

From the Desk of Dean Patrick J. Ferrillo, Jr., D.D.S | September 2011

Welcome to the second in a series of white papers that will address our school's vision for the future and what it will take for us to achieve it.

## Pacific Dental Helix Curriculum: Defining New Standards for Dental Education

Dental education is changing. It's adapting and advancing. It's incorporating more effective ways of teaching and better ways of learning.

As we prepare students to enter the changing world of healthcare, it is vital that our curriculum stay up-to-date so we can best prepare them for success today – and in the future.

At the Arthur A. Dugoni School of Dentistry, we have recently developed one of the most forward-looking curriculums in the field of dental education. It's called the **Pacific Dental Helix Curriculum**. It is a driving force that supports our goal to create clinically competent dental professionals able to integrate the science and technology of dentistry.

Our aim is to combine an **integrated curriculum** with a truly **active and engaging learning environment**. This allows us to deliver an educational experience that sets the standard for excellence in dental education and keeps us at the forefront of the profession.

As part of the implementation of our school's strategic plan, *Advancing Greatness*, our school came together over the last four years to analyze what we teach and how it prepares students for success. You can be proud of the work that our Office of Academic Affairs, faculty, students and professional colleagues have done to create and bring to life the Pacific Dental Helix Curriculum.

Please read on to learn more about how our school is making its mark through an integrated curriculum. Future white papers in this series will cover how we are creating new learning environments designed to support this exciting advancement.



## What is the Pacific Dental Helix Curriculum?

Our integrated curriculum gives students a powerful and effective way to learn. Two key takeaway points about how we define it are as follows:

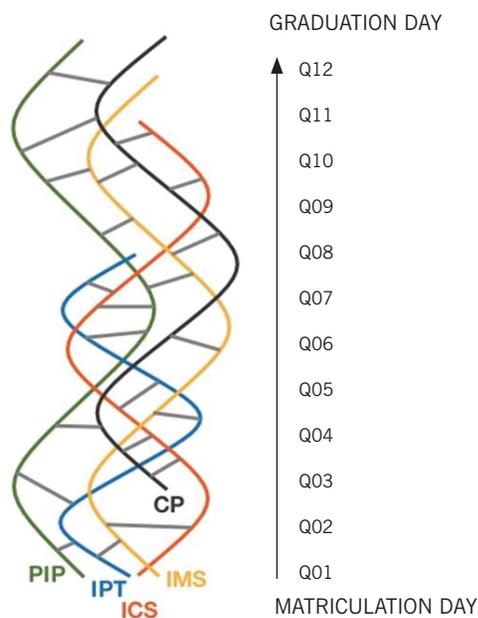
**Helix integration is the unique way that our school weaves disciplines together as students move through their program.** Courses are no longer in silos. The curriculum weaves foundation and technical skills together through five broad strands.

**The curriculum connects our people more closely to help students succeed.** The curriculum offers new ways for students to interact with faculty members and fellow students, internalize concepts, and use dental and educational technology. We focus on active versus passive learning. Active learning is the opposite of the traditional, passive lecture style where a “sage on the stage” pontificates. We are moving toward a “guide on your side” style involving small group projects, case-based learning, review sessions, panels, in-class technology and new forms of delivery such as podcasts to provide students with material outside of classrooms.

## The Helix Curriculum's Five Strands

Through the recent curriculum review, we took a look at how to break up linear, sequential courses and present the material in a more integrated fashion. As a result, students will better understand the connections and relationships between disciplines. Once they are providing care, it allows them to better meet the multidisciplinary needs of patients.

A “strand” by one definition is “one of the elements interwoven in a complex whole.” In thinking about how to communicate about the curriculum, our academic team decided that a helix was a fitting way to show how coursework integrates across disciplines. The helix concept is also now shown in the curriculum's logo.



The five strands into which our courses now flow are as follows:

**1**

**Integrated Clinical Sciences** – We’ve integrated our foundation sciences with our clinical education in a progressive fashion as D.D.S. students move through their program. This strand delivers material from courses that previously stood alone.

The first-year course, “Orientation to the Clinical Practice of General Dentistry,” covers how to address patients, collect information and prepare to treat them. Students learn through lectures, seminars, clinical and case-based exercises on diagnostic sciences, clinic systems, communication and ethics. In the second-year course, “Application of Foundational Knowledge,” learning shifts to treatment planning and delivery of care. Faculty are from a broad spectrum of basic science, clinical departments and practice backgrounds. Students focus on clinical dentistry as a whole rather than the individual disciplines that comprise much of the first-year experience. The active learning continues. Students think beyond the “ideal” skills and protocols of first year to the application of skills to real patients in clinic. The third-year course is “Multidisciplinary Case Based Seminars” and covers themes involving all aspects of clinical dentistry. Students participate in small group seminars and give formal presentations to demonstrate an understanding of dental literature.

**2**

**Integrated Medical Sciences** – As practitioners, we all understand the importance of a strong scientific foundation to support our clinical decision-making skills. The biomedical sciences in our traditional curriculum were strong, but students were mostly left on their own to integrate this important material with their clinical science and patient care experiences. The biomedical sciences faculty have created a strand that provides a strong foundation in medical sciences while also connecting this knowledge to patient care. This happens through case discussions and by incorporating clinical faculty in the classroom to help draw connections with the material to clinical relevance.

**3**

**Integrated Preclinical Technique** – In this strand currently under development, we want to go beyond the strengths of our existing pre-clinical preparation and leverage opportunities to create a closer simulation of clinical practice. We aim to ensure an appropriate amount of contemporary technique and technology available to students. More importantly, the learning will be integrated around a patient case where the student in the simulation lab will be treating a family of patients with different needs as they would experience in the clinic. Once they have developed foundational hand skills and knowledge, they will interact with the simulated patient, the patient record and the faculty in the same way as they will in the clinic. The goal is a more authentic learning experience to transition students to be even better prepared as they enter the clinics.

**4**

**Clinical Practice Teams** – A student’s clinical private practice team is the central organizing unit of his or her clinical experience. As part of our curriculum review, we took a deep look at our clinics. We formed two task forces to review and make recommendations. We’re making adjustments to the size and scope of the clinic teams in order to make sure our model is contemporary and meets the needs of both students and patients. For example, instead of four large group practices we are shifting to eight smaller group practices to give students an experience that more closely resembles private practice.

The new format will allow us to incorporate practice management content into the student private practice discussions, as well as create a closer relationship between patients, students, staff and faculty in each practice. We have several other clinic changes in the works that will ensure that the experience we offer our students remains top-notch.

**5**

**Personalized Instructional Program** – This strand truly distinguishes the Pacific Dental Helix Curriculum. In addition to the content in the other strands, students will have the ability to choose one area related to dentistry in which to gain focused experiences.

In the 2010-11 school year, for example, we established the Dugoni Practical Leadership Initiative as one of the first of several Personalized Instructional Program (PIP) themes we have planned for coming years. The workshop and speaker series addressed a school-wide desire for active learning about practical leadership skills that can be applied to students’ current learning environment (e.g., personality assessments, career planning, and mentorship) and future careers as a professional (e.g., practice management, public speaking and networking).

Another PIP theme was the Student Educators Group for those who may be interested in pursuing teaching careers in dental education. This group attended lectures and completed practical teaching assignments to develop skills and understanding of what it means to be a member of the academy. Other themes in development include research, community service and global missions.

## Benefits of the Helix Curriculum

Students benefit in many ways through an integrated approach. It removes unnecessary redundancies and gaps in knowledge. It improves timing of content with students' clinical education and board examinations. It also results in a more efficient delivery of content and strengthens students' understanding of the interrelationship of the school's entire curriculum.

Other benefits include:

- Biomedical sciences are connected to clinical science starting in the first quarter
- Faculty members model the generalist model of dentistry by working with students and patients from diagnosis through the prevention and treatment of disease
- Students receive early hands-on experience with the latest techniques and technology
- Increased seminar time in courses previously taught by traditional lecture
- Completion of foundational concepts before the third (senior) year
- Increased third-year opportunities for more seminars, case-based learning and clinical rotations
- Enhanced creativity to assess students outside of the more rigidly scheduled finals week
- Increased opportunity for student involvement in personalized programs and scholarly activities
- Increased interdisciplinary competence of faculty

## Implementing Our Vision

We've made great strides in delivering this new curriculum. Feedback from students, faculty and our colleagues in dental education is positive. In a recent survey of our students, faculty and staff, more than 96 percent agreed with the school's vision for an active, integrated curriculum.

As we move forward with these exciting changes that will make us even more learner-centered, we also need to ensure that faculty members are trained and prepared to excel in a changing environment. We have also examined the school's facility infrastructure to ensure that we are creating the ultimate environment to actualize the potential of each student.

When we factor in the changes required in our clinics and group practice model, and the flexible learning spaces required to support active and engaging learning, we've determined that a full implementation of the Helix curriculum is not possible in our existing dental school facilities. This is one of several important factors driving our school's plans for a new facility in San Francisco.

My future white papers will explore how new facilities will provide the space and configuration necessary to fully implement Helix Curriculum. Delivering this innovative curriculum in the very best facilities will allow us to continue to offer a world-class education to today's students – the next generation of dental professionals.