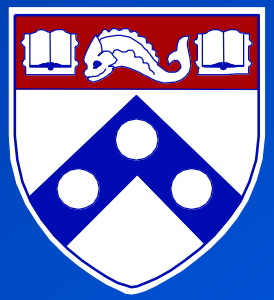
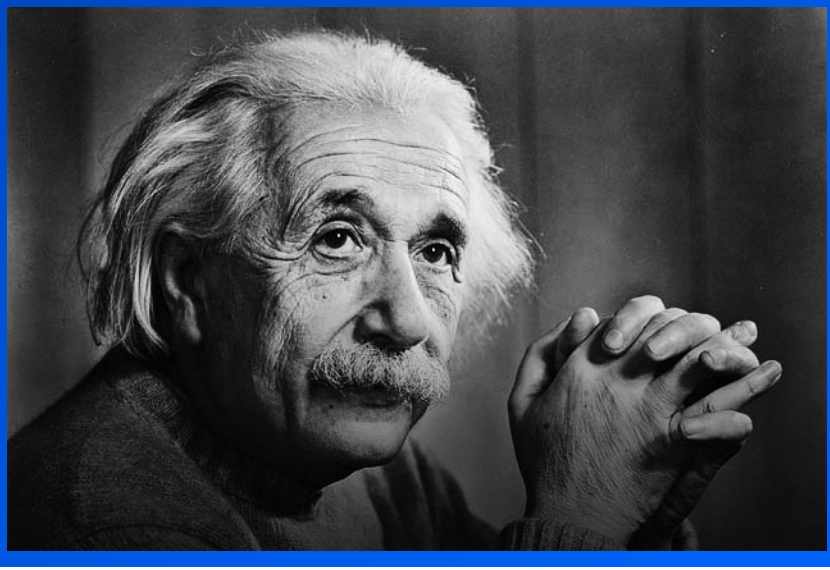
Establishing your clinical research program and building your team

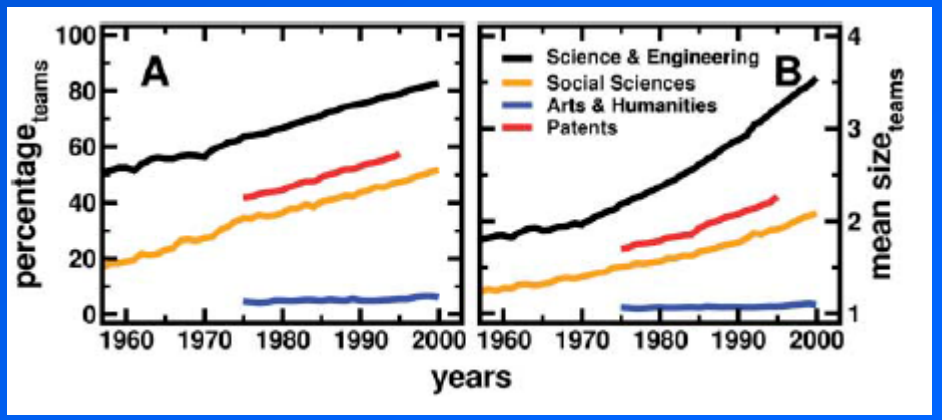


Joel M. Gelfand, MD, MSCE
Professor of Dermatology and of Epidemiology
Vice Chair of Clinical Research and Medical Director, Clinical Studies Unit
Director, Psoriasis and Phototherapy Treatment Center
Senior Scholar, Center for Clinical Epidemiology and Biostatistics
University of Pennsylvania Perelman School of Medicine
Joel.Gelfand@pennmedicine.upenn.edu

