


## PROGRAMME DESCRIPTION

# Innovative approach to career pathway mentorship for pharmacy postgraduate training

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### Abstract

**Introduction:** This brief describes the results of two initiatives, a Postgraduate Training Seminar elective course and a P4 Postgraduate Mentorship Programme, on pharmacy residency match rates at a College of Pharmacy. **Description of programmes:** The Postgraduate Training Seminar elective course was developed to aid third-year pharmacy students interested in residency. The P4 Postgraduate Mentorship Programme was founded to help fourth-year students interested in postgraduate job attainment. **Evaluation:** For students participating in the elective, College of Pharmacy residency match rates varied in comparison to the national rates (2019: 55% vs 63%; 2020: 67% vs 65%; 2021: 94% vs 77%). In 2021, students who participated in both the elective course and mentorship programme achieved the highest match results compared to the national rate (2019: 38% vs 63%; 2021: 55% vs 77%). **Future plans:** Both initiatives will continue, with plans for the expansion of mentorship into the earlier years of the curriculum.

### Introduction

National organisations support postgraduate training as a requirement for clinical pharmacy practice (Murphy *et al.*, 2006; American Society of Health-System Pharmacists, 2020). Given this support, many colleges and schools of pharmacy are incorporating various strategies to prepare student pharmacists for the Residency Matching Program, a competitive and structured legal process of matching residency candidates with residency programmes hosted by the American Society of Health-System Pharmacists (Dunn *et al.*, 2010; Whittaker, Smith & Shan, 2017; American Society of Health-System Pharmacists, 2020). Between 2013 and 2022, the number of residency positions offered has had a relatively linear growth rate (National Matching Services Inc., 2022). Many colleges or schools of pharmacy include structured curricular postgraduate preparation and offer informal postgraduate sessions varying from panel discussions to didactic lectures to prepare students for residency training (Dunn *et al.*, 2010; Whittaker, Smith & Shan, 2017; Cady *et al.*, 2020). The Scholars Program is an example of a robust,

structured programme with an application process in the second year that mirrors residency applications (Slazak *et al.*, 2020). Programme activities include mentor assignments, specific courses to enhance didactic knowledge, a clinical introductory pharmacy practice experience (IPPE), journal clubs twice yearly, a research poster presentation, and a clinical and research advanced pharmacy practice experience (APPE) supervised by the mentor. Students participating in the Scholars Program had a statistically higher match rate than those who were not in the program (Slazak *et al.*, 2020). Other examples of structured residency preparation activities include postgraduate preparation electives and mentorship programmes. Most structured programmes included specific tracks with a designated course and rotation electives (Dunn *et al.*, 2010).

Postgraduate preparation electives have been described in the literature with conflicting results (Bryles Phillips *et al.*, 2012; Hammond *et al.*, 2018; Cady *et al.*, 2020; Cho *et al.*, 2020). Survey studies of postgraduate preparation electives have demonstrated statistically significant increases in student confidence

with various facets of the residency application. Despite enhanced confidence and familiarity with the application process, the presence of electives did not statistically correlate with improvement in school match rates in 2018 (Bryles Phillips *et al.*, 2012; Hammond *et al.*, 2018; Cho *et al.*, 2020). The presence of a pharmacy residency preparation course was also not a positive predictor of high match rates by the school (Cady *et al.*, 2020). When postgraduate year 1 (PGY1) residency programme directors (RPDs) were surveyed, they indicated that participation in a residency preparation elective would not sway their decisions, but roughly three-quarters of RPDs considered the electives beneficial for students (Johnson & Boehmer, 2021). Students and RPDs found the postgraduate preparations valuable, but the impact on match rates is unclear, given that nationally reported match data are not differentiated by elective participation. There is also potential for several confounders with data that are predominantly survey-based. One such confounder could be the presence of a mentor or a formalised mentorship programme.

Data describing the value of mentorship in the process of applying for and achieving postgraduate training is lacking in pharmacy-related literature. Many programmes have implemented different approaches to residency preparation, but a formalised mentorship programme has not been thoroughly assessed on a large scale (Dunn *et al.*, 2010). Some programmes have reported success after incorporating a mentoring component into a more structured postgraduate preparation programme, such as the Scholars Program discussed above (Slazak *et al.*, 2020). Compared to students who did not match, matched students reported significantly higher satisfaction with mentorship in Curriculum Vitae (CV) preparation, interview preparation, residency recruitment meeting preparation, and selection of programmes (Hammond *et al.*, 2016). One study reported mentee satisfaction with their professional development mentorship programme as high as 94% (Waghel *et al.*, 2017). One of the best pieces of evidence currently highlighting mentorship for postgraduate training comes from the St. Louis College of Pharmacy. They developed a year-long mentorship programme in the fourth year designed specifically for residency attainment. Throughout this programme, mentors helped students with CV and interview preparation, programme selection, and the PhORCAS application (Pharmacy Online Residency Centralised Application Service). A successful student match rate of 73% was attained as a result of the programme, and students perceived that it increased their preparedness for residency (Richter *et al.*, 2019).

