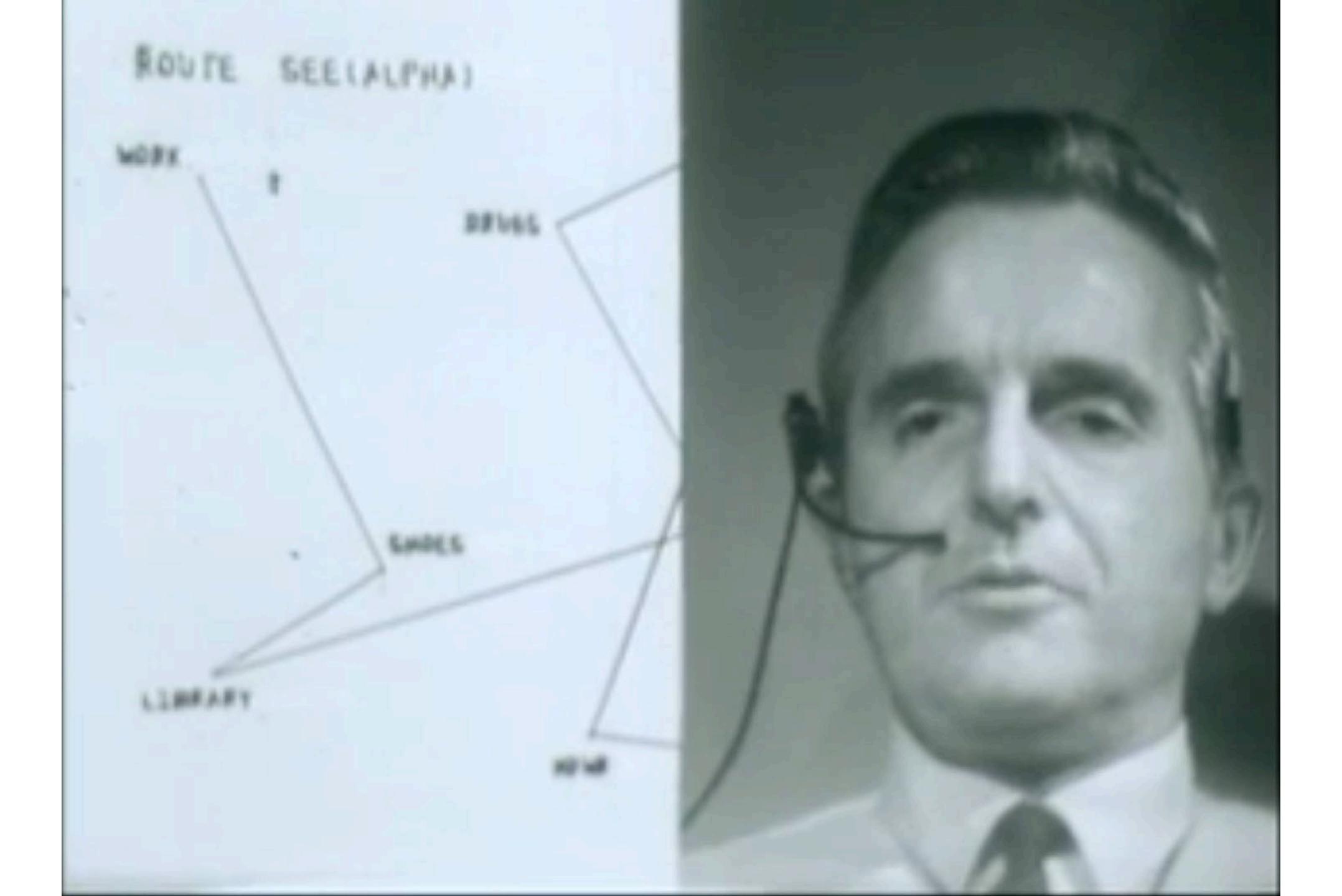
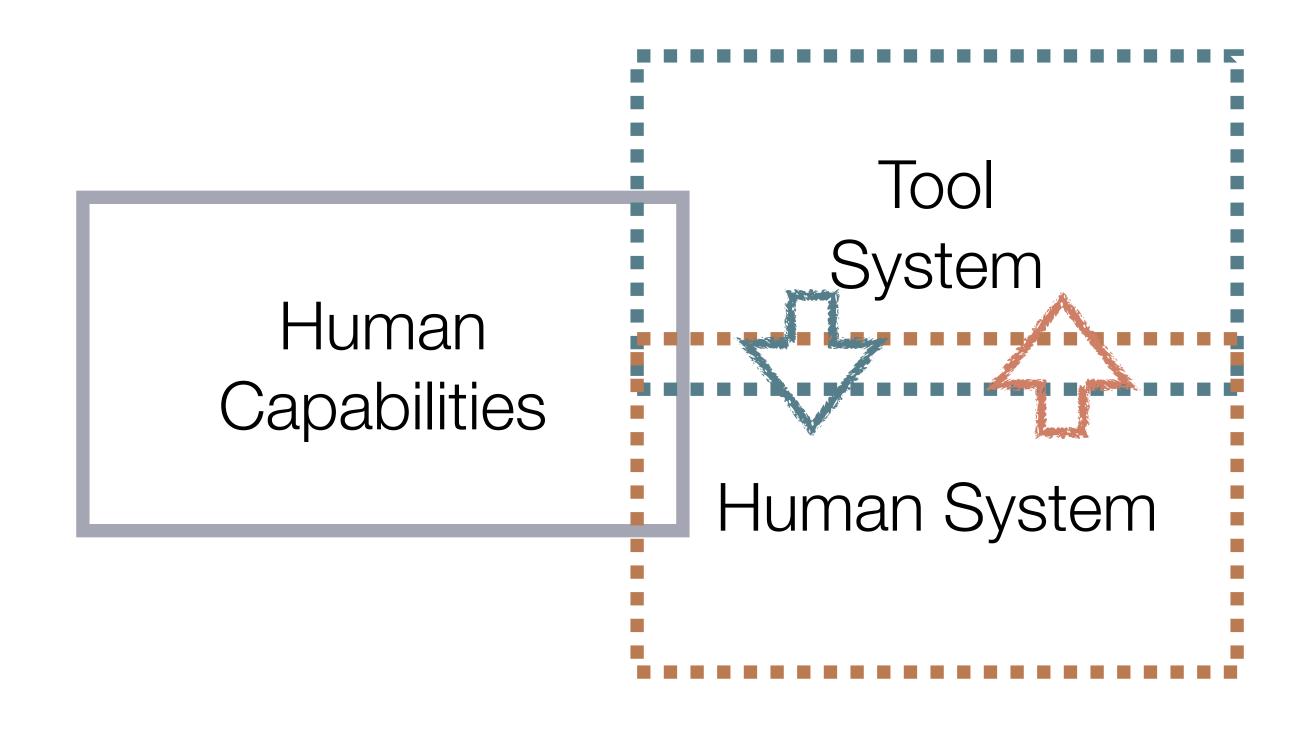
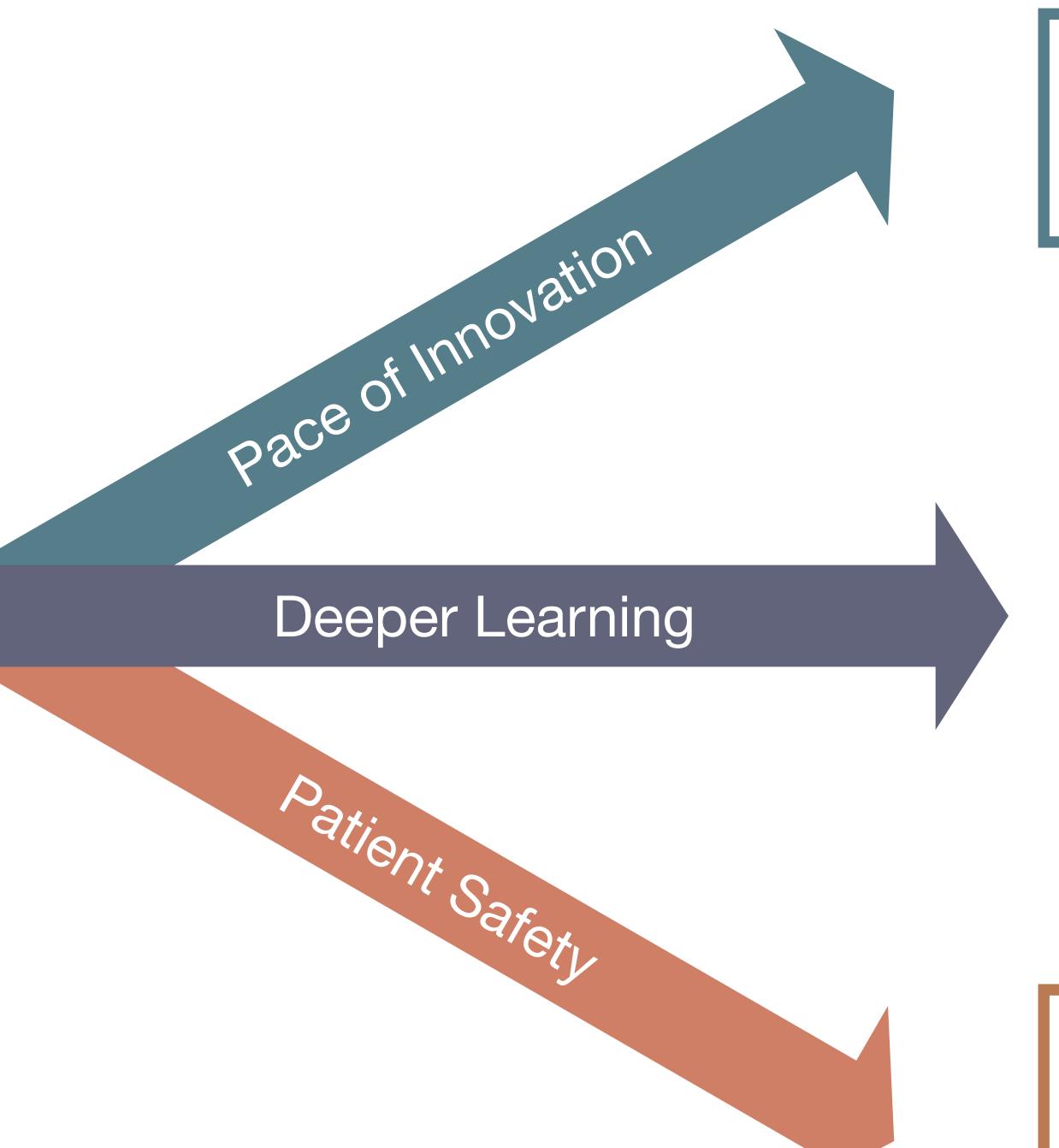
Getting Better (Faster): Thoughts About the (Near) Future of Medical Education

Ruben R. Puentedura, Ph.D.



Bootstrapping the Augmentation System (Engelbart, 1968)





Modification

Augmentation

Substitution

Quality Models (e.g. Deming 1982)

Error Models (e.g. Reason 1990)

Tech allows for the creation of new tasks, previously inconceivable

Modification

Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

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John E. Hall PhD Guyton and Hall Taxtbook...Medical Physiology E-Book directions to interdigitate with the myosin filaments. The Z disk, The title malecule also appears to act as a template for initial forwhich is composed of flamentous proteins different from the actin mation of postions of the contractile flaments of the sarcomere, and myoria filaments, passes crosswise across the myefibill and also crosswise from proofibril to mychoril, attaching the myofibrils to one another all the way across the muscle fiber. Therefore, the entire muscle fiber has light and cark hunds, as do the individual myof brