Precision Health

-OMICS

Genome
Transcriptome
Proteome
Metabolome
Epigenome

Lifestyle/Environment

Microbiome

The Screenome

- Individuals’ socio-environmental exposures and behaviors in free-living contexts are often unmeasured
  - social interactions, media exposure, commercial interactions, information exposure, etc.
  - Measurement often limited to methods such as questionnaires and logs
- Screenomics starts to fill the gap – allowing a large but previously unobserved portion of peoples’ lives to be observed and assessed – their screenome

Influences on Health & Disease

- Tremendous progress in measuring …
  - individual biology
    - genome, metabolome, microbiome
  - physical/physiological characteristics
    - heart rate, accelerations, glucose
  - physical environmental exposures
    - GPS location, air contaminant exposure
Genome Sequencing

Genomic Alterations

- Structural variation/alteration →
  - Changes in gene expression, protein synthesis, etc.
  - Precision Health

Socio-ome Sequencing

Soci-ome Alterations

- Structural variation/alteration (Aging)
  - Changes in social experience → recovery and well-being
    - Convoy (Antonucci, 2001); SOC (Baltes & Baltes, 1990); SST (Carstensen, 2006); SAVI (Charles, 2010)

Gene” expression: Affective Well-Being

Socio-ome: Extracting a Typology

- Genotypes to Sociotypes

Edit Distance (Needleman-Wunsch Algorithm) + Cluster Analysis:
Soci-ome & Core Affect
Sociotypes Indicative of Mental Health “Risk”

Socio-omics to Screen-omics
Expanding the Possibilities through DIGITAL COLLECTION & DATA MINING

Precision Health
Screenome

The Person-Context Interface
“I AM ONE WITH THE SCREEN – AND THE SCREEN IS WITH ME”
"I AM ONE WITH THE SCREEN – AND THE SCREEN IS WITH ME"

**LIFE / INFORMATION DOMAINS**

- Health
- Shopping
- Entertainment
- Finance
- Work
- Learning
- Transportation
- Social relationships

**Digitization**

**Consolidation**
1. Digitization
2. Mediatization of life
3. Consolidation of devices
4. Unobtrusive Monitoring
5.

Touch Screen

Unobtrusive Monitoring

The Pause Button

Life / Information Domains

Transactions Integrated/Fragmrented Across …
Topics, Locations & Screens

Person-Specific
Blending of Experiences
~ 19s
LIFE / INFORMATION DOMAINS
TRANSACTIONS INTEGRATED/FRAGMENTED ACROSS ...
TOPICS, LOCATIONS & SCREENS

SCREENSHOT MOVIE