UTAH GENOME & JANSSEN COLLABORATE ON CANCER PREVENTION

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UTAH GENOME PROJECT & JANSSEN

- Identify genes and biology underlying disease
- How do we intercept disease?
- Can we find targets to treat?
- The projects
  - Suicide (Hilary Coon)
  - Diabetes (Marcus Pezzolesi)
  - Juvenile Idiopathic Arthritis (Aimee Hersh & John Bohnsack)
  - Cancer Prevention (Deb Neklason)

TIMELINE

2015

- Nov: 1st discussions phone
- December: 1st in person meeting with 1 Janssen scientist

2016

- May: TVC met with Janssen at bioconference
- Jun: NIH grant
- Sept: 2nd Janssen visit

2017

- Jan: NIH grant not funded
- Feb: 3rd Janssen visit
- Apr: Visit to Janssen
- Oct: contract signed
- Nov: OSP setup project
- Dec: IRB submitted
- Dec: startup teleconference

2018

- Feb: IRB board meeting
- Feb: First milestone (IRB)
- Mar: 4TH Janssen visit

Each contract negotiated separately

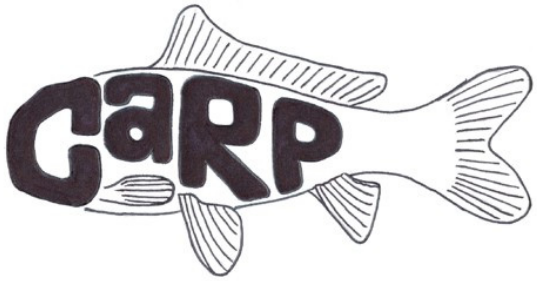
Suicide: 8 months for contract

Juvenile Arthritis: 11 months for contract

Diabetes: 6 months for contract

Cancer: 4 months for contract

CANCER RISK & PREVENTION IN LYNCH SYNDROME



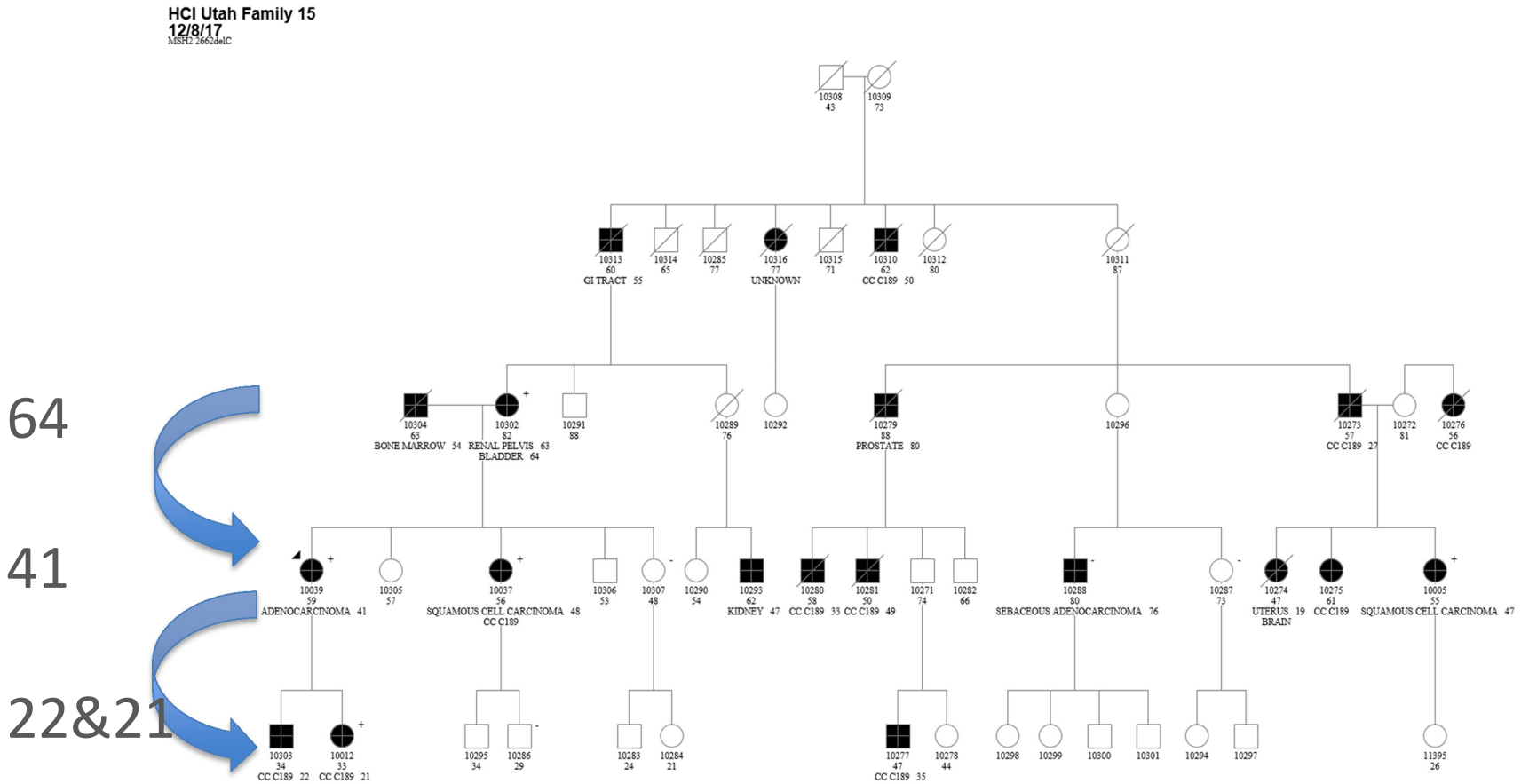
- Why do some individuals with Lynch syndrome get cancer and some don't?
  - Inflammation?
  - Immunity?
- Why does cancer occur earlier by each successive generation in some families?
  - Genomic anticipation?