The Era of Team Science

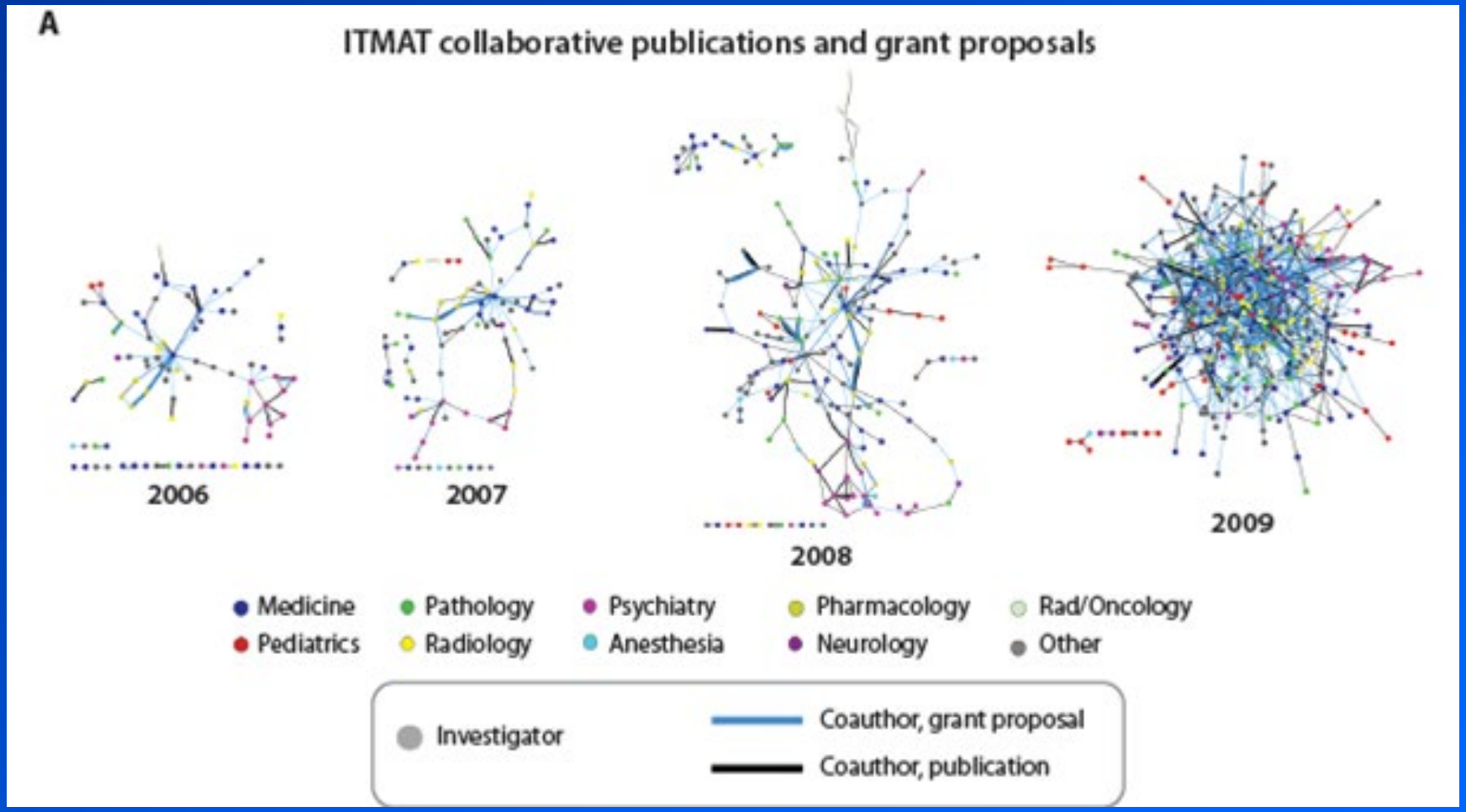
- Team science is a collaborative effort to address a scientific challenge that leverages the strengths and expertise of professionals trained in different fields.





Wuchty S, Jones B, Uzzi B. The Increasing Dominance of Teams in Production of Knowledge. Science. 2007 May 18;316(5827):1036-1039
https://www.teamsciencetoolkit.cancer.gov/Public/KeyArticles.aspx

Exponential growth in collaboration: The PENN ITMAT experience



Hughes ME et al Sci Trans Med 2010;2:1-4

Key elements of team science

- Leadership and mentorship
- Individuals with complimentary skills and expertise
- Communication and clarity of expectations
- Conflict resolution
- Shared vision and trust
- Recognition and promotion of team members

