medical Center and MCPHS
  - Single-site; four residents annually
- Community Pharmacy Practice at Walgreens Patient Care Center/MCPHS PGY-1 Residency
  - Co-funded by Walgreens and MCPHS
  - Multi-site: 2 Patient Care Centers are utilized during the residency; two residents annually
- Harvard Vanguard Medical Associates/MCPHS PGY-1 Residency
  - Fully-funded by MCPHS
  - Multi-site: 2 Harvard Vanguard Sites are utilized during the residency; one resident annually
- Center for HIV/AIDS Care and Research at Boston Medical Center/MCPHS HIV Specialty PGY-2 Residency Program
  - Co-funded by Center for HIV/AIDS Care and Research at Boston Medical Center and MCPHS
  - Single-site; one resident annually
- Cardinal Health/Sullivan's Pharmacy/MCPHS Two-Year Community Pharmacy Management Residency Program (new program beginning 2008)
  - Co-funded by Cardinal Health Foundation, Sullivan's Pharmacy and Medical Supply, and MCPHS
  - Single-site; one resident annually

While the residency programs are distinct, all are well-integrated within the School to fulfill academic components of teaching, service, and scholarship. Residents receive an adjunct faculty appointment and are assigned teaching activities on campus relevant to their specific type of training program. Supplementing the standard residency orientations at the practice sites, the Residency/Fellowship Committee sponsors an academic orientation at the College during the month of July to familiarize residents with the pharmacy curriculum, teaching activities, and services available to them at the College. Specific workshops and seminars are provided to guide residents in teaching activities throughout the year. The residents also serve as preceptors for sixth year Doctor of Pharmacy students under the guidance of experienced preceptors.

### **Outcomes**

The School's leadership and involvement in residency training has provided many benefits to the College, practice site, and other stakeholders. Faculty members mentor residents in research, leading to increased scholarly productivity within the Pharmacy Practice Department. The residents provide valuable teaching contributions in the didactic, laboratory, seminar, and practice settings, and a fair number of residents have chosen to pursue full-time, part-time, or adjunct faculty positions upon completion of the program. Residents in the community setting have been involved both in reimbursable patient care activities such as Medication Therapy Management, and in designing innovative services such as immunization clinics. Overall, partnerships with the practice sites for residency programs have led to enhanced collaborations yielding positive impact to the teaching, professional service, and scholarly goals at both institutions.

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## **University of Maryland**

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### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

#### **Description**

The University of Maryland School of Pharmacy and the University of Maryland Medical Center's Department of Pharmacy have joined forces to create a combined residency training program that will meet the post graduate pharmacy residency training needs of both institutions and enhance the training of pharmacists. This combined program is known as "The University of Maryland Pharmacy Residency and Fellowship Program." The college/school is the sponsoring organization affiliated with the practice site and the Residency program resides in the Department of Pharmacy Practice and Science (PPS) under the direction of the chair. The chair appoints the coordinator for the residency program.

The goal of this extended partnership with the Medical Center is to be a national model of collaboration between schools of pharmacy and university-based health centers.

This new residency program brings together resources of both organizations to broaden the residents' patient care training in many specialty areas, including intensive care, trauma, cardiology, transplant, and others. The program also offers expanded training opportunities in research and pharmacy management. The School of Pharmacy is one of seven professional schools at the University of Maryland, Baltimore (UMB), which also has a graduate school. The University of Maryland Medical Center is a 705-bed, private, not-for-profit teaching hospital located on the UMB campus. Together, the Medical Center and the School of Pharmacy offer a high-quality clinical practice site within a broader scholarly framework, which includes teaching and research.

The joint residency program has allowed us to combine our resources for a more comprehensive and varied experience for our pharmacy residents. Residents are taught and coached by not only the hospital's pharmacy department-based clinical pharmacy specialists, but also by esteemed faculty members from a top ranked School of Pharmacy.

The University of Maryland Pharmacy Residency and Fellowship Program offers PGY 1 residencies in managed care, community pharmacy, and pharmacy practice. PGY 2 residencies include ambulatory care, critical care, oncology, pediatric, psychiatric, geriatric, pharmacotherapy, palliative care, and solid organ transplantation. The campus also offers two fellowship programs, one in Toxicology and the other in Instructional design and Evaluation.

Each Resident is employed by one party, either the medical center or School of Pharmacy. The cost of a Resident's stipend and employee benefits is funded through one of the following mechanisms: Solely by the School of Pharmacy, solely by the medical center, department of pharmacy, or jointly by both the School and medical center.

All residents are expected to complete core requirements for successful completion of the residency program. These include pharmacotherapy rounds, management seminars, designing, completing, and presenting a research project and presenting findings at the Eastern States Conference and the School of Pharmacy Research Day. They also will be encouraged to present their projects at a national meeting.

- Pharmacotherapy Rounds Presentation – residents are required to make one formal presentation that reviews treatment of a disorder or examines a pharmacotherapeutic problem in a specific patient population.
- Management Seminars - Each month, residents attend management seminars, which cover various management and administrative topics related to pharmacy practice. Topics in the past have included ways to prevent medication errors, pharmaceutical industry relationships, compensation for cognitive services, collaborative drug therapy management, as well as business plan development and developing leadership skills.
- Research Projects - Each resident is required to complete a comprehensive research project during the year. Assistance with navigating the Institutional Review Board (IRB) procedures and developing protocols is provided by the residency research committee throughout the process. Residents are required to make presentations to the research committee and are also required to present at Eastern States Residents and Preceptors conference. Residents prepare a report of their project in publishable format as part of the requirements for successful completion of their residency.
- Teaching - Residents are required to participate in teaching activities throughout the year, and are designed to develop a resident’s teaching skills. Teaching activities vary, and include lectures, leading small group discussions, assessing doctor of pharmacy students on clinical skills, and serving as a preceptor during experiential rotations. All residents are appointed as clinical instructors at the School of Pharmacy. Basic concepts and teaching skills are first acquired through a required Teaching and Presentation Skills seminar conducted during orientation. Residents work with faculty as they prepare for teaching activities, and are assessed periodically. Residents who wish to pursue a career in academia are encouraged to participate in the course Educational Theory and Practice, which teaches concepts on instructional design and methodology. Residents who successfully complete this course are granted a teaching certificate.

### **Outcomes**

The partnership achieved five main outcomes:

- The partnership has allowed us to share both financial and administrative resources to streamline and standardize the marketing, recruitment activities, and accreditation process of our residencies. There has been a measurable improvement in our recruiting strategies and efforts.
- The partnership has resulted in the development of a joint residency research committee made up of clinical specialists and faculty to provide mentorship to residents for research projects. This has substantially enhanced the resident’s research experience.
- The partnership has led to the development of a memorandum of understanding that outlines the purpose of the partnership, guiding principles, and responsibilities of the School of Pharmacy and Medical Center, Department of Pharmacy.
- The partnership has led to the development of a residency director committee that is made up of the chair, department of pharmacy practice and science; assistant director of

clinical services at the medical center; coordinator of the residency program; academic coordinator; residency program directors; and resident liaison. This committee is responsible for the development and approval of policy and procedures and has a collective voice in making decisions on all issues pertaining to the residency training program.

- This partnership has also provided an avenue for residents to pursue more academic training to prepare them for faculty positions.

*Barriers:* One barrier encountered was in the definition of the specific roles and responsibilities of the School of Pharmacy and Medical Center in terms of funding for administrative costs, resident orientation and training, scheduling of staffing and teaching, marketing and recruitment, and accreditation process. This was resolved with development of a memorandum of understanding and mutual compromise by the two entities.

A second barrier encountered was in requiring the same number of teaching and staffing hours for all residents. It was decided that it would be a requirement for all residents to participate in teaching and staffing but it would not be necessary for the number of hours to be the same. The number of teaching and staffing of hours varies depending upon year of residency training and source of funding. Another goal was standardize residency stipends. Pharmacy residents employed by medical center are under the Graduate Medical Education (GME) program. Therefore; their stipends are consistent with medical residents at the hospital. This makes it challenging for the School of Pharmacy residents to maintain similar stipend levels. At the end, both entities helped each other financially to make the salaries comparable.

*Lessons:* Developing a partnership with another institution that has different residency funding sources and HR department does not impede the success of the joint residency training program. Rather than focus on differences, it is more important to focus on the strengths on the individual institutions and how you can best bring them together to maximize the benefit to your program and your residents. The development of a written document such as a MOU that outlines the responsibilities of both institutions and expectations of residents is vital to the success of the partnership.

Ongoing communication between department leadership and staff, residency directors, preceptors and residents is important to a successful residency program partnership. This is best facilitated by the creation of an oversight committee such as our residency directors committee.

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**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

**Description**

*Overview:* The University of Minnesota Ambulatory Care Residency Program is an accredited PGY1 program sponsored by the College and partnering with several health care organizations across the state of Minnesota. The program offers residency positions across three “emphasis areas” – community clinic (10 positions), rural health (4 positions) and leadership (24 month program, 4 positions). The program was formally established in 1999 initially partnering with three organizations and has grown to its current level using the following principles to underpin program development.