LYNCH SYNDROME

- Dominant hereditary cancer syndrome
- Current estimates 1:1000 to 1:300
- Mutation in mismatch repair gene
- Anticipation observed in some families
- Findings translate to cancer treatment in general

Cancer	General population risk	MLH1, MSH2, EPCAM mutation carriers	MSH6 or PMS2 mutation carriers
Any Lynch cancer		38-80%	16-65%
Colon	~5%	50-80%	10-22%
Endometrial	2.7%	25-60%	15-26%
Stomach	<1%	6-13%	<1-3%
Ovarian	1.6%	4-12%	1-11%
Hepatobiliary tract	<1%	1.4-4%	~6% combined*
Urinary tract	<1%	1-4%	
Small bowel	<1%	3-6%	
Brain/CNS	<1%	1-3%	
Sebaceous neoplasms	<1%	1-9%	
Pancreatic	<1%	1-6%	

WHY DO SOME CANCERS OCCUR EARLIER, LATER OR NOT AT ALL – IN THE SAME FAMILY?



KNOW YOUR GOAL – WHAT DO YOU WANT?

- Allows you to better negotiate
- My goal is to create better treatments for our Lynch syndrome patients
  - Who is at risk
  - How can we stop them from getting cancer?
- Janssen : can develop these treatments much faster
- Utah: patient population and research experts

HOW IS IT STRUCTURED?

- Publications are collaborative
- Results are jointly owned
- Inventions, patents are individual or shared depending on how it came about
- 3-year timeline
- 20 milestones
  1. Establish IRB & initiate patient recruitment
  2. Ship existing samples and data

  3-7 incremental delivery biospecimens

  8. Pilot phase data analysis
  9. Startup year 2
  10. Analysis data and go-no-go decision for milestones

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RESPONSIBLITIES

- UTAH
  - Enroll 100-1000 patients
    - Tissue biopsies, blood samples, DNA, RNA
    - Clinical histories
  - Analysis
    - Genomic analysis
    - Immunity analysis
- JANSSEN
  - Analysis
    - RNA
    - Inflammation & immunity analysis
    - Genome sequencing & analysis

DIFFERENT PERSPECTIVE

- Grant:
  - Put forward a good idea and justify it
- Industry partner:
  - Deliverables
  - Pay by milestones
  - Have biologic pathways/drugs in mind
  - Want to start clinical trials immediately

LESSONS LEARNED

- Understand the workflow within the University: Legal, TVC, OSP, HCI, IRB – there is not a "normal process
- Submit eProposal at onset
- Take ACTIVE role in negotiation process
- Avoid 3rd party – nobody likes them
- VISIT the company, meet the people
- Detailed upfront discussions so you don't need to renegotiate a contract

- Don't underestimate the value of resources (patients, collaborators)

INVESTIGATIVE TEAM AT UTAH









Deb Neklason, Internal Med
Priyanka Kanth, Internal Med
Matt Williams, Pathology
Aaron Quinlan, Human Genetics
Megan Keener, Huntsman Cancer Inst
Angela Snow, , Huntsman Cancer Inst
Cathryn Koptiuch, , Huntsman Cancer Inst
Elizabeth Mathis, , Huntsman Cancer Inst
Meenal Gupta, Human Genetics