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	
Execute your studies (consent patients, monitor patients per protocol, enter data)	
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	
Manage data, run directed analyses	
Plan and execute complex analyses	
Bring new energy, grow program in new directions, work on grants, future collaborators	
Read your aims page, provide practical advice	
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	***Senior mentor***
Execute your studies (consent patients, monitor patients per protocol, enter data)	
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	
Manage data, run directed analyses	
Plan and execute complex analyses	
Bring new energy, grow program in new directions, work on grants, future collaborators	
Read your aims page, provide practical advice	
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	***Coordinators***
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	
Manage data, run directed analyses	
Plan and execute complex analyses	
Bring new energy, grow program in new directions, work on grants, future collaborators	
Read your aims page, provide practical advice	
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	Coordinators
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	***Project managers***
Manage data, run directed analyses	
Plan and execute complex analyses	
Bring new energy, grow program in new directions, work on grants, future collaborators	
Read your aims page, provide practical advice	
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	Coordinators
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	Project managers
Manage data, run directed analyses	***MS level biostatisticians***
Plan and execute complex analyses	
Bring new energy, grow program in new directions, work on grants, future collaborators	
Read your aims page, provide practical advice	
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	Coordinators
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	Project managers
Manage data, run directed analyses	MS level biostatisticians
Plan and execute complex analyses	***PhD Biostatistician***
Bring new energy, grow program in new directions, work on grants, future collaborators	
Read your aims page, provide practical advice	
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	Coordinators
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	Project managers
Manage data, run directed analyses	Masters level biostatisticians
Plan and execute complex analyses	PhD Biostatistician
Bring new energy, grow program in new directions, work on grants, future collaborators	***Students, pre/post docs***
Read your aims page, provide practical advice	
Scientists with expertise you lack	

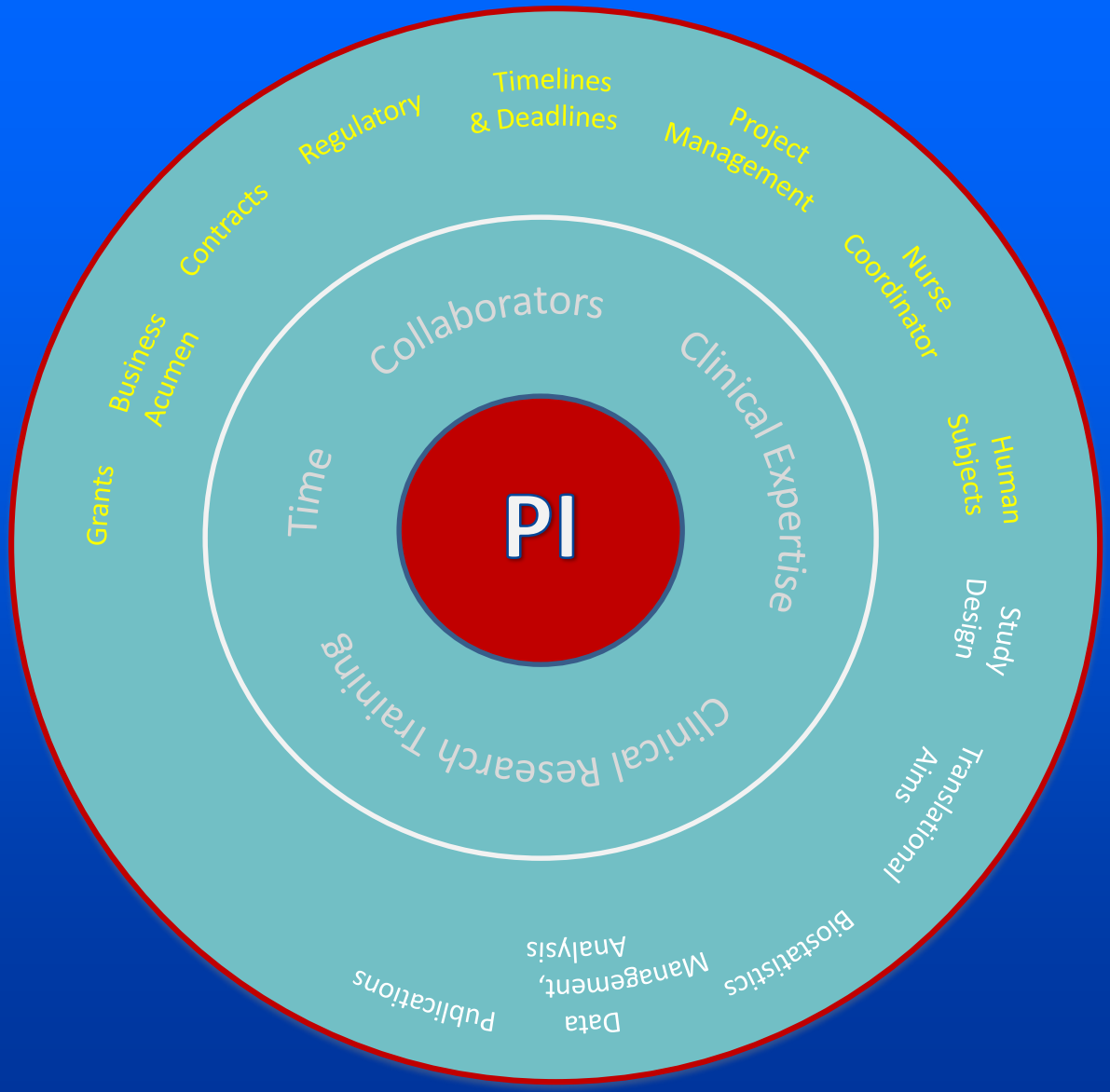
Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	Coordinators
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	Project managers
Manage data, run directed analyses	Masters level biostatisticians
Plan and execute complex analyses	PhD Biostatistician
Bring new energy, grow program in new directions, work on grants, future collaborators	Students, pre/post docs
Read your aims page, provide practical advice	***Colleagues***
Scientists with expertise you lack	