- The primary mission of the program is to prepare patient-centered practitioners for excellence in ambulatory care pharmacy practice;
- The program shall serve as a vehicle for advancement of pharmacy practice in ambulatory care settings in the state of Minnesota;
- Academic-practice partnerships and centralized administration of residency training will create residency learning opportunities in practices unlikely to host this type of training if required to do it individually;
- A multi-site residency program coordinated by a College of Pharmacy can create a broader scope of learning experiences for a resident than can be offered by a single institution.

*Program Structure:* Program administration resides at the College of Pharmacy and is comprised of a program director, assistant program director, group education coordinator and an administrative assistant. Each affiliated practice site has a designated site coordinator who reports to the Program Director, in addition to residency preceptors. Functions associated with overall program management, including marketing, recruitment, learning system design and delivery, and accreditation are all led by collegiate-based program administrators.

In addition to site-specific learning activities which focus on clinical service delivery and practice management, several program-wide learning activities have been created:

- Monthly “Academic Days” which bring all residents together in one location for topical discussions, journal club, case presentation, grand rounds and social activities
- Writing experience through a program-wide drug information newsletter, The Curbside Consult as well as authorship and maintenance of therapeutic drug class reviews used within a national formulary resource tool for safety
- Delivery of asynchronous, Web-based educational programs focused on medical literature evaluation, leadership and practice development and teaching skills

*Financial Structure:* The College of Pharmacy provides financial support for administrative staff time and funds the four leadership residency positions as these positions provide significant teaching service to the school. Stipend and fringe benefits for residency positions based at affiliated sites are supported by the training sites. Training sites also pay a program administration fee to the College to support program operations.

### **Outcomes**

By all accounts, the program design has been an excellent example of a “win-win” partnership between an academic institution and community-based health care organizations. Outcomes noted by program personnel include:

- The number of affiliated organizations has increased from 3 initially to 12 in 2008-09. Over 50 residents have graduated from the program since its inception.
- Most affiliated sites indicate that they would not be engaged in residency education if they had to manage a program independently – the model has directly influenced the number of ambulatory care residency opportunities that exist in the state.
- Recruitment is likely enhanced through the reputation and national presence of the University, ensuring excellent candidate pools for the affiliated training sites. In 2009, 52 applications were received from candidates representing 17 schools.
- The initiation of several pharmacist practices based in ambulatory care clinics in Minnesota are a direct result of residency program partnerships. This has also led to several new ambulatory care APPE sites for the College’s experiential education program.

*Barriers to Implementation:* Few barriers to implementation have been identified over the 10 years of program operation. Because funding for residents is provided by affiliated organizations, typical issues related to funding new positions have been experienced; however this has not been a significant issue as most organizations recognize residency education as a positive return on investment, particularly when alleviated from the administrative burden of managing a program.

*Lessons Learned:* A university-based, multi-site residency program can create a foundation from which additional benefits can effectively spin off. Growth of the residency program has provided opportunities for teaching support not only in the experiential setting, but in the classroom as well. Preceptor development initiatives for residency preceptors have influenced the quality of Pharm.D. education at training sites. The collective size of the program creates a capacity that has supported taking on projects for external constituencies that serve as positive learning experiences for individual residents and generate revenue for the program.

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**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

**Description**

*Introduction:* For 17 years, St. Louis College of Pharmacy has supported pharmacy residents and residency training programs. This commitment has prepared residency-trained pharmacists that now practice in St. Louis and throughout the country. While the type and structure of residency programs has changed over time, St. Louis College of Pharmacy maintains a strong commitment to residency training. For the 2008-2009 training year, St. Louis College of Pharmacy directly supports 11 of the 30 pharmacy residents in the St. Louis Metropolitan area, but also indirectly supports the training of many others.

*Program type and design:* St. Louis College of Pharmacy uses multiple models for the structure of pharmacy residency training. Over the years, a variety of general and specialty residency programs have been offered. Currently, the College is the sponsoring organization for three pharmacy residency training programs: a Post graduate Year one (PGY-1) program and PGY-2 programs in Internal Medicine and Pharmacy Informatics. In each of these programs, the close affiliation with the practice sites ensures adequate patient care experience and additional support for the resident. The College also provides support for residents in multiple other programs. This support may be limited to providing training in teaching/education or may also include providing faculty who serve as primary preceptors for the residents. St. Louis College of Pharmacy also coordinates resident seminars and a residency banquet for all programs in the St. Louis Metropolitan area. A committee of representatives from each of the area programs works cooperatively to plan these events and facilitate off-site elective rotations.

A variety of methods have also been used for funding. St. Louis College of Pharmacy directly funds some of the resident stipends while some resident positions are funded through the practice site. In some cases, programs initiated by the College have subsequently been transferred to the practice site while still maintaining the affiliation with the College. Residency programs benefit the College through didactic and experiential teaching of pharmacy students provided by the residents and through support of faculty. Although pharmacy residency training is not specifically outlined as part of the College's mission or strategic plan, it has for many years been a part of the mission and strategic goals of the Division of Pharmacy Practice. The ability to provide structured training and experience for the residents in both didactic and experiential education has provided St. Louis College of Pharmacy and academia with individuals uniquely prepared for entry-level faculty positions.

St. Louis College of Pharmacy has established affiliation agreements that describe the role and responsibilities of the College and Faculty. Faculty may serve as program directors, primary preceptors or preceptors of elective rotations. For the programs in which faculty serve as residency program directors, the College is responsible for coordination of resident recruitment, applications, and interviewing. This allows candidates to interview for more than one residency program during an on-site visit and has improved our ability to effectively fill resident positions. All PGY-1 resident positions for the 2008-2009 year were filled through the ASHP Match

process. Coordination of the recruitment process has increased resident applications. Applications for the PGY-1 residency program grew from 32 in 2008 to 51 for 2009.

During the early years of St. Louis College of Pharmacy's involvement with pharmacy residency training, it was recognized that pharmacy practice faculty needed to be prepared for both the teaching and clinical responsibilities of their position. A formalized training program was developed in 1994 to provide workshops on ability-based education, active learning strategies for the classroom, and assessment/feedback. As of 2007, this program was re-structured as a teaching certificate program, and topics such as use of technology in the classroom and experiential education were added. As part of this program, residents work together to prepare materials to deliver a didactic elective course for pharmacy students. The combination of formal training, supervised classroom teaching experiences, and assessment/feedback have been critical to the success of this program. This program is available to all pharmacy residents from the St. Louis Metropolitan area. Since 1991, 28 faculty have served as primary preceptors/program directors for pharmacy residents. Residents provide additional support for clinical services and experiential teaching provided by faculty. Resident projects often provide opportunities to expand clinical services at the practice site. This may provide the residents and faculty opportunities to present the projects at professional meetings.

### **Outcomes**

The goal of St. Louis College of Pharmacy Residency programs is to prepare individuals as clinical pharmacists and pharmacy practice faculty. Of the 118 individuals who have completed residency training since 1992, 55% obtained advanced certification (e.g. - BCPS). A total of 52% of residency graduates have held faculty positions at some point in their career, with 35% of graduates serving as St. Louis College of Pharmacy faculty. These data do not reflect the potential impact the program may have had on any of the hundreds of residents from St. Louis Metropolitan Area residency programs who also participated in the teaching workshops and who may be serving as pharmacy faculty or preceptors.

The benefits of sponsoring pharmacy residency training may not be readily apparent to colleges of pharmacy. Financial and faculty resources are required to effectively develop residency programs with sufficient practice and educational abilities. Teaching experiences must be developed which complement the practice experience, support the educational mission of the College, and adequately prepare the residents for entry-level faculty responsibilities. Faculty must also have sufficient time to dedicate to training residents, particularly early in the training year. Some faculty will need guidance in supervising residents so that they provide the proper balance of supervision and independence. A well-developed residency program can provide support for faculty preceptors and serve as a training ground for new pharmacy practice faculty.

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## **Texas Tech University Health Sciences Center**

School of Pharmacy

Dallas, TX 75216

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships in Conducting Residency Programs*

#### **Description**

North Texas VA Medical Center has had an ASHP-accredited PGY1 pharmacy practice residency program (n=1) since 1996. In 2000, an academic practice partnership was established with TTUHSC School of Pharmacy. As a result, the residency program became affiliated with the school and expanded (n=2). Clinical pharmacy faculty members were hired in key areas such as critical care, ambulatory care, internal medicine, and geriatrics and were awarded a 50% service contract to provide patient-oriented clinical pharmacy services and serve as preceptors for the residency program and student experiential clerkship rotations. The PGY1 residency program expanded again in 2001 (n=4) and in 2002, the first PGY2 specialty residency was established in critical care. In 2004, ASHP-accredited PG2 programs were added in pharmacotherapy, infectious diseases, & oncology. A PGY2 ambulatory care residency was initiated in 2006, followed by geriatrics & psychiatry in 2008. While the PGY1 residency still maintains accreditation through the practice site at VA North Texas Medical Center, all PGY2 residency programs maintain accreditation through TTUHSC School of Pharmacy. The programs were accredited based on the residency program director's primary affiliation. All PGY2 residencies are directed by faculty members employed by the school. Administratively, for strategic planning purposes, the PGY2 residency program directors work closely with the PGY1 residency program director, who is also the clinical coordinator for the hospital. All program directors are members of the Residency Advisory Councils for both the hospital and the school. The clinical coordinator aides with decisions about PGY2 residencies such as numbers of residents recruited, selection of residents for each program, dealing with disciplinary issues, accreditation issues pertaining to the practice site, etc. This involvement enhances communication and partnership between the school and the practice site.

