THE FUTURE OF LEGAL MEDICINE AND A 30 YEAR HORIZON
EMERGENCY MEDICINE, HEALTHCARE INNOVATION, AND MUCH BEYOND

SAI BALASUBRAMANIAN, M.D./J.D. CANDIDATE

TRADITIONAL MODEL
- Legal Frameworks
- Healthcare Delivery

MODERN MODEL
- The marriage of legal frameworks with traditional medicine to regulate:
  - The practice of medicine
  - Healthcare spending & consolidation
  - Frameworks around innovation

MODERN MODEL

HEALTHCARE DELIVERY
- Case study in the practice of daily medicine:
  - Negligence
  - Patient-physician relationship
  - Consent
  - Decision making issues

HEALTHCARE DELIVERY

Medical Malpractice Tort Costs Have Risen Far Faster than All Other Tort Costs and Medical Care Inflation

Source: Trial Lawyers

![Graph showing medical malpractice tort costs compared to other costs](http://www.triallawyersinc.com/assets/images/update8e.gif)
Healthcare Spending & Consolidation

Source: http://www.usgovernmentspending.com/united_states_total_spending_pie_chart

Source: http://www3.gehealthcare.com/~/media/other/graphhospital-mergers-acquisitions.png?la=en

MERGERS & ACQUISITIONS


Anthem/ Cigna Buyout
$139 million

Aetna/ Humana Buyout
$200 million

Legal Medicine Expertise

MERGERS & ACQUISITIONS

- Evaluating target acquisitions
- Looking at liabilities
- Determining compliance and state of regulatory affairs
- Advocating on behalf of existing groups / practice areas
- End-to-end consulting
Medical Innovation

DESKTOP VS. MOBILE USERS

DOCTOR ON DEMAND

HEALTHTAP

HEALTHVAULT

PAGER
CRISPR-CAS9 TECHNOLOGY

DNA editing

In the editing process, a guide RNA (gRNA) binds to the desired section of the genome, allowing for precise cuts of the DNA. This can lead to targeted gene editing.

Hai The Nguyen, Cytogenetics Laboratory, 2017

CRISPR-CAS9 TECHNOLOGY

HOW THE TECHNIQUE WORKS

A DNA targeting guide RNA directs the Cas9 enzyme at the desired location of the genome. The Cas9 enzyme then cuts the DNA, which can be repaired to achieve the desired genetic change.

CRISPR-CAS9 TECHNOLOGY


CRISPR-CAS9 TECHNOLOGY


CRISPR-CAS9 TECHNOLOGY


CRISPR-CAS9 TECHNOLOGY


Should we hold a moratorium on human germline genome editing?

70% Yes

30% No

There are no long-term issues
Microbial infection
Fetal abnormalities
Ethical concerns
Unintended changes
CRISPR-CAS9 TECHNOLOGY

The Value of the Global Scientific Community

Source: http://www.scienmag.org/content/related/349/6248/588a.full.pdf