Established in 2007, Harvard’s Department of Stem Cell and Regenerative Biology (SCRB) is the University’s first cross-School department and reflects the Harvard Stem Cell Institute’s collaborative, multi-institutional nature. Anchored in the Faculty of Arts and Sciences in Cambridge, and Harvard Medical School in Boston, SCRB is home to Harvard’s formal undergraduate and graduate educational efforts in stem cell science and a growing number of junior and senior faculty members. In fact, the new department is co-chaired by Doug Melton, PhD, and David Scadden, MD, founding co-directors of HSCI. SCRB faculty labs are located on the Cambridge campus and at Harvard’s affiliated hospitals, and some faculty members maintain labs in both locations.

Elevating stem cell education to the status of an academic department underscores the University’s dedication to this growing area of science and creates unprecedented opportunities for undergraduates, graduate students, and medical students to receive training in stem cell biology and regenerative medicine. The very establishment and acceptance of SCRB was made possible by the examples of successful team science that are the hallmark of the Harvard Stem Cell Institute. HSCI continues to offer unique training opportunities through its Summer Undergraduate Research Internship.
Programs, Medical Scientist Training Fellowships, and Junior Faculty Programs.

Although it is far more common for an institute to grow out of an established academic department, SCRB was established three years after HSCI. Given the pressing need to advance stem cell science in the face of politically driven restrictions on the research, it was important first to establish the Institute—and create momentum in the research and build cross-faculty collaborations—and then to establish an academic department. Both HSCI and SCRB have distinct, integral roles to play in advancing stem cell science at Harvard: the academic department has a dedicated faculty—all of whose members play major roles in HSCI—and has responsibility for undergraduate and graduate education; HSCI, with its larger faculty network and broader focus, supports SCRB in its mission while advancing the search for stem cell biology-based cures for disease across all the Schools and affiliated institutions of Harvard. The reach and the resources of Harvard’s FAS-based undergraduate and graduate programs, the Medical School, and affiliated hospitals will help each group enable the other’s mission.

**SCRB’s Undergraduate Program**

In the Fall of 2009, SCRB launched its first undergraduate concentration in Human Developmental and Regenerative Biology (HDRB). Over 50 students from the class of 2013 have already committed to the concentration.

Offering the only program rooted in both the Faculty of Arts and Sciences and Harvard Medical School, the concentration focuses on human biology with significant emphasis on basic science and hands-on research. The courses emphasize what the study of humans reveals about fundamental biology and, reciprocally, what a greater understanding of biology teaches us about ourselves. Undergraduate courses include:

- What Does Human Disease Teach Us About Mammalian Biology?
- Directed Differentiation of Stem Cells
- Repair and Regeneration in the Mammalian Brain
- Experimental Embryology and Developmental Biology

**SCRB’s Graduate Program**

In addition to existing courses, the graduate curriculum includes new courses developed by SCRB faculty, a diverse and flexible spectrum of upper-level specialized topics called “nanocourses,” as well as “boot camp” courses—two-week intensive courses offering a small number of students hands-on experience with experimental approaches in developmental biology, and two required lab rotations before choosing a thesis lab.

The graduate program also provides various mentoring opportunities that include career advice, systematic exposure to topics such as the practice and ethics of paper reviewing, advice on laboratory practices, and strong participation by secondary research advisors.

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