In the past, TTUHSC School of Pharmacy provided benefits for residents and the VA-funded residencies provided no benefits, so residents were placed on a 50%/50% shared funding line between the school and the practice site so benefits could be offered to all residents. Due to changes in benefits administration, now residents are either 100% funded by the school (n=4) or 100% funded by the practice site (n=7). However, regardless of funding source, all residents are still treated identically as co-affiliated residents. Each year, 4-5 PGY1 pharmacy practice residency positions are offered by the VANTHCS and 2-3 PGY2 specialty residencies are funded based on critical areas of service coverage needs within the hospital. The remaining PGY2 programs are funded by the school. It is recognized that residents can be effective faculty and clinical pharmacist extenders so clinical pharmacy services can be offered to a broader array of patients.

Residency training has been part of the mission and vision of the TTUHSC School of Pharmacy since its inception. Originally, 14 residency positions (Assistant Instructors) were incorporated into the state-funded budget. The program has expanded due to strong partnerships with hospitals who have garnered either GME pass-through or internal funding for additional residency

positions. There are 4 state-funded positions typically allocated at the VANTHCS. Residencies are offered to mirror the medical model of teaching (attending, fellow, residents, interns = clinical pharmacy faculty member, pharmacy resident, P4 student, P3 student) since multiple APPE clerkships are offered in the P3 and P4 years. Clerkships are organized so pharmacy students and residents can interact with each other & aide in learning opportunities. Expansion of residency programs is incorporated into the school's strategic plan.

### **Outcomes**

*Benefits:* There are multiple benefits of an academic partnership for conducting residency programs. Benefits to the resident include the ability to learn from clinical preceptors (practical approach) at the site as well as faculty preceptors (academic approach). All residents have the opportunity to participate in the school's formal Clinician-Educator Teaching Certificate Program. Even if residents choose not to complete all the requirements necessary for the certificate, they are exposed to multiple lectures and discussions on experiential and small group teaching, professional development, research/IRB training, and development of scholarly activities. Involvement in these learning activities has increased the residents' success in conducting, presenting, and publishing their research projects. Another benefit of a joint program is the variety of residents and mix of PGY1 and PGY2 residents to enhance camaraderie and allow residents to use each other as a resource, in addition to the preceptors. The school provides resources for continuous professional development activities for both residents and preceptors. Direct benefits for patients include a broader scope of clinical pharmacist coverage. More pharmacists at the practice site provide more people to cover clinical issues, obtain medication histories, and provide discharge counseling. Indirect benefits to patients are incurred by resident development & implementation of protocols, provision of education to patients and staff, and participation in distributive functions. Although program directors vary, all residents are involved in a school-based resident workshop program and hospital-based orientation at the beginning of the program, monthly resident meetings throughout the year, and a joint graduation ceremony at the conclusion of the program.

*Outcomes:* This practice partnership between the VANTHCS and TTUHSC School of Pharmacy is successful because in a few short years, the residency opportunities dramatically expanded from 1 ASHP-accredited PGY1 position to 11 ASHP-accredited PGY1 and PGY2 residency positions. The program has gained national reputation and residency applications have increased by more than 50% in the past few years. There are 16 Board Certified Pharmacotherapy Specialists who have graduated from the program. Residents completing the VANTHCS and TTUHSC School of Pharmacy-sponsored residency programs have published more than 15 articles in peer-reviewed medical and pharmacy journals. Another marker of a successful outcome is the continual funding of the residencies in the joint program and the success in expanding the number of programs offered at the site.

*Barriers:* Potential barriers to implementation of such a program are ensuring optimal resources exist, such as office space, particularly as programs are added. Ensuring coordination of rotation schedules to minimize overlap on rotations or discrepancies in schedules, and ensuring participation of all preceptors and program directors in recruiting all residents regardless of affiliation, attending/participating in all resident presentations/activities regardless of affiliation, and solving common residency issues at the site are important for success. Without global participation amongst all faculty and clinical pharmacy staff, the program would not be as

successful. Advice for programs considering a similar affiliation is to maintain steady, open communication between program directors and between the school and hospital administration. With the number of residents employed by such an affiliation, it is important to coordinate activities amongst staff and other residents to ensure a quality training experience is achieved and that all residents are treated similarly, regardless of program director or primary affiliation.

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**Wilkes University**  
College of Pharmacy  
Wilkes-Barre, PA 18766

**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

**Description**

We developed University-based residency programs that are sustainable through temporary allocation of unfilled School-based faculty lines, followed by outside supporting grants. We feel that the method of our residency development can be reproducible to other newer community-based pharmacy schools.

Wilkes University currently offers three (3) residency programs, two in PGY1 Community, and one in PGY2 Ambulatory Care. Patient Care activities for each of these programs occur at affiliated practice locales with Wilkes University being the sponsoring organization.

Prior to the development of Wilkes University's residency programs in 2003, no pharmacy residency training was being offered in northeastern Pennsylvania. Initial start-up of the residency programs began in 2003 with an Ambulatory Care Residency. The decision to embark on the development of a residency was predicated on faculty interest, available funding, and site feasibility for the residency. This first residency program was directed by two interested faculty members at two separate practice locales, a Veterans Affairs Medical Center, and a Family Medicine Practice. Initial funding for the residency program was granted from the school of pharmacy through an unused partial faculty line. Following the initial year, the school obtained partial funding for the program from each of the affiliated sites in 2004, and then in 2005 became fully supported by grants from these sites. Practice sites recognized the value of the residents to their institutions, along with the value of the University Faculty, as evidenced by their quick and substantial grant support for the School's residency training. In addition, this new endeavor and culture, along with the renewed level of commitment by the Veterans Administration to support pharmacy residency training, fueled the development of a separate PGY1 residency at the affiliated VA in the summer of 2007.

University allocation for these residency positions continues through the summer of 2009 with an unfilled faculty line. Acquired grant support for the programs remains in a separate departmental fund and is used to support the development of additional residency programs, the promotion of residency activities, pharmacy student awareness and travel, and remains a means to assure temporary continuation of residencies in case external funding should cease. A Departmental Residency Committee was commissioned in the summer of 2006 to oversee residency activities, and a Director of Residency Programs was established in 2008 to coordinate residency logistics, and assist with budgetary decisions.

2009 will mark the first year when an allocated faculty line will not support residency training. Although initially, the reallocation of the faculty line to support residency salaries was planned to be ongoing, during a reaccreditation visit, ACPE expressed some concern about the practice, and with subsequent School consent, this lines were returned back to the original faculty line.

Although the promotion of residency training was not an initial part of the School's initial Strategic Plan (School had first graduating class in 2000), support for developing and existing residencies was highlighted as a Strategic Initiative in the 2007 revision under the area of faculty development. This was supported by the existing departmental success with residency training, expanding faculty interest in residency training, the 2006 ACPE School of Pharmacy Accreditation Report, the Final Report, Deans' Council Task Force on Post Graduate Pharmacy (Residency) Education, and an internal departmental (pharmacy practice) Ad Hoc subcommittee report on residency funding. The School's future Pro-Forma budget allocates one additional FTE to residency training, along with the teaching value residents provide while gaining post-graduate education training within the School's Teaching Certificate Program.

Current and future residency program development depends upon the principle that the School of Pharmacy can maintain adequate support from the affiliated sites. A drawback to the development of PGY1 Pharmacy Residency programs is the inability to secure CMS funding when the program is sponsored by the School of Pharmacy. Hence, funding for these programs requires each practice site to find enough value in the residency to support through their internal budget. Since acquiring CMS funding becomes unlikely for a school of pharmacy directed program, Wilkes University recently decided to primarily pursue non-CMS-dependent residencies. Opportunities became available within regional pharmacies interested in developing quality PGY1 Community Pharmacy residencies. Interest in developing residencies came from one independent pharmacy owner and a faculty member located at another franchised community pharmacy site. In both cases, contracts noting roles and responsibilities were drafted, with the school of pharmacy acting as the sponsoring organization. Although in their infancy, these programs will have a positive impact on the quality of patient care and student experiences in the region. In addition, the low numbers of PGY1 Community Residencies nationally, along with 2007 updated pharmacy practice standards within Pennsylvania provide for fertile grounds for community residency development and sustainability.

