

Cedars-Sinai Research Intern Program Opportunity

PI/MENTOR: [Dr. Ekhiro Seki, MD, PhD](#)

DEPARTMENT: Medicine

APPLICATION LINK: https://cshs.taleo.net/careersection/cs_yed/jobdetail.ftl?lang=en&job=HRC0801880

INTERNSHIP DETAILS

- **Internship Track:** Academic Credit (Unpaid)
- **Research Type:** Research Intern
- **Number of Internships Available:** TBD
- **Earliest Start Date:** 3/28/2022. Start date may change depending on onboarding.
- **End Date:** TBD – Dependent on academic school term.

OVERVIEW OF RESEARCH AREA/MENTOR

Cedars-Sinai's digestive diseases research focuses on subspecialty areas in inflammatory bowel diseases, motility, pancreatobiliary and hepatology. As a teaching hospital, Cedars-Sinai offers training opportunities for medical students, interns, residents and fellows. The overarching philosophy for gastroenterology research at Cedars-Sinai is rooted in the understanding that bi-directional translation of basic and clinical research will optimize and accelerate the impact of research and affect patient care. The program is designed to promote and deliver "Precision Medicine" across a spectrum of digestive diseases. Byproducts of success are strong support from federally funded research programs, as well as fruitful relationships with the biotechnology, medical device and pharmaceutical industries.

The primary focus of the Dr. Seki's Laboratory is to understand the role of innate immune and inflammatory signals in chronic liver diseases such as liver fibrosis, alcoholic and nonalcoholic steatohepatitis and hepatocellular carcinoma. In particular, our laboratory is interested in studying the interplay between hepatocytes and non-parenchymal cells (Kupffer cells and hepatic stellate cells) in chronic liver disease. Our research goal is to discover new mechanisms of and novel therapeutic targets for chronic liver disease.

Dr. Seki's laboratory is interested in the following research area:

1. Toll-like receptor signaling in chronic liver disease (alcoholic and non-alcoholic steatohepatitis, liver fibrosis and hepatocellular carcinoma).
2. Role of extracellular matrix in the progression of chronic liver disease.
3. Molecular mechanism of liver metastasis in alcoholic and non-alcoholic fatty liver disease.

INTERNSHIP SUMMARY

This internship in Dr. Seki's lab will provide an opportunity to explore complex scientific research learning experiences as well as potential career opportunities. The internship will consist of intensive hands-on training, provide exposure to both translational and basic science professionals, and expand basic understanding of scientific and research principles. Dr. Seki's lab focuses on studying chronic liver diseases including liver fibrosis, alcoholic and nonalcoholic steatohepatitis and hepatocellular carcinoma and the regulation of innate immune signaling in these diseases. The trainee will learn, practice and administer various techniques such as using liver cells, such as hepatocytes,

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Kupffer cells, and hepatic stellate cells, and chronic liver disease model in genetic modified animals. We also use light and fluorescent microscopy, spectrophotometers, PCR, real-time PCR, and Western blotting to understand and explore our research concepts. By the end of the internship the trainee will have an in depth understanding of the basis of these principals and hopefully continue to fulfill their interest in research.

INTERNSHIP GOALS & OBJECTIVES

1. Understand basic and translational hepatology research concepts
2. Increased knowledge and understanding of research techniques used in a working laboratory.
3. Increased knowledge and understanding of medical terminology.
4. Increased ability to communicate scientific research effectively.
5. Understand and explore potential career opportunities in the research field.

INTENDED ACTIVITIES AND TIMELINE

1. Orientation to dept and overview of area (1-2 weeks)
2. Introduction of laboratory safety. (1-4 weeks)
3. Review & understand study protocol with supervisor. Complete CITI training. (1-4 weeks)
4. Learn how to read scholarly papers. (3-10 weeks)
5. Introduction of laboratory techniques and how to properly collect data for this study. (5-6 weeks)
6. Learn about laboratory experiments. (5-10 weeks)
7. Introduction to analysis using software. (5-6 weeks)
8. Perform and Analysis of Laboratory experiments. (5-10 weeks)
9. Introduction of animal experiments. (5-6 weeks)
10. Perform animal experiments. (5-10 weeks)

EDUCATION AND EXPERIENCE REQUIREMENTS

- Must be 18 years of age or older and have a HS Diploma or GED.
- Must reside in the greater Los Angeles area or surrounding cities while conducting all activities related to the intern or visitor appointment.
- Those participating for academic credit must receive academic credit for the duration of the internship.

PREFERRED REQUIREMENTS

- Basic Biology + Lab
- Basic Chemistry + Lab

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