Despite the evident discrepancy in the literature, incorporating mentorship into a more formalised setting for postgraduate training has had positive outcomes on

both student success and perceptions of their success. Development and participation in such programmes may help boost student match rates. This brief describes two initiatives, a Postgraduate Training Seminar elective course and a P4 Postgraduate Mentorship Programme, and their effects on pharmacy residency match rates at a College of Pharmacy.

## Description of programmes

The Postgraduate Training Seminar elective course was developed to aid third-year pharmacy students interested in residency attainment. The beginning of each class session provided information about a topic, such as writing letters of intent or preparing for interviews. Then students practised an exercise related to the application process. As part of the course, students prepared and received individualised feedback for all application materials, cases and disease state presentations, and a four-hour mock interview day. Additionally, students participated in a two-hour panel session comprised of local residency programme directors and pharmacy residents. Students prepared questions ahead of time and networked with these key individuals. This course partnered with experts from the University of North Texas Health Science Career Center to deliver content related to networking, social media presence, and mock interviews. The inclusion of the Career Center improved faculty workload and enhanced familiarity with available resources, such as virtual interviewing and one-on-one feedback, giving students various perspectives and a neutral arbiter for concerns when approaching faculty may seem intimidating. At the end of the course, each student met with a course director for a 20-minute feedback session about their application packet, strengths and weaknesses, and overall readiness for residency. The elective course schedule is displayed in Table I.

Initially, the Postgraduate Training Seminar elective course was implemented over two semesters in the third year. In spring 2019, the course directors changed the course to be delivered only in the spring for workload management. To ensure continuity from the Postgraduate Training Seminar elective course, the University of North Texas Health Science Center College of Pharmacy (UNTHSCCP) P4 Postgraduate Mentorship Programme was founded to help students interested in postgraduate job attainment. Individuals from the College of Pharmacy faculty, preceptors, and other community stakeholders interested in mentorship, served as mentors to interested fourth-year pharmacy students. Mentors were paired with students that best matched their pharmacy area of interest and met a

minimum of once per month. The P4 Postgraduate Mentorship Programme included a comprehensive timeline for students to prepare for the postgraduate search process, monthly presentations regarding job readiness and opportunities, multiple reviews of each student's CV and letters of interest, mock interviews with their respective mentors, and a mock interview day with faculty members from the College of Pharmacy. A sample checklist from the comprehensive timeline is

shown in Table II. During the pandemic, the P4 Postgraduate Mentorship Programme transitioned to synchronous, virtual presentations delivered monthly. Due to the increased faculty workload during the 2020-2021 year, the individualised mentorship component was forgone, but mock interview sessions were still provided. In Autumn 2021, the individualised mentorship component was reinitiated.

**Table I: Postgraduate training seminar elective course schedule**

Course session	Assignment
Introduction to postgraduate training	Professional SMART goal development
Curriculum vitae and letter of intent	Draft curriculum vitae and letter of intent
Training programme selection career panel	Panel reflection
PhorCAS Application	Submit list of desired programmes
Networking and elevator speech	Elevator speech video and personal branding activity
Clinical cases	Case completion
Interviewing skills	Mock interview recordings
Disease state presentations	Peer evaluations
Mock interview	None
Application packet review	None

**Table II: Excerpt from the 2021 UNTHSCCP P4 Postgraduate mentorship programme checklist**

December	Date Completed
<b>Task(s) to complete</b>	
<b>Attend December's P4 Mentorship Programme Meeting</b>	
Interviewing Preparation (Virtual interviewing and the Big Interview Resource)	
Recording will be made available afterwards	
<b>Schedule 2 Mock Interviews with your mentor and preceptor(s)</b>	
<b>Attend relevant networking opportunities/showcase</b>	
<ul style="list-style-type: none"> <li>Remember to send thank you e-mails or cards</li> <li>Top candidates will receive 3 interviews, attend a social event, and be invited for an onsite interview</li> </ul>	
<b>Finalise the list of desired postgraduate training and job opportunities</b>	
<ul style="list-style-type: none"> <li>Ensure diversity in your selections</li> <li>Re-assess and confirm available budget for interviews and networking events</li> </ul>	
<b>Send the list of desired postgraduate training and job opportunities to LOR writers</b>	
<ul style="list-style-type: none"> <li>Include relevant deadlines and details to aid with the development of your letter</li> <li>Send a reminder 1-2 weeks before the deadline (plan for absences during the holiday season)</li> <li>Send thank you e-mail or card to express appreciation</li> </ul>	
<b>Start completing postgraduate training and job applications</b>	
<ul style="list-style-type: none"> <li><a href="https://portal.phorcas.org/">https://portal.phorcas.org/</a></li> <li>Utilise job directories identified for relevant postings</li> <li>Create individualised Letters of Intent/Cover letters for EACH desired position (not just each specialty)</li> <li>Create a spreadsheet or guideline document with details of each position</li> <li>Request for transcripts from the Office of the Registrar early (plan for absences during the holiday season)</li> </ul>	
<b>Interview preparation</b>	
<ul style="list-style-type: none"> <li>Practice answering situational questions and case-based questions</li> <li>Prepare presentation topics and practice your delivery</li> </ul>	
<b>Important dates</b>	
December - PHORCAS application deadlines (programme-specific)	
December 5 <sup>th</sup> to 9 <sup>th</sup> - ASHP 2021 Midyear Meeting	
December 31 <sup>st</sup> - Recommended date to register for the Match	