### **Outcomes**

The School of Pharmacy at Wilkes University has successfully collaborated with affiliated institutions to implement and sustain several residency programs. Our model of initially and temporarily using unfilled faculty lines to develop residencies resulted in sustained outside support and mutual School and Practice Site recognition of the value of residency training.

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**Xavier University of Louisiana**  
College of Pharmacy  
New Orleans, LA 70125

**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Successful Partnerships for Conducting Residency Programs*

**Description**

Xavier College of Pharmacy is the sponsoring organization of two PGY-1 Pharmacy Residency Programs: 1) a Community Pharmacy Residency Program in partnership with the Rite-Aid Corporation and 2) a Pharmacy Practice Program with emphasis in Ambulatory Care. The Ambulatory Care program is currently affiliated with seven (7) residency training sites for the Pharmacy Practice Residency with emphasis in Ambulatory Care. A description of each site is listed below:

- *Xavier/Rite Aid Pharmacy Care Center*: Pharmacist-directed disease state management center in a community/retail setting. Target disease states for MTM services include but are not limited to diabetes and cardiovascular disease. This practice site has a large community service component the majority of which is currently conducted at a local assisted living facility and senior centers
- *Medical Center of Louisiana - General Medicine Clinic*: Clinical pharmacy services provided inclusive of but not limited to medication therapy management (MTM) of hypertension, diabetes and dyslipidemia patient education and counseling. Special emphasis is placed on common disease states and their effects on the female population with special services provided in the areas of menopause counseling and osteoporosis screening.
- *Medical Center of Louisiana - HIV HOP Clinic*: Consultant clinical pharmacy services in HIV/AIDS care to providers and patients on an ongoing basis. Practice involves patient and provider education, individual and group clinical consultations, telemedicine series to providers, individual and group traineeships, development of clinical materials in response to questions and hands-on problem-solving with medication-related issues in the complex process of HIV/AIDS disease management.
- *Medical Center of Louisiana - Coumadin Clinic*: Free-standing outpatient treatment facility providing warfarin therapy management services including but not limited to, protocol-based dosing adjustments and patient education.
- *Jefferson Community Healthcare Center, Inc. (JCHC)*: Clinical pharmacy services inclusive of, but not limited to, the following disease state management services: diabetes education and management, hypertension education and management, cholesterol education and management, and obesity education.
- *Ochsner Clinic Foundation Asthma Education Center*: Multidisciplinary ambulatory care clinic primarily providing asthma education and management.
- *Xavier University Health & Wellness Center*: Pharmacist-directed, freestanding health center. Services include diabetes education and management.
- *Tulane University Hospital Clinic*: Primary care, infectious diseases clinic provides primary care for HIV infected patients, consult services, medication management and adherence.

- *Algiers Community Health Clinic*: Clinical ambulatory practice setting working under collaborative practice agreement with a focus on provision of direct patient care in the following disease states: hypertension, diabetes, and dyslipidemia.
- *Multi Practice Clinic*: Multi-disciplinary health clinic providing MTM services in the following areas: diabetes, hypertension and hyperlipidemia education and management.

### **Outcomes**

Following six months of activity, both residency programs have been deemed successful due to the positive evaluations of and feedback from the residents themselves, attending physicians, medical residents, pharmacy preceptors, nurse practitioners and other members of the interdisciplinary teams that have interacted with the program.

*Barriers*: Due to the post-Katrina challenges to the health care system in the city of New Orleans, the College felt that the additional training of pharmacists in residency programs and enhancement of their skill set to provide clinical services was paramount to the enhancement of patient care and recovery of healthcare in the region. The most intense challenge faced has been the significant shrinkage of the blueprint of the Downtown Medical District following the storm resulting in the closure of what was once categorized as the number one Trauma Center in the country and the largest public hospital in the state of Louisiana. Other barriers and challenges include continual changes in pharmacy personnel, hospital, clinic and staff administration, and ongoing renovations/remodeling resulting in displacement from time to time.

*Lessons*: The successful development and implementation of a PGY-1 residency program requires intense organization and preparation, tremendous patience, and extensive networking.

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**Area of Successful Practice: Combined Residency/Graduate Degree Programs**

## **The University of Texas at Austin**

College of Pharmacy

Austin, TX 78712

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Combined Residency/Graduate Degree Programs*

#### **Description**

M.S. Degree in Pharmacy Practice and Administration with Concurrent ASHP-Accredited Residency in Ambulatory Care

The goal of the Pharmacy Administration Master's program with residency is to develop excellent researchers and clinicians in the areas of health outcomes, pharmacoeconomics, social and behavioral pharmacy, and pharmacy management.

Students engage in a two-year integrated residency and graduate training program and work jointly with Pharmacy Administration and Pharmacy Practice faculty. This partnership consists of both research and clinical (practice-based) faculty.

*Residency description:* The Ambulatory Care Specialty Residency is conducted in conjunction with the college of pharmacy and several practice-based sites: family practice, city clinics, and community health centers. This comprehensive and individualized residency provides extensive primary care training and experience in primary care to patients in a variety of outpatient settings. The resident participates in pharmacist-managed clinics which encompass anticoagulation, diabetes, hepatitis C, hypertension, hyperlipidemia, smoking cessation and nutrition counseling. In addition, primary care residents have the opportunity to further develop their teaching and clinical research skills.

*Master's description:* The M.S. degree requires 24 credit hours of coursework (6 of which are fulfilled by the residency) and six credit hours of thesis. The thesis project is typically developed from practice-related issues encountered during the residency. In addition to the thesis, students are required to complete a manuscript suitable for publication. Some of the courses offered by the Pharmacy Administration Division include: Research Design and Methodology, Data Analysis, Pharmacoeconomics, Pharmacoepidemiology, Managed Health Care Systems, Health-related Quality of Life, Social Behavioral Theories, Pharmaceutical Marketing, and Advanced Hospital Pharmacy. There are many opportunities for graduate students to become involved with the teaching programs by serving as teaching assistants, facilitators, or lecturers. In addition, some students hold research assistantships and become heavily involved in research.

Students must meet the admission requirements for both the residency program, as well as the graduate program. Applicants have been successful in meeting requirements, however, many are unaware of the GRE and/or have not taken the GRE.

*Financial support* (tuition/fees, stipend, partial tuition waiver): Students enrolled in the M.S./residency program are paid as 12-month one-half time Teaching Assistants (TA). The 2008-2009 stipend is \$29,000. Salaries are increased each year. The TA appointment qualifies M.S./residents to pay resident tuition and to enroll in BlueCross BlueShield of Texas (PPO), the

University-paid staff health insurance plan. Each semester TAs receive tuition assistance. The 2008-2009 tuition assistance rate is \$3,258 in the fall and spring semesters and \$1,218 for the summer. The out-of-pocket portion of the tuition is generally around \$1,300 per semester.

### **Outcomes**

This combined program was developed in 2007 and we interviewed 3 candidates for the position. We admitted one candidate (completed a PGY1 residency), who is currently in his first year of the program.

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## **The University of Texas at Austin**

College of Pharmacy

Austin, TX 78712

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Combined Residency/Graduate Degree Programs*

#### **Description**

M.S. Degree in Pharmacotherapy with Concurrent Specialty Practice Residency

The Pharmacotherapy Division of the College of Pharmacy, The University of Texas at Austin, located on the UTHSC at San Antonio, has developed a master's degree (Pharmacy) with thesis, which is offered alone or concurrently with a specialty practice residency.

This unique program capitalizes on San Antonio faculty strengths in both science and clinical practice, and results in a uniquely qualified graduate capable of making significant contributions to pharmacy practice, research, and education. The program is typically two years in length, with time divided between graduate education and research, and an intensive experiential component (2000 hours).

The objective of the graduate program in Pharmacotherapy is to prepare the individual for advanced clinical sciences research positions and academic pharmacy. The objective of the Pharmacotherapy Residency is to produce an individual educated and trained to provide advanced patient care at a level commensurate with BPS Board Certification. Moreover, the graduate will be prepared to successfully assume roles as a collaborator and investigator capable of developing research strategies that bring science to practice, with the ultimate goal of improved treatment outcomes. This capability distinguishes our graduates from those completing traditional residency programs.

*Residency description:* A significant portion of the experiential component necessary for the development of advanced practice skills required for the awarding of a residency certificate will be outside of the degree requirements and are coordinated through the student's approved plan of work. Specialty practice residency opportunities are available in variety of areas including Pharmacotherapy, Ambulatory Care, Oncology, Geriatrics, Psychiatry, Infectious Disease, and Solid Organ Transplant. Primary practice sites are University Hospital, South Texas Veterans' Medical Center, and the UTHSCSA Cancer Treatment Research Center. The patient-oriented components of our residency have the added benefit of enhancing the graduate student's sophistication in developing their research question and in applying research findings in the patient care setting.

*Master's description:* Each student's degree program is developed under the guidance of a Supervisory Committee and must include, at a minimum, thirty semester hours of graduate-level course work including the thesis. Master's students are required to take coursework in ethics, teaching methodologies, scientific communication, research design and methodologies, statistics and molecular biology. A variety of elective courses also is offered through the College of Pharmacy and the University of Texas Health Science Center at San Antonio. The M.S. degree is awarded after submission of a written thesis and successful defense of the student's research in

front of the graduate faculty of The University of Texas and affiliated institutions. Academic coursework, seminars, and a mentor relationship with a supervising professor and committee are designed to assist the student to attain the highest level of professional and academic competence in advanced pharmacy practice and science.

*Financial support:* (tuition/fees, stipend, partial tuition waiver): Students enrolled in the M.S./residency program are paid as 12-month one-half time Teaching Assistants (TA). The 2008-2009 stipend is \$29,000. Salaries are increased each year. The TA appointment qualifies M.S./residents to pay resident tuition and to enroll in BlueCross BlueShield of Texas (PPO), the University-paid staff health insurance plan. Each semester TAs receive tuition assistance. The 2008-2009 tuition assistance rate is \$3,258 in the fall and spring semesters and \$1,218 for the Summer. The out-of-pocket portion of the tuition is generally around \$1,300 per semester.

### **Outcomes**

Since the first class was enrolled in the M.S. Program in 2001, 15 students have been awarded M.S. degrees and specialty practice residency certificates. Currently, four students are in the first year of the M.S. program and three others are expected to complete their degree and residency requirements in 2009.

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## **The University of Texas at Austin**

College of Pharmacy

Austin, TX 78712

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Combined Residency/Graduate Degree Programs*

#### **Description**

M.S. Degree in Pharmacy Practice and Administration with Concurrent ASHP-Accredited Residency in Psychiatric Pharmacy

The goal of the Pharmacy Practice and Administration Master's program with residency is to develop excellent researchers and clinicians in the areas of psychiatric pharmacy and mental health outcomes research

Students engage in a two-year integrated residency and graduate training program and work jointly with Pharmacy Administration and Pharmacy Practice faculty. This partnership consists of both research and clinical (practice-based) faculty.

*Residency description:* The ASHP-Accredited Psychiatric Pharmacy Residency is conducted in conjunction with the college of pharmacy and several practice-based sites, including Seton Shoal Creek Hospital, the Seton Family of Hospitals, and Austin State Hospital. This comprehensive and individualized residency provides extensive training and experience in psychiatric pharmacy to patients in a variety of patient settings. Required rotations include adult acute care psychiatry, child and adolescent psychiatric, geriatric psychiatry, ambulatory care mental health, and clinical management. A variety of elective experiences are available. In addition, psychiatric pharmacy residents have the opportunity to further develop their teaching and clinical research skills.

*Masters description:* The M.S. degree requires 24 credit hours of coursework (6 of which are fulfilled by the residency) and six credit hours of thesis. The thesis project is typically developed from practice-related issues encountered during the residency. In addition to the thesis, students are required to complete a manuscript suitable for publication. Required courses include: Pathophysiology and Pharmacotherapy of Psychiatric Disorders, Methodology in Psychiatric Pharmacy and Mental Health Outcomes Research, Experimental Design and Research Methods in Pharmacy Administration, Experimental Design and Statistical Inference, Correlation and Regression Methods, Data Analysis, Written and Oral Communication Skills for Scientists, and Graduate Seminar. There are many opportunities for graduate students to become involved with the teaching programs by serving as teaching assistants, facilitators, or lecturers. In addition, some students hold research assistantships and become heavily involved in research.

Students must meet the admission requirements for both the residency program, as well as the graduate program. Applicants have been successful in meeting requirements, however, many are unaware of the GRE and/or have not taken the GRE.

*Financial support:* (tuition/fees, stipend, partial tuition waiver): Students enrolled in the M.S./residency program are paid as 12-month one-half time Teaching Assistants (TA). The 2008-2009 stipend is \$29,000. Salaries are increased each year. The TA appointment qualifies

M.S./residents to pay resident tuition and to enroll in BlueCross BlueShield of Texas (PPO), the University-paid staff health insurance plan. Each semester TAs receive tuition assistance. The 2008-2009 tuition assistance rate is \$3,258 in the Fall and Spring semesters and \$1,218 for the Summer. The out-of-pocket portion of the tuition is generally around \$1,300 per semester.

### **Outcomes**

This combined program was developed in 2001. Five individuals have satisfactorily completed the program, and two are in process. In addition, one person completed the residency in combination with a PhD degree, and one other is now in the process of completing his dissertation.

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**Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation**

## **The University of Georgia**

College of Pharmacy

Albany, GA 31701

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation*

#### **Description**

The primary determining factor for the college's participation in residency training is/was the faculty and the college's leadership to dedication to advancing the profession through residency training programs. Specific language has been written into the college's mission statement and strategic plan, as well as the mission/strategic plan for the Department of Clinical and Administrative Pharmacy. While residents are involved in patient care activities that are potentially reimbursable, they are not currently billing for their clinical activities and are not generating revenue at this time.

UGA has a Residency Steering Group Chaired by Dr. Brian Buck that is used for information sharing and development of all of UGA-affiliated sites, and beyond networking, to increase the extent and value of the college's involvement in residency training. UGA has implemented several programs through this group including the Resident Enrichment Series and the Teaching Certificate Program and has also developed an overall strategic plan/vision for sustained growth and advancement of the program. In the next year, plans are in place to expand into the Athens hospitals to meet increasing demand for training sites.

UGA offers a structured teaching certificate program for residents. The program is new, having been in place for only one year, so it does not have outcomes data and it is not known if it stimulates an interest in academic careers, though it is expected that it does. As part of the teaching certificate program residents are required to provide a certain number of hours of didactic and experiential teaching. Residents thus are integral to our professional curriculum.

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**University of Kentucky**  
College of Pharmacy  
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**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation*

**Description**

The University of Kentucky College of Pharmacy (COP) has been a direct partner in the conduct of both postgraduate year one (PGY1) and postgraduate year two (PGY2) residency programs since 1968. The longest standing residency training partnership is with University of Kentucky Hospital (now UKHealthCare). Begun in 1968, the residency program was delivered in conjunction with a post-baccalaureate Pharm.D. degree. The program evolved as did the professional degree approach within our profession, and is currently delivered as stand-alone PGY1 and PGY2 (i.e., ambulatory care, critical care, infectious diseases, internal medicine, oncology, pediatric) programs.

The COP is a financial and human resources partner in the conduct of the UKHealthCare residency programs. Approximately 20% of the stipend and benefits package for each PGY1 resident, and 30% of each PGY2 resident, is underwritten by the COP. Resident research and scholarly abilities are nurtured through a faculty-delivered scholarly skills seminar series, mentored research project, and financial support to develop, attend and deliver research findings at regional and national pharmacy meetings. A similar funding and support structure characterizes the COP's involvement, administration and delivery of a PGY1 Community Care residency program, in conjunction with 2 community practice partners.

In their role as part-time instructors, UK residents engage in didactic, laboratory-based, and experiential teaching. Residents also serve on college committees, participate in faculty retreats, and deliver developmental content (e.g., Dean's convocation) to professional degree students. The majority of residency program preceptors hold adjunct faculty appointments in the Department of Pharmacy Practice and Science. In these roles, faculty deliver didactic instruction, a significant amount of experiential education, maintain practice-based scholarship, and actively engage in the governance of the COP (e.g., committee service).

*Description of Practice.* Faculty members developed a teaching skill development program in 1999. While the majority of the residents had participated in teaching experiences, there were no formal processes for evaluation or provision of feedback, which hampered the residents' ability to monitor and improve their performance. Built upon the tenets of teaching as scholarship, the Scholarship of Teaching and Learning Certificate (STLC) was developed through collaboration between the COP's Office for Curriculum and Faculty Development and residency preceptors and residents. Through participation in a seminar series, completion of the college preceptor orientation continuing education program, delivery of formal teaching experiences (e.g., lectures, group facilitation, clinical teaching), and development of a teaching portfolio, program participants document their activities and earn a certificate of completion.

Over the years, the basic elements of the program have gone unchanged, while some have evolved to reflect contemporary educational issues (e.g., interprofessional education) and

available instructional technology (e.g., discussion boards). Originally developed as an on-campus offering, the STLC program has been expanded via videoconference technology to sites across Kentucky.

Participants employ techniques learned during the seminars through instructional delivery. The nature of instruction provided can be customized to each participant's setting (e.g., on or off-campus) and profession (e.g., pharmacy, medicine). The minimum teaching requirements for all participants are 2 contact hours of didactic (e.g., classroom) and 8 hours small group or practice-based teaching (e.g., formal inservices). Residency program directors often set additional teaching requirements for their trainees. In the 2003-2004 academic year, 14 residents provided 94 hours of didactic instruction within the College of Pharmacy, 7 hours of didactic instruction on campus but outside of the College of Pharmacy, and 234 hours of small group facilitation. Each didactic instruction must incorporate at least one classroom assessment technique (CAT), and each teaching experience must be evaluated by the course teaching instructor or facilitator, the STLC participant (self-assessment), and the students/audience. Evaluation rubrics for each facet of teaching (including experiential education) have been developed, and are required to be completed by the resident, instructor/preceptor, and learner. Much of this assessment is supported through CoursEval.®

### **Outcomes**

The original program outcomes for the resident included the ability: to describe contemporary issues facing academia and learning, especially as they relate to pharmacy education; to develop well written syllabi which include concise, specific, and precise learning and educational objectives; to compose and evaluate effective small- and large-group learning experiences for specific target audiences; and to evaluate their own development as educators through personal reflection and assimilation of a teaching portfolio that contains documentation of accomplishments in this area.

