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A microscopic view of blood cells. In the foreground, several sickle cells are visible, characterized by their elongated, crescent shape. In the background, normal red blood cells are visible, which are round and biconcave. The overall color is a deep red.

**SICKLE CELL**  
THE PEDIATRICIAN'S ROLE

*FSU College of Medicine student, Rachel Johnson, during pediatrics clinical training at the Tallahassee regional Campus.*



DEPARTMENT REPORT

## The Florida State University College of Medicine Education Model in Pediatrics: 15 Years of Success

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Florida State University College of Medicine graduated its first class in May of 2005. The curriculum follows a distributed model of education with all 120 students in each class spending the FSU equivalent of the first two years of medical school at the central campus in Tallahassee.<sup>1</sup> After that students are distributed to regional campuses across the state for their in depth clinical education. Those campus sites are in Daytona Beach, Fort Pierce, Orlando, Pensacola, Sarasota, and Tallahassee. In addition, there is a rural site in Marianna which 4 students may elect for the entirety of the third year only. A campus in Immokalee, Florida and Thomasville, Georgia, offer options for basic clerkships in the rural setting for any student from the regional campuses. At the regional campus sites, the student works one-on-one during assigned clerkships with a board-certified physician in the specialties of internal medicine, obstetrics-gynecology, pediatrics, surgery, psychiatry, family medicine, geriatrics, and emergency medicine, as well as a full array of elective rotations. There is a significant component of an apprenticeship model with increasing responsibility given to the student as specified milestones are achieved.<sup>2</sup> For each of these core clerkships, there is an Education Director who is in charge of the curriculum and who coordinates the clerkship so that students at each campus have comparable experiences. Medical school accreditation standards set by the Liaison Committee on Medical Education require demonstration of comparable education and experiences at regional clinical sites, including data based analysis. We have required students to log the demographics and diagnoses of every patient they encounter on required clerkships and to note the level of their involvement. Cross-campus comparisons have shown no statistical differences in patients seen, their diagnoses, and the mean numbers of patients per student per clerkship across

all campuses. In addition the national percentile scores on the NBME subject examinations given to all students show no statistical differences between campuses.<sup>2</sup>

Each campus is headed by a Dean, who in addition to administrative responsibilities, is accountable for assuring that each student receives the required clinical experiences and support. Each campus has support staff that is utilized in comparable fashions. Each position represents a support department entity found at the main campus in Tallahassee. For example there is a Clinical Coordinator position that carries out the duties of the Office of Medical Education, a Student Support Coordinator who embodies Student Affairs, and an IT position for all technical needs in coordination with the IT department at main campus. Aa Campus Administrator handles all administrative duties including Human Resources, Accounting, Foundation activities, and campus accounts. The Administrator works directly under the supervision of, and in partnership with, the Campus Dean. The Campus Dean is also supported by an Executive Assistant.

Additionally, there is a Clerkship Director for each core clinical rotation at every campus. These are part-time paid positions calculated as 0.3-0.4 FTE based on the regional median income for the particular specialty of each Director. The Clerkship Director, with approval of the Campus Dean, chooses the clinical faculty that will be assigned to teach students, and the Clerkship Director is responsible for proper curriculum delivery. Strikingly, there are no full-time FSU-employed faculty teaching the clinical curriculum at regional campuses. However, assigned faculty are remunerated for administrative duties associated with teaching at a weekly rate per student assigned. The Education Director works closely with his/her Clerkship Directors, and meets in person with them a minimum of 3 times per year. The Education Director also meets with the teaching faculty twice per year. These close relationships allow for quality assurance and timely feedback to the Education Director on important curricular issues.

Five of six Pediatric Clerkship Directors actively practice pediatrics in their communities, and the sixth practiced in her community for several years. They know the community pediatricians well and are able to choose those who will be particularly adept at teaching medical students. Community preceptors are given detailed orientation and faculty development prior to accepting students. Faculty development includes orientation to the FSU education model, required milestones and core entrustable professional activities, systems of student evaluation, teaching methodologies and theories, plus training on providing performance feedback. The student spends four weeks in the pediatric outpatient setting working one-on-one with his/her preceptor. This allows development of close relationships between student and mentor, and the preceptor is considered role model. Students are expected to see patients with a typical variety of pediatric illnesses and to gain confidence and independence during the clerkship experience. The preceptor is provided the list of conditions that the student should see to assure proper selection of patients. Since only one pediatrician is working with the student during these four weeks, it is easier to judge the student's progress by the rotation end, and that progress has greater statistical validity. Students meet with the preceptors at the end of second week to discuss areas needing improvement and areas of achievement. Feedback is documented on midpoint evaluation reports to the Campus Dean. Students spend two weeks in an inpatient experience, and work with pediatric hospitalists or with pediatric residents depending on campus site. Two of six campus sites have Pediatric Residency Programs. At clerkship end, students are provided consensus-based summative feedback.

Students evaluate their preceptors at the end of each rotation. Performance is tracked using a numerical scoring system regarding attributes of outstanding teaching. The results are tracked for each faculty and compared to their peers and to the faculty as a whole. Glowing comments about superb teaching and exemplary role modeling have been the rule. Only rarely has a student commented negatively about their preceptor experiences. Evaluation data and comments are provided to faculty annually and as three-year summations. FSU has been blessed with dedicated community pediatricians who obviously enjoy teaching. The majority have been teaching since the first students arrived at regional campuses. Recent internal analysis shows a 5-year community faculty retention rate approaching 85%, and 90% of faculty that dropped out did so because of relocation, career changes, or retirement.

