

# MEDICAL SCIENTIST – M.D./PH.D.

---

## Program director

Penelope J. Duerksen-Hughes

## Objectives

Loma Linda University is committed to fostering the investigative skills of its medical students. Students interested in pursuing careers in academic medicine and medical research may wish to enroll in one of the combined degree programs.

The Medical Scientist Program develops a student's independence and competence as an investigative scientist and clinician. It provides students with a broad educational base for the practice of medicine and related research. The program is administered by the School of Medicine in cooperation with the Faculty of Graduate Studies.

## Program description

The Medical Scientist Program at Loma Linda University is designed to attract those students who are energized by engaging in biomedical research and wish to contribute substantially to this enterprise. The expectation is that graduates of this program will pursue careers in academic medicine and medical research. Areas of study for the Ph.D. degree include: anatomy; cancer, developmental, and regenerative biology; infection, immunity, and inflammation; and neuroscience, systems biology, and bioengineering. The program integrates graduate and medical education within a Christian environment, and is designed to allow completion of both the Ph.D. and M.D. degrees.

Students typically begin the combined degree program by taking two years of medical school, culminating in successful completion of Step 1 of the USMLE examination. Students then transition to the Ph.D. portion of the curriculum, where they take and pass required courses, successfully pass written and oral qualifying examinations, and complete and successfully defend doctoral dissertations. Students then transition back to the M.D. program, where they finish the final two years of training, completing all of the standard clinical rotations, and take and pass Step 2 of the USMLE. A student must finish all requirements for the Ph.D. degree before being allowed to register for the last year of medical school. In most cases, the sequence should take approximately eight years to complete.

Combined degree students must complete the full curricula for both the M.D. and the Ph.D. programs, with the exception that during the Ph.D. years, two rather than three 3-unit religion courses are required, which must include RELT 617 Seminar in Religion and the Sciences and either RELE or RELR 500-level or above classes; and during the M.D. years, complete 12 units of 700-level religion coursework rather than 14 units, with these 12 units to include RELR 775 Whole Person Care, RELE 708 Medicine and Ethics, and RELE 714 Advanced Medical Ethics. Students are encouraged to inquire about the possibility of waiving specific graduate-level classes where equivalent mastery has been demonstrated in the M.D. curriculum.

Students interested in beginning the sequence with Ph.D. training, or who have other special requests, are encouraged to communicate with the program coordinator, since some customization may be possible.

## Admissions

Admission into the Medical Scientist Program is competitive and requires evidence that the student is likely to develop into a successful medical scientist. The student must submit separate applications to the School of Medicine for both the M.D. and the Ph.D. degree programs, and meet the stated admissions requirements for each program. The application package for the Ph.D. degree requires scores for the general test of the Graduate Record Examination. Both programs must accept the candidate in order for the candidate's credentials to be evaluated by the MD/PhD committee for acceptance into the Medical Scientist Program (MD/PhD). Students entering the M.D./Ph.D. combined degrees program who determine that a research career is inappropriate may elect to complete the M.D. degree program independently. Students entering the Ph.D. degree program who desire a career in academic medicine may choose to apply for admission to the M.D./Ph.D. combined degrees program at a point after their entry into the Ph.D. degree program; however, the standard medical school application process will be required at that point.

## Financial assistance

Financial assistance to students in the Medical Scientist Program *may* provide:

1. Cost-of-living stipends during those periods in which students are most directly involved in graduate education. The amount of the stipend is equivalent to that available to Ph.D. degree students in the basic science graduate programs.\*
2. Tuition waivers for all graduate program coursework.
3. Tuition deferment for the M.D. curriculum, upon completion of a Ph.D. degree.

Tuition assistance for the M.D. portion of the combined degree program is not given to all students who earn both degrees. Assistance for the M.D. portion will only be given in cases where an applicant has received approval from the School of Medicine MD/PhD Committee prior to beginning the M.D. coursework. Assistance that is received will be in the form of an institutional loan which will cover MD tuition and fees but will not include living expenses. The School of Medicine makes provision for the loan to be forgiven when a recipient meets the terms described below and in the loan agreement.

M.D./Ph.D. degree students are ordinarily expected to complete their Ph.D. degree before beginning the third year of medical school. Students who have not completed the Ph.D. degree may apply for a tuition deferment for their third year of the medical curriculum, and, in unusual cases, for the first term of their fourth year. Applications for tuition deferment beyond the first two years must be approved by the student's dissertation committee and signed by the dissertation advisor, the associate dean for basic sciences, and the dean of the School of Medicine. Under no circumstances will a student be granted a tuition deferment until they have finished the requirements for the Ph.D. degree. If a student withdraws from the Ph.D. degree program their tuition deferments will be converted to a loan. Completion of the M.D. degree terminates the student's participation in the Medical Scientist Program and ends the availability of tuition waiver. Any tuition deferments then in force will convert to loan obligations at that time.

If a student has received acceptances into both the M.D. and the Ph.D. programs, but is not accepted into the MSP, they may elect to complete

one or both degrees; however, tuition support for the medical program will not be available to these individuals.

\* Stipends from the School of Medicine will be awarded for the first two years of the graduate program, provided that the student makes satisfactory academic progress and remains in good and regular standing. Stipends covering study beyond the first two years should ordinarily be obtained from the individual laboratories or departments in which the student conducts research.