



# The Stanford University Master of Science in Medicine Degree Program for Ph.D. Students

A New Program to Teach Translational Medicine to Basic Scientists in order to  
Bridge the Gap Between Basic Science and its Application to Human Disease

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<http://msm.stanford.edu>

# What is the MOM Program?

- Our goal is to help train the next generation of leading translational medicine researchers.
- Targetted to Ph.D. students in all departments
- During their first 1.5 years here, MOM students will take basic biomedical science courses with the medical students.
- MOM students will concurrently take their PhD course requirements and lab rotations.
- By early in their 2nd year, they will choose a lab for their thesis research and a clinical co-mentor.

# Required Components of the MOM program

Course Work: First 5 quarters of the basic medical science course sequence

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- **Autumn Q1:** Will have all Mondays, Wednesdays, and Fridays free

- \*BIOC 205: Molec. Foundations of Medicine (weeks 1-4)

3 Units

Chu

- DBIO 201: Development and Disease Mechanisms

4 Units

Kingsley

- GENE 202: Human Genetics

4 Units

Ford

- INDE 216: Cells to Tissues (Histology) (week 1-4)

3 Units

Cross

- SURG 203A: Human Anatomy I

11 Units

Mathers

25 Units

- **Winter Q2:** Will have all Wednesdays free and all Monday and Friday afternoons free

- INDE 220: Human Health & Disease —Basic Principles

2 Units

Farrell

- MI 205: Immunology for Medical Students

4 Units

Lewis

- NBIO 206: The Nervous System

8 Units

Clandinin

- SURG 203B: Human Anatomy II

4 Units

Mathers

18 Units

- **Spring Q3 :** Will have all Wednesdays free and all afternoons free

- INDE 221: Human Health & Disease I

12 Units

Regula

- Cardiovascular and respiratory systems.

- **Autumn Q4:** Will have all Wednesdays free and all afternoons free

- INDE 222: Human Health & Disease II

15 Units

Regula

- Renal, gastrointestinal and endocrine systems.

- **Winter Q5:** Will have all Wednesdays free and all afternoons free

- INDE 223: Human Health & Disease III

12 Units

Regula

- Brain and behavior, hematology, and systemic microbiology.

# Cost to Train Each MOM Student

- Year 1: All costs covered by MOM Program

Stipend	\$ 29,000
Tuition	\$ 53,254
Health Insurance	<u>\$ 1,672</u>
Total cost year 1	\$ 83,926

- Year 2: Start on PhD training grant  
(Excess tuition costs covered by MOM)

## **What are the Goals of the MOM Program?**

- 1) To enable students to do disease-oriented translational research by providing a deep knowledge about human biology and disease
- 2) To do this without harming the in depth quality of their Ph.D. education in their chosen field
- 3) To create better biomedical scientists
- 4) To better deploy Ph.D. scientists over the whole range of important unsolved biomedical questions

## **Who are the Targetted Ph.D. Students for MOM?**

- 1) We are specifically targeting students that are already intensely interested in disease-oriented research (20% of bioscience students apply)
- 2) Students that do not wish to be practicing physicians
- 3) Students in chemistry, physics, engineering, bioinformatics, bioengineering, as well as biosciences
- 4) Students willing to make a 1.5 year commitment to additional highly intensive training

# **What is Disease-Oriented Translational Medicine?**

Our goal is to lay a strong, in depth foundation of current understanding about human biology and disease that will better enable students to make mechanistic and conceptual steps forward in understanding human biology and disease

Many diseases so far hardly studied by Ph.D. scientists

1,000 failed stroke trials; 100 failed ALS trials.

Progress depends on deeper mechanistic understanding of disease causes and pathophysiology

## What are the Pros and Cons of MOM?

- 1) Highly intense (but lays strong foundation)
- 2) Takes 1.5 years (but much shorter than MSTP)
- 3) Expensive compared to many MIG programs (but much less costly traditional MSTP)
- 4) Limited number of students (although 20% of class applying, fewer are up to MOM intensity)
- 5) Lots of stuff to memorize (which facts do we need to teach?)

\*\*\* Many Thanks to HHMI \*\*\*