The assigned curriculum for all students during the pediatrics clerkship is Computer-assisted Learning in Pediatrics Program (CLIPP) Cases.<sup>3</sup> These are interactive virtual, computer-simulated patient cases produced through the national organization, UMED. Thirty-two cases are assigned over the 6-week rotation. Students have weekly assignments with these cases and take a weekly quiz. The CLIPP curriculum is used by 85% of medical schools in the US and Canada. The Clerkship Director meets in special weekly sessions separate from the rotation assignments to discuss key topics, interesting cases, and clinical skills practice, such as presenting a patient. Material from CLIPP Cases are also covered during these sessions. As with all FSU required clerkships, students are required to take the NBME Pediatric Subject Examination at rotation end. FSU students consistently perform at, or slightly above, the national average on these exams.

There have been a total of 910 graduates from FSU College of Medicine since 2005, and 114 of these (12.5%) have entered pediatric residencies. Of those, 74 have completed their pediatric training; 65% are practicing general pediatrics, and 35% are in subspecialties. Our graduates have entered fourteen of the Pediatric Subspecialties, similar to graduates of other schools. National data reflect that since the 2003, pediatric residents choosing a subsequent subspecialty has varied between 30-38% (1). Thirty-one FSU graduates (42%) that completed pediatric training have returned to the state of Florida to practice, and 6 are on our teaching faculty at the regional campus sites. These early numbers are impressive, and reflect the desire of the students to return to Florida, often to the communities in which they completed their third and fourth years of residency.

Primary care is emphasized at FSU and is an important variable in consideration for admission.<sup>1,2</sup> Of the 910 graduates, 164 (18%) have chosen to practice IM, and 136 (15%) have chosen Family Medicine. Pediatrics has been the third most popular career choice. (Figure 1). FSU College of Medicine mission emphasizes primary care and to produce exemplary physicians to meet the needs of special populations—elder, rural, minorities and the underserved, which has become an attractive choice for many medical school applicants. Application numbers have grown such that FSU College of Medicine was listed by US News and World report as the second most competitive school in the US.<sup>4</sup>

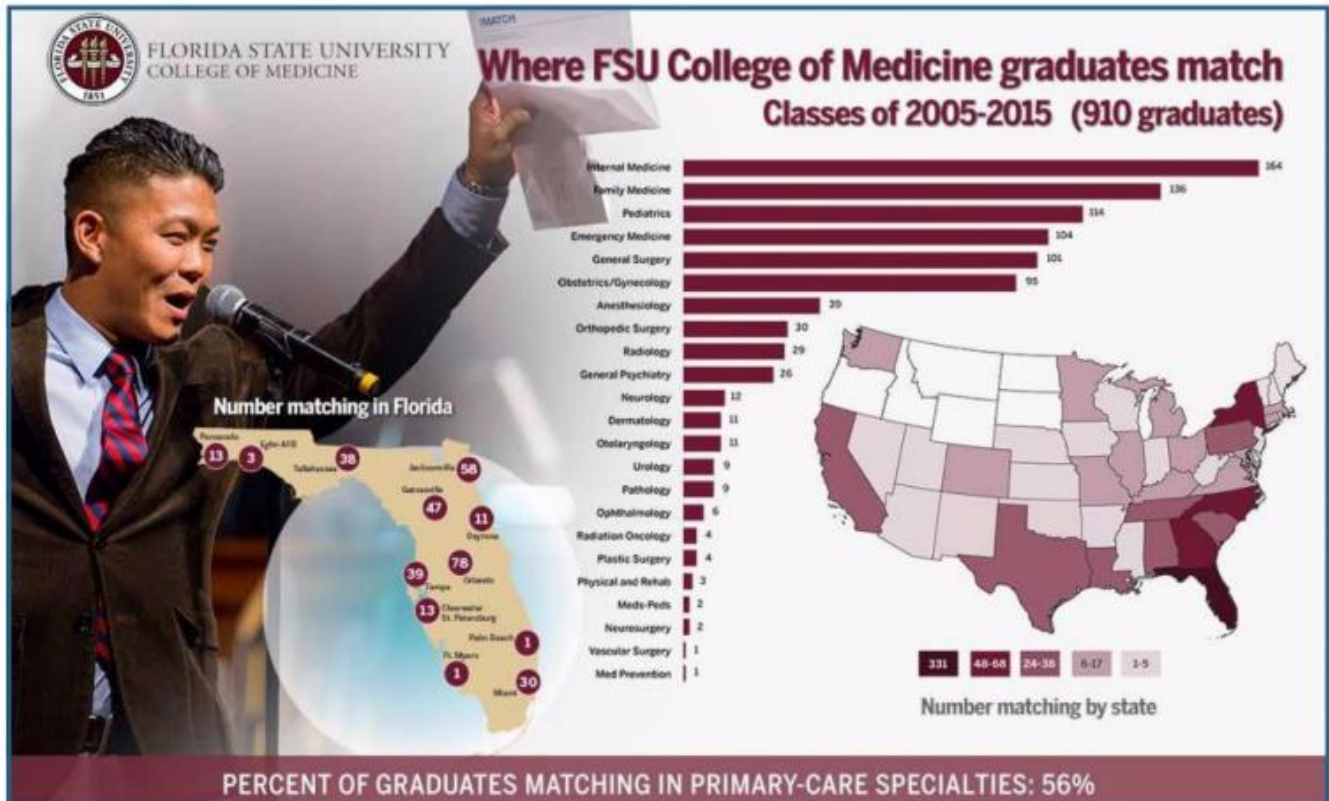


Figure 1: FSU College of Medicine Residency Match Results, 2005-2015

In summary, the one-on-one teaching model used by FSUCOM is working successfully to encourage students to choose pediatrics, as well as other primary care specialties as careers. The model then encourages students to return to the communities in which they completed their clinical years of medical school.

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