Who do you need on your team?

What they do	What they are called?
Help you see what you can't	Senior mentor
Execute your studies (consent patients, monitor patients per protocol, enter data)	Coordinators
Develop and negotiate budgets, monitor contracts, manage staff, develop protocols and SOPs	Project managers
Manage data, run directed analyses	Masters level biostatisticians
Plan and execute complex analyses	PhD Biostatistician
Bring new energy, grow program in new directions, work on grants, future collaborators	Students, pre and post docs
Read your aims page, provide practical advice	Colleagues
Scientists with expertise you lack	***Collaborators***

Many moving parts to clinical research



* Not to scale

Coordinator, Project Managers and Team Science

- On the frontline interacting with
  - Subjects
  - Investigators
  - Lab techs
  - Data managers
  - Regulators
  - Sponsors
  - Grant managers

Coordinator, Project Managers and Team Science

- *And they will document everything!*

Many processes to navigate

- Processes ***internal*** to PENN
  - Clinical Trials Contracting Unit (CTCU)- confidentiality agreements (CDA)
  - Institutional Review Board/Office of Regulatory Affairs (IRB/ORA) at PENN, CHOP, VA
  - Office of Research Services (ORS)
  - Investigational drug services (IDS)
  - Office of Clinical Research (OCR)
  - Office of Environmental Health and Radiation Safety (EHRS/RDRC)
  - Center for Human Phenomic Science (CHPS)
  - Cancer Center (UPCC/CTSRMC)
  - Billing Department (Family account creation/administration/Research Billing number)
  - Departmental administrative staff
- Processes ***external*** to PENN
  - FDA
  - NIH
  - Study Sponsor
  - Study Contract Research Organization (CRO)
  - Study subcontractors (e.g. advertising, labs, etc)

Many things to track and monitor

- Protocol
- Protocol signature page
- Investigator Brochure
- Documents given to the subject:
- Dated, documented approval by IRB and other committees as required
- IRB committee composition
- Interim or annual reports to the IRB
- CV and/or other relevant documents evidencing experience of Principal Investigator and Sub-Investigator(s)
- Normal values/ranges for medical/laboratory/technical procedures and/or tests included in the protocol
- All accreditation/certification (Lab CLIA and CAP)
- Instructions for handling Investigational Product(s) and trial-related materials
- Decoding procedures for blinded trials

- Trial initiation monitoring report
- Communication
- Documentation of Investigational Product(s) and trial-related shipment
- ***ORIGINAL SIGNED INFORMED CONSENTS
- Serious adverse events and related reports and all required submissions for them
- Subject screening log
- Subject identification code list
- Subject enrollment log
- Investigational product(s) accountability at the site
- Documentation of destruction of investigational product(s) if done at site
- Signature sheet
- Final report by Investigator to the IRB

CFR and GCP

How do you get $#!& done?