**Evaluation**

Overall, students at the UNTHSCCP had fairly successful PGY1 residency match rates in 2019 and 2021 (46% and 80%, respectively). For students participating in the Postgraduate Training Seminar elective course, UNTHSCCP residency match rates varied compared to the national rate each year. The highest match results for the Postgraduate Training Seminar elective course were seen in 2021, where 24 students participated in the elective as opposed to 10 or 11 students in the other years. In that year, 15 out of 16 students participating in the Postgraduate Training Seminar elective course matched into residency programmes. However, students participating in the P4 Postgraduate Mentorship Programme had lower residency match

rates when compared to the national rate. Eight out of 23 students (35%) in 2019 and 10 out of 18 students in 2021 (55%) who participated in the P4 Postgraduate Mentorship Programme matched. Data are not reported for 2020 because the individualised mentorship component was not performed. Lastly, students who participated in both the Postgraduate Training Seminar elective course and the P4 Postgraduate Mentorship Programme had higher residency match rates when compared to the overall college residency match rate for 2019 and 2021. The residency match rates for the combination approach were also higher than the national match rate in 2021. In that year, every student who participated in both initiatives was matched into a residency programme. Residency match results are broken down by elective course and P4 mentorship programme involvement in Table III.

**Table III: Comparison of residency match rates among initiative participants**

Academic Year	Number of Participants (#)			PGY1 Residency Match Rate (%)				
	Elective	Mentoring Programme	Elective and Mentoring Programme	Elective*	Mentoring programme*	Elective and Mentoring Programme*	Overall College*	National*
2019	11	32	10	55	35	50	46	63
2020	10	n/a†	n/a†	67	n/a†	n/a†	38	65
2021	24	20	6	94	55	100	80	77
Total	45	52	16	76	44	69	55	

\* Combined Phase I and Phase II results for students who submitted a residency rank list

† Traditional mentoring pairing was not provided given the pandemic. Students were provided with monthly development webinars to assist with their application development.

PGY1=postgraduate year 1; n/a=not applicable

To the authors’ knowledge, this brief is the first description of the effect of both a formal mentorship programme and a postgraduate elective on residency match results. Students enrolled in the Postgraduate Training Seminar elective course were more successful than those who only committed to the P4 Postgraduate Mentorship Programme. The elective course was associated with similar match rates when compared to the national average, indicating that the Postgraduate Training Seminar course elective was likely effective in preparing students for the match process. In 2021, student pharmacists in the elective had a match rate of 94%, which is consistent with the literature for robust, multi-faceted programmes like the Scholars Program (Cady et al., 2020). In 2021, the combination of the Postgraduate Training Seminar elective course and the reintroduction of the P4 Postgraduate Mentorship Programme led to a 100% match rate, which was much higher than the national average of 77%. These results support the idea that a postgraduate preparation

elective, with or without a structured, individualised mentorship programme, can prepare students to be competitive in the residency match.

When comparing 2019 to 2021, the improved college residency match rate is also worth mentioning. More than double the number of students participated in the Post-graduate Training elective course in 2021. Additionally, during the 2021 iteration of the P4 Postgraduate Mentorship Programme, the monthly virtual information sessions established during the pandemic were continued in addition to the individualised mentorship programme. However, this does not explain the lower match rate for students engaging only in the P4 Postgraduate Mentorship Programme when compared to national rates. There are many possible explanations for this. Unlike the Postgraduate Training Seminar elective course, students in the P4 Postgraduate Mentorship Programme are personally responsible for reaching out to mentors,

scheduling meetings, and creating preparatory work. The checklist shown in Table II is provided as guidance for students to follow. However, many students may struggle with time management, which is essential to a timely review of materials and mock interview practice.

This brief has several limitations. Inferential statistics cannot be conducted due to the retrospective nature of the match rates and other data, thus limiting the ability to determine causality. Additionally, selection bias can occur for the Postgraduate Training Seminar elective course and P4 Postgraduate Mentorship Programme. More competitive residency candidates may be more likely to utilise these offerings. There may also be confounding factors that influence student success in the match process. Future prospective studies should include multiple sites and an observational cohort, including data on academic ability, number of interviews offered, and grit of the student candidates.

## Future plans

This brief represents real-world data correlating a postgraduate preparatory elective and formalised mentorship programme to successful residency match rates. The UNTHSCCP plans to continue both initiatives. Specifically, the P4 Postgraduate Mentorship Programme will be expanded to include students in their first, second, and third year of pharmacy school. This addition will not provide individualised mentorship, but will include early offering of resources and general guidance for students interested in residency. It will also help prepare students in greater advance for necessary preparatory opportunities, such as research projects, publications, and leadership.

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