A survey of the pilot group of participants indicated improvement in self-rated teaching effectiveness and knowledge of contemporary pharmacy education issues following STLC completion. A subsequent analysis of a ten-year cohort of pharmacy residency graduates, half of which trained in the era of the STLC, revealed statistically significant increases in reported self-confidence in 13 of 19 teaching abilities following the certificate completion. Within the same total survey cohort, 24% (n=60) anticipated an academic career prior to residency training, yet 77% (n=57) had some academic involvement in their current positions. The percentage of teaching time respondents currently allocated to individual activities was estimated at: APPE preceptor (75%); routine classroom teaching (42%); small group facilitation (40%); guest classroom teaching (37%); course coordination (28%); and student advising (21%).

### *Barriers to Implementation*

- As the program has grown, the pedagogical approaches have been somewhat limited, particularly with the ability to use real-time interactive approaches with multiple sites.
- As the program has gained more access to instructional technology, however, the need for requisite technical support (e.g., establishing and maintaining video links, hosting for video archives) has been noted.
- Minor changes to the program are made each year in response to contemporary issues and technologic availability. However, such a dynamic nature is not easily conducive to

individuals having extended timelines for completion (e.g., stretching completion into a PGY2 residency). This is akin to implementing curricular changes midstream.

- It is difficult to ensure enthusiastic participation from all learners, particularly those at distant sites who do not personally envision an academic career. A method to assess achievement of all required elements is needed.
- Identifying the optimal meeting schedule and sequencing of events is challenging. Residents need ample time to orient to their new environments, but too much time should not elapse before they begin their academic acclimation.

#### *Advice or Lessons Learned*

- While speakers outside of Pharmacy can add much value to the seminar series, they often need an orientation to the nature of residency training and its differentiation from a degree program.
- Engaging participants from differing practice sites requires a flexible approach to identifying suitable teaching opportunities. Their ability to provide in-class pharmacy student instruction is limited, but there can always be avenues for practice-based teaching. Broad thinking may be needed.
- Continuing education credit for seminar content is not valued by a newly licensed pharmacist (no credit needed).
- The program has become an important venue for graduate student and new faculty development, particularly for non-pharmacists who wish to develop their professional student teaching skills (unintended program benefit).

#### *Suggested Resources*

- <http://pharmacy.mc.uky.edu/programs/residency/stlcp.php>
- Romanelli F, Smith KM, Brandt BF. Certificate program in teaching for pharmacy residents. *Am J Health-Syst Pharm* 2001; 58:896-8.
- Romanelli F, Smith KM, Brandt BF. Teaching residents how to teach: a scholarship of teaching and learning certificate program (STLC) for pharmacy residents. *Am J Pharm Ed.* 2005;69:126-32.

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**University of Michigan**  
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**College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation*

**Description**

The residency programs offer residents opportunities to interact with students in a variety of settings. Residents are frequently involved in precepting or co-precepting Pharm.D. students on clinical rotations. The residents' responsibilities in precepting students varies depending upon the individual residency program, the individual needs of the student(s) or resident(s), the needs of the clinical practice site and the teaching philosophy of the residency/clerkship preceptor. For example, the PGY2 Hematology/Oncology resident is responsible for precepting at least one Pharm.D. student during the course of his/her residency, acting as the primary person responsible for teaching and evaluating the student's performance on the rotation. A PGY1 resident on his/her first rotation, however, may be expected to act more in the role of a peer mentor, helping the students to answer questions they may have, while the clinician is still responsible for providing the performance evaluation for both the student and the resident.

Each of the residents also has the opportunity to participate in classroom teaching for one of the pharmaceutical care labs for the Pharm.D. students in their P3 year (the semester before the students start their clerkship rotations). This pharmaceutical care laboratory is a skills based course. The residents' roles in this course are to act as small group facilitators. Their primary responsibilities are to teach the students the particular skill for the week (e.g. blood pressure technique) and then to assess the students' performances of the skill. The program has recently set specific residency goals and objectives for this activity on which the residents will be evaluated by the course coordinators twice over the course of the semester (midpoint and final evaluations). Additionally, a Web evaluation tool is being established so that students may evaluate the residents' teaching skills at the completion of the semester, in a fashion similar to how faculty are evaluated by students in each course.

PGY2 residents may have the additional opportunity to deliver a lecture in a didactic setting; usually in one of the elective courses offered at the College of Pharmacy. For example, the pediatrics resident is expected to deliver a lecture in the Pediatric Pharmacotherapy course while the critical care resident has the opportunity to deliver a lecture in the Critical Care Medicine elective. The residents usually work with one of the faculty involved in teaching the elective course to develop the lecture and exam material, in order to mentor these skills.

In an attempt to foster an interest in academia for residents, a teaching certificate program has also recently begun. In order for the residents' to earn a certificate of completion of the teaching program, they must prepare a teaching portfolio, complete a teaching rotation (or have equivalent experience) and participate in 75-80% of our resident teaching discussion series. The goal of the resident teaching discussion series is to expose our residents to various aspects of teaching. The series takes place approximately once per month, with the goal of discussing 8-10 topics per residency year. Some of the topics that are addressed during the discussion series include: Bloom's taxonomy; preparing learning objectives and materials; academic integrity; preparing a

portfolio; teaching and evaluation in the experiential setting; interactive teaching; assessment of learning; and dealing with difficult students. The teaching discussion series is lead by both tenure-track and non-tenure-track faculty who are typically either senior or mid-level faculty. Given that many residency programs do not have the resources to provide a lot of mentorship in the area of academia, the teaching discussion series is also utilized to help in the career development of junior faculty, who are invited to attend the discussions, as well.

### **Outcomes**

The primary avenue in which participation in the residency programs contributes to faculty development is in the area of scholarly activity. Each of the residents is required to participate in both a writing and a research (hypothesis driven) project under the mentorship of a practitioner, most of whom also hold an academic appointment at the College of Pharmacy. The expectation of the residency committee is that each of these projects will be in a publishable format by the end of the residency year. By working with and mentoring a resident in either a research or a writing project, the faculty member is also able to receive a publication from the process, which is taken into consideration during promotion and tenure reviews.

Activities such as mentoring a resident for one of his/her residency projects, acting as a career mentor for a resident or precepting a resident on a clinical rotation are also valued as teaching activities by the College of Pharmacy and are considered during promotion or tenure reviews. In addition to these activities, faculty members who provide professional service by serving on the Residency Advisory Committee are also recognized for their involvement, which is taken into consideration during promotion and tenure reviews; as is serving as a PGY2 program director.

The one area in which the program is still struggling in regards to faculty development through the residency program is in the area of chairmanship of the Residency Advisory Committee. Although this activity is acknowledged as valuable by the College of Pharmacy, and weighted as such in comparison to other college committees, there currently exists a belief that it is undervalued by administration within the College compared to the responsibilities undertaken by the chair. Additionally, the chairperson of the committee typically has a high workload in coordinating many of the residency activities (e.g. orientation for new residents, recruitment activities for residency candidates), which has led to some difficulty finding practitioners to chair the committee. Many also believe that this increase in workload will also decrease their abilities to be productive in the area of scholarly activity, which will ultimately delay their abilities to become promoted. The program is still in the process of evaluating methods to foster a stronger commitment to the chairmanship of the residency committee within the division. Some of the potential solutions we are considering include dividing the responsibilities of the chair among all of the committee members to lessen the chair's workload (e.g. one person responsible for orientation, one person responsible for recruitment, one person responsible for managing evaluations), as well as, selecting a permanent chairperson for the committee.

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## **The University of Oklahoma Health Sciences Center**

College of Pharmacy  
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### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation*

#### **Description**

The University of Oklahoma Health Sciences Center College of Pharmacy (OUHSC COP) partners with various practice sites in the Oklahoma City and Tulsa metropolitan areas to conduct ten pharmacy residency programs. Post graduate year one (PGY1) programs offered include Pharmacy (formerly Pharmacy Practice), Community Pharmacy (two programs), and Managed Care Pharmacy. Post graduate year two (PGY2) programs offered include Ambulatory Care, Cardiology, HIV Pharmacotherapy, Internal Medicine, Oncology, and Pediatric Pharmacy. Residency program development and management is a function of the College, and residency training is incorporated into the College's strategic plan. The Residency Review Committee (RRC), which was developed to provide administrative oversight for all residency programs, is a standing college committee.

In 2003, the College embarked on a process of revising its approach to residency program design and management. One outcome of this work was the decision to develop teaching skills in all residents to augment the pool of qualified faculty candidates in the state; therefore, teaching is a major component of all residency programs and is integrated into most, if not all, learning experiences. In 2004, a structured teaching curriculum was designed by the Assistant Dean for Assessment and Evaluation. Elements of the curriculum include a month-long teaching rotation, longitudinal teaching activities, and a teaching series during Resident Rounds, a required weekly seminar for residents. Upon successful completion of all elements and at the end of the residency year, residents are awarded a teaching certificate.

During the teaching rotation, residents attend educational workshops and related meetings (e.g. OUHSC Education Grand Rounds, OUHSC COP Curriculum Committee) and a Preparing Future Faculty class. Residents teach pharmacy students in the Pharmacy Practice Lab, facilitate small group journal club activities in the Advanced Drug Literature Evaluation course, and assist with team- and case-based learning activities in various courses. Residents gain course administration experience through assisting with exam set up and proctoring as well as peer teaching evaluation. PGY2 residents gain additional course administration experience through participation in syllabus construction, designing course materials using Blackboard™, grading, and assuming primary leadership during at least one P-4 rotation. To end the rotation experience, residents complete a teaching portfolio. Longitudinal teaching activities include completion of three teaching observations, participation in additional teaching workshops, delivery of at least two formal lectures (including objectives, handout, slides, and test questions) to pharmacy or physician assistant students, additional small group facilitation and teaching activities, and experiential teaching during clinical rotations. At each step of the lecture preparation process, residents receive mentoring from their education preceptor, a content expert, and the course coordinator. Clinical rotation teaching may include assisting with student precepting and rotation performance assessment, mentoring students during daily patient care activities, and facilitating topic discussions. Topics such as writing lecture objectives, mapping lectures and creating slides,

writing test questions, and lecture preparation and presentation are covered during Resident Rounds. Residents are expected to complete pre-assignments and participate fully in these interactive sessions. Residents receive both formative and summative feedback on their teaching performance and related assignments. The education rotation is evaluated in the same manner as other rotations, using the ResiTrak™ system and face-to-face evaluation review. Lectures are formally observed and assessed by the education preceptor and/or course coordinator. After lecture delivery, residents are required to schedule a meeting with their education preceptor to discuss the lecture and assessment. Clinical rotation teaching is assessed by rotation preceptors and communicated to the resident on a regular basis.

### **Outcomes**

A structured approach to the delivery of the teaching curriculum to all residents has proven beneficial in many ways. While formal analysis of this approach has not yet taken place, several observations have been made by education preceptors, rotation preceptors, residency program directors, and students. Through formal instruction in effective strategies and methods for designing and assessing educational activities, good teaching habits are promoted early in residents' careers. A mentored teaching experience in an environment where residents practice and receive feedback prior to lecture delivery has increased presentation quality and enhanced resident confidence. The education rotation helps set the stage for maintaining a teaching portfolio and creates an expectation for peer review. The rotation also gives residents the opportunity to participate in faculty development.

Resident teaching is viewed differently since the implementation of the resident teaching curriculum. Teaching residents to teach is now considered a team effort by those involved and the College as a whole. Residency graduates have provided positive feedback regarding the program, noting in particular the practical nature of workshops, activities, and assignments. Graduates have also commented on the ease at which knowledge and skills gained from the curriculum are incorporated into their own teaching. Since 2004, 10 of 19 (53%) residency graduates have held or currently hold faculty positions at colleges of pharmacy. Of the 2008-9 residency class, all three PGY2 residents are actively seeking faculty positions. Of the six PGY1 residents in the 2008-9 class, four are seeking PGY2 residencies and two are considering faculty positions.

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# University of Pittsburgh

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## College/School Involvement in Conducting Residency Programs

*Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation*

### Description

Increasingly, pharmacy residencies are becoming the standard for training pharmacists interested in pursuing advanced clinical and leadership positions in practice. Residency programs serve as an extension of didactic training and provide concentrated mentored training in specialized practice settings. They are considered essential for pharmacists considering pursuing advanced clinical specialist positions or faculty roles. Colleges and schools of pharmacy are uniquely positioned to serve as leaders in this paradigm shift due to their pedagogical expertise, knowledge in curricular instruction, and concentration of clinical knowledge. As a result, The University of Pittsburgh School of Pharmacy (the School) designed a comprehensive series of focused residency offerings for institutions interested in partnering to enhance their residency program. The program offerings are designed to provide a structured partnership opportunity which is packaged into tiers with an increasing level of participation by the School depending on the interest and need of the participating program.

*Tier 1: Research Oversight.* Accredited residency programs require each resident to complete a major project which is suitable for publication before graduating. While many residency programs are well equipped to provide clinical services, some are in need of guidance regarding these major research projects. As a result, the School has partnered to provide oversight to ensure that the projects meet the necessary scientific rigor and are of suitable research design. Programs selecting this level of partnership have their residents participate in the Residency Research Program (RRP). The intent of the RRP is to provide intensive guidance and instruction to each resident regarding their research project. During the months of July and August, residents attend an 8 part lecture series on topics related to research. Topics vary from writing a research hypothesis and aim, preparing an Institutional Review Board (IRB) submission, research methods, design, statistics, and manuscript preparation. Each resident is subsequently assigned to a small working group which consists of a lead faculty mentor and two supporting faculty research facilitators to oversee the research of 4-5 residents. Groups are selected based on faculty expertise and project selection. These groups meet twice monthly for the first 5 months and monthly thereafter. Each resident presents to the group based on a pre-set schedule including the following milestones: hypothesis and aims, data collection and final manuscript. This ensures that resident progress is tracked and that each project is completed. Each group also provides guidance on collecting data and statistical analysis as needed. Each small working group subsequently reports into the larger oversight group consisting of several faculty members and each of the small group leaders. The large group meets quarterly and residents gain experience presenting in front of a larger group of peers in a more formal setting.

*Tier 2: Presentations & Seminars.* Programs interested in additional opportunities to partner with the School are able to participate in additional activities beyond the research oversight. These programs can partner for additional activities which include participation in journal clubs and seminar presentations, and a variety of collaborative activities including social functions. Each

resident is required to present two journal clubs annually, and two seminar presentations. Journal clubs involve the presentation of current journal articles to a group of residents and faculty members in a large roundtable setting. Residents are given written feedback from audience members and coaching is provided in an individual setting with the program director and the Seminar Director. Seminar presentations are formal lectures given by the resident on a topic of their choice. Residents are encouraged to select topics which are controversial and will subsequently provoke discussion which must be managed.

*Tier 3: Affiliated Programs.* Programs interested in additional opportunities to partner with the School can opt for a more formal affiliation agreement. By entering into a formal affiliation agreement, the School assumes partial accountability for the quality, structure, and integrity of the program with respect to the program outcomes. As such, the School works with the program to review rotation design, intended intermediate and terminal outcomes, and the overall program structure. Programs entering into a formal affiliation agreement have the ability to utilize School rotation sites with faculty members on a limited basis to expand their program offerings. In exchange, School-based programs can utilize the affiliation program sites on a limited basis. In addition, the program participates in the Residency Council, a governance group consisting of program directors which meets monthly to set the overall direction of the School with respect to residency programs, dictate policy, and review program alignment. Further, the School participates in the accreditation process for each program. Residency certificates indicate that the program was offered in affiliation with the University of Pittsburgh School of Pharmacy.

*Tier 4: School-Based Programs.* The final tier involves complete management of the residency program including all of the previous components. Programs which are School-based are recruited by the School using all available School resources including marketing materials, Website prominence, and the national reputation of the School. Rotations are coordinated through the faculty and preference is given at existing faculty sites. Residents rotate through sites across the 20-hospital University of Pittsburgh Medical Center (UPMC) Health-System in addition to existing School rotations in other venues. This provides maximum flexibility through the existing School network. Additionally, residents participate in a series of structured teaching opportunities, including: precepting, problem-based learning (PBL) sessions, small group learning sessions, precepting, and large formal didactic teaching. Students interested in a structured learning experience in teaching can select to participate in a Master of Teaching program offered through the School. As a result of the School affiliations with UPMC, residents have the opportunity to participate on multidisciplinary committees, drug-use initiatives, pathway development, medication safety efforts, a variety of evidence-based pharmacotherapy programs. Due to the extensive faculty in the pharmaceutical sciences, resident research projects can extend in additional directions beyond those offered in the clinical setting. Residents have access to the leadership of the School for mentoring and networking. Residency certificates indicate that the program was offered through the University of Pittsburgh School of Pharmacy.

### **Outcomes**

Program feedback is received from a variety of sources. During the program, residents meet with preceptors daily for feedback and evaluations are received monthly from both the residents and the preceptors. This is used to make immediate adjustments to the rotation, the program, and the individualized resident experience. Resident progress is also reviewed with the resident quarterly which involves the resident, Program Director, Director of Pharmacy, and Executive Director.

