healthcare innovation transfer

Healthcare Innovation Transfer (HIT) Internships 2014

Healthcare is changing rapidly. Due to increased prosperity and associated improvements in daily living conditions we now live significantly longer in a good, better or more slowly deteriorating health. In addition, the sheer numbers of the baby boomer generation now entering retirement adds to the challenges of the healthcare systems in both Holland and the US. The triad of government, insurers and healthcare institutions, not always aligned, will need to work together. They do however share at least one ambition: the desire for older adults to live at low cost, in a vital way, in the home as long as possible. Today, there are emerging affordable opportunities to extend older adult independence, when previously, moving to a residential facility was the only option. These alternatives to facility-based care include combinations of community-based care and technology-enabled care practices.

HIT co-located with the Dutch Consulate in San Francisco is offering research opportunities for internships in San Francisco, and/or in The Netherlands as noted below.

Big Data Analytics in the Context of Patient Engagement at Home
(Work is in San Francisco)

Big data is the term for a collection and analysis of data sets so large and complex from diverse sources, that it becomes difficult to process using on-hand database management tools or traditional data processing applications. In healthcare we see four types of big data:

1. IBM Dr. Watson-like intelligence from tapping into millions of medical documents, to create experience-based health management based on highly personalized data
2. DNA/Genome sequencing provides the most comprehensive collection of an individual's genetic variation. With the falling costs of sequencing technology, paradigm shift to a more personalized approach of healthcare has already started.
3. Electronic Medical Records implementations are creating huge amounts of accessible patient data and information available for longitudinal and demographic research.
4. Quantified Self and self-care data from the individual is opening new models of doctor-patient collaboration and patient engagement, firmly rooted in the science of behavior change.

This internship opportunity will focus on patient engagement and the leverage of big data analytics to increase/maintain patient health and independent living at home. The three initial areas of home-centered health maintenance to be explored are physical activity / body maintenance, nutrition, and medications compliance. The resulting white paper to be developed will answer the following two questions:

1. What are, and how transformative are, the benefits of current big data analytics experiments in healthcare? and
2. Specifically, as we move health care into self-care, what data, analytics models, and outputs are required in order to engage patients and doctors in new collaborative models?

This is a multi-discipline internship requiring interest in all, and expertise in at least one of the following areas of study: engineering, applied mathematics, medicine, geriatrics, psychology, sociology.