- Have a dedicated staff
- Parallel process – avoid series!
- Communicate with the IRB, ORS, and OCR
- Know the regulations
  - How and when can you get an IND exemption?
  - What is routine care vs. research care?
- Regular team meetings with action items
- Manual of procedures

Week 12 or Early Termination Study Documents:	Database Description Form Code
CRF: Week 12 or Early Termination	PW12
CRF: PASI: Psoriasis Area Severity Index	PASI
CRF: Targeted Physical Exam	Pexam
CRF: Adverse Event and Intercurrent Illness Log	AE
CRF: Concomitant Medications Log	CMED
CRF: Dermatology Life Quality Index	DLQI
CRF: EUROQOL Health Questionnaire	EQOL
CRF: International Physical Activity Questionnaire	IPAQ
CRF: Multi-Dimensional Health Assessment Questionnaire	MDHAQ
CRF: MEDFICTS Dietary Assessment Instrument	MEDFICTS
CRF: FDG-PET/CT scan prescription form & protocol	FDG-PET/CT
CRF: Specimen Collection Form	--

Week 4, 8, 12 Biomarker Supplies	
Urine Specimen Collection Kit - Urine collection cup - Towelettes (enclosed with urine collection cup) Urine Specimen Transferring Kit - (2) 50 ml conical vials - (2) absorbent material squares - (1) absorbent pad - (1) biohazard bag	
Blood Specimen Collection Kit - (1) sterile, disposable 21 gauge butterfly needles - (1) plastic vacutainer tube guide - Sterile alcohol swabs - Gauze sponges - Tourniquet - Band aids - (1) 10 mL Serum Red top tube - (2) 10 mL SST red/gray top tubes - (2) 4.5 mL Na Citrate blue top tubes - (3) 10 mL EDTA lavender top tubes - (1) 6 mL EDTA lavender top tube- *if the subject is identified as a diabetic*	
Blood Specimen Processing Kit - Disposable Transfer pipettes - (2) absorbent material squares - Ziploc plastic storage bags - (4) 2 mL cryogenic vials	

Psoriasis Research: A team based approach

Overarching themes:

- Define the natural history of psoriasis
- Investigate the safety and effectiveness of experimental and approved systemic psoriasis treatments
- Multi-disciplinary: Involves 35+ investigators from 12 institutions and 10+ disciplines
- Prospective data collection on over 15,000 subjects

Overarching goal:

- Improve psoriasis patient outcomes in the skin and joints, while lowering the risk of diabetes, CV disease and mortality

Translational Epidemiology: Conceptual approach

Cross Sectional
(Descriptive)
(i.e., Define prevalence of CV risk factors in psoriasis)

Cohort, Case-Control
(Analytical)
(i.e., Define risk of CV disease)

Clinical Trial (*Explanatory vs Effectiveness)*
(i.e., Determine how treatment impacts CV disease)

Prevalence of cardiovascular risk factors in patients with psoriasis

Andrea L. Neimann, MD,[a,b] Daniel B. Shin, BA,[a] Xingmei Wang, MS,[b] David J. Margolis, MD, PhD,[a,b] Andrea B. Troxel, ScD,[b] and Joel M. Gelfand, MD, MSCE[a,b]
Philadelphia, Pennsylvania

Risk of Myocardial Infarction in Patients With Psoriasis

Joel M. Gelfand, MD, MSCE
Andrea L. Neimann, MD
Daniel B. Shin, BA
Xingmei Wang, MS
David J. Margolis, MD, PhD
Andrea B. Troxel, ScD

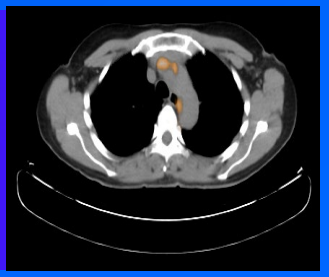
Context Psoriasis is the most common T-helper cell type 1 (T_H1) immunological disease. Evidence has linked T_H1 diseases to myocardial infarction (MI). Psoriasis has been associated with cardiovascular diseases, but has only been investigated in hospital-based studies that did not control for major cardiovascular risk factors.

Objective To determine if within a population-based cohort psoriasis is an independent risk factor for MI when controlling for major cardiovascular risk factors.

Design, Setting, and Patients A prospective, population-based cohort study in the United Kingdom of patients with psoriasis aged 20 to 90 years, comparing out-

LITE STUDY

ViP



Enrollment N=96 completed May 28, 2015!

Suggested Readings

- Resources: https://www.teamsciencetoolkit.cancer.gov/public/whatists.Aspx
- Steer, C. J., Jackson, P. R., Hornbeak, H. , McKay, C. K., Sriramarao, P. and Murtaugh, M. P. (2017), Team science and the physician–scientist in the age of grand health challenges. Ann. N.Y. Acad. Sci., 1404: 3-16. doi:10.1111/nyas.13498