This allows for longitudinal guidance and involves reviewing trends and direction setting. Adjustments to the program are made along with prospective rotation changes. As noted, research progress is tracked bi-weekly in small groups and quarterly in larger groups. Residents maintain binders of their progress throughout the program which are reviewed at determined intervals. Final progress is evaluated upon graduation and through exit interviews. Overall program feedback is received monthly at the Residency Council, at monthly “Brown Bag” lunches hosted by the Chair of the Residency Council, Director of Pharmacy, Department Chair, and the residents, and quarterly in the individual program Residency Advisory Groups. In addition, extensive feedback is received, from past graduates, prospective employers, preceptors, School faculty, and through the national accreditation process.

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## **Texas Tech University Health Sciences Center**

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### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Residency Training as a Foundation for Faculty Preparation*

#### **Description**

The TTUHSC School of Pharmacy Pharmacotherapy Residency Program is a 2-year residency training experience which has been offered on all 4 of our campuses starting in July 2000. The Clinician-Educator Training Program began as a structured learning experience within the Pharmacotherapy Residency programs directed by Dr. Krystal Haase and Dr. Charles Seifert (after which the program was expanded 3 years ago for all TTUHSC School of Pharmacy residents). The Clinician-Educator Training Program provides training for residents who are interested in developing their academic skills. The major goal of the training program is to supplement a strong clinical background with the skills needed to become a successful educator.

The program is integrated within the 2-year residency in a variety of capacities: didactic and Web-based teaching models, mentored facilitator training for small-group problem-based learning, and experiential precepting of third and fourth-year Doctor of Pharmacy students. Residents also receive instruction in grant writing, statistics, and clinical trial design; submit a project proposal to the institutional review board; and collect, interpret, and publish their results. Additional activities are provided to enhance discovery, integration, and writing skills.

Residents attend a 2-day workshop at the beginning of the residency program to develop skills in experiential teaching (3-hour preceptor CE program), facilitating a problem-based learning course (including participation in a mock problem-based learning case session), developing a research project and navigating the IRB process.

During the program, residents are scheduled to provide 1-2 hours of formal didactic lecturing within the school of pharmacy programs. Residents are required to solicit faculty feedback on their lectures prior to delivery. During the lecture period, a faculty peer reviewer is assigned to evaluate the resident's skills while teaching the students. Residents receive this peer feedback in order to improve their didactic lecturing skills.

Experiential teaching involving both P3 and P4 students is integrated into the resident practice model. Early in the program, the residents observe faculty clerkship preceptors and become integrated into various aspects of clerkship teaching. After the first 6 months of the program, residents have the opportunity to independently precept clerkship students on 2 rotations per year. Residents are evaluated by the students on rotation & receive anonymous feedback annually through the clerkship office. Experiential resident teaching is also evaluated by the resident's supervising preceptor for the rotation by observations of resident planning & interaction with the students.

Residents are involved as group facilitators in the semester-long P3 Case Studies small group problem-based learning courses. The case studies course is a student-directed exercise that focuses on patient-centered care (fall semester) and population-based care (spring semester).

Facilitators are charged with ensuring students address self-identified learning issues and develop & present their own plan to solve the dilemma. The facilitator's role is not to teach the students, but rather to facilitate their discussion. Residents shadow faculty mentors for several cases, then the faculty mentor shadows the resident for several cases. Faculty members complete peer review assessments during the shadowing process to provide formal feedback for resident improvement. Then, the resident facilitates several cases on their own.

Throughout the year, residents participate in a discussion series associated with monthly resident meetings on innovative teaching-related topics based upon needs previously identified by new faculty members (i.e. handling difficult students, writing learning objectives, writing exam questions, developing a teaching philosophy, balancing life outside of career). Residents are assigned “homework” associated with each session to further apply and reflect upon the information discussed and are given feedback by the faculty member leading the discussion as well as their program director. An opportunity exists for an elective teaching rotation whereby residents can participate in more involved aspects of academia, such as committee work or course revisions. At the conclusion of the residency, a teaching portfolio of all teaching experiences, evaluations, and materials developed are turned into the Residency Advisory Council for review.

### **Outcomes**

The Clinician-Educator Training Program has increased the residency applicant pool at TTUHSC School of Pharmacy and enhanced recruitment of residency candidates with an interest in pursuing academia or having an affiliation with a pharmacy school. This 2-year program has produced 13 graduates, and 9 (69%) accepted academic positions upon graduation. Eight (61%) are currently employed in an academic career, and in this competitive market for faculty candidates, TTUHSC School of Pharmacy has retained 5 (38%) of these graduates for expansion of faculty positions within our school. Eleven graduates (85%) are BCPS certified and 1 holds CDE certification. Pharmacotherapy residency graduates who completed the Clinician-Educator Training Program have been very productive during their residency program in publishing a total of 9 review articles, 8 retrospective research projects, 4 prospective research projects, and 3 letters to the editor in peer-reviewed medical journals. In addition, they have presented more than 15 posters at national pharmacy and medical conferences.

Potential barriers to implementation of such a program include being able to have an organized system to track each resident's progress throughout the program, ensuring assignments are turned in, & ensuring feedback is provided to residents in a timely fashion. The program involves participation of multiple faculty for peer evaluating didactic lectures given by residents, hosting the monthly discussions, grading assignments, and mentoring the residents through the process. The program must have widespread support from faculty preceptors of the residency program to be successful. Another potential barrier is ensuring residents have a balanced approach to their residency program (clinical practice, teaching, & research). Many residents have difficulty with time management in incorporating all aspects required of this program with other duties. This was addressed in this program by mentoring discussions with residency program directors about different approaches for achieving the balance.

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**Area of Successful Practice: Residency Contribution to Faculty Development**

## **The University of Georgia**

College of Pharmacy

Albany, GA 31701

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Residency Contribution to Faculty Development*

#### **Description**

The primary determining factor for the college's participation in residency training is/was the faculty and the college's leadership to dedication to advancing the profession through residency training programs. Specific language has been written into the college's mission statement and strategic plan, as well as the mission/strategic plan for the Department of Clinical and Administrative Pharmacy. While residents are involved in patient care activities that are potentially reimbursable, they are not currently billing for their clinical activities and are not generating revenue at this time.

UGA has a Residency Steering Group Chaired by Dr. Brian Buck that is used for information sharing and development of all of UGA-affiliated sites, and beyond networking, to increase the extent and value of the college's involvement in residency training. UGA has implemented several programs through this group including the Resident Enrichment Series and the Teaching Certificate Program and has also developed an overall strategic plan/vision for sustained growth and advancement of the program. In the next year, plans are in place to expand into the Athens hospitals to meet increasing demand for training sites.

The community practice residency has brought some practice changes to the participating community pharmacies. They are offering programs they weren't previously able to offer including: Influenza and Herpes zoster vaccine protocols, Health screenings (Blood Pressure, DM, Bone Density), MTM research projects and implementation of a smoking cessation and self-care clinics, General MTM and Behavioral Health Services MTM.

Faculty participation in residency programs does foster research and scholarship. Several resident research projects have served as pilot projects for larger research projects and provided a basis for attaining funding.

Faculty participation in residency training would not factor into consideration for tenure. However, involvement in training residents is specifically mentioned in the promotion guidelines for clinical track (non-tenure) faculty. The residents definitely allow faculty to extend clinical services. For instance, in Albany the residents have an Ambulatory Care/Anticoagulation rotation for a longitudinal experience. This has allowed the faculty preceptor to expand his services to other clinics and increase his panel size.

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**Area of Successful Practice: Using Technology to Bridge Programs/Disciplines**

## **The University of Georgia**

College of Pharmacy

Albany, GA 31701

### **College/School Involvement in Conducting Residency Programs**

*Area of Successful Practice: Using Technology to Bridge Programs/Disciplines*

#### **Description**

The primary determining factor for the college's participation in residency training is/was the faculty and the college's leadership to dedication to advancing the profession through residency training programs. Specific language has been written into the college's mission statement and strategic plan, as well as the mission/strategic plan for the Department of Clinical and Administrative Pharmacy. While residents are involved in patient care activities that are potentially reimbursable, they are not currently billing for their clinical activities and are not generating revenue at this time.

UGA has a Residency Steering Group Chaired by Dr. Brian Buck that is used for information sharing and development of all of UGA-affiliated sites, and beyond networking, to increase the extent and value of the college's involvement in residency training. UGA has implemented several programs through this group including the Resident Enrichment Series and the Teaching Certificate Program and has also developed an overall strategic plan/vision for sustained growth and advancement of the program. In the next year, plans are in place to expand into the Athens hospitals to meet increasing demand for training sites.

Video conferencing technology is used for a weekly Pharmacy Grand Rounds. Residents attend the conferences and often serve as presenters. Athens and Augusta residents have participated in this for some time. The program is currently in the process of putting the technology in place to allow participation by the residents in Albany. It also has quarterly "Residency Enrichment" sessions that involve residents from multiple UGA-affiliated sites using distance learning/video conferencing. Topics for these sessions include discussing research questions and project design for major residency project, preparing for Midyear/Interviews/Networking, "Dress Rehearsal" for residency conference presentations, preparing and publishing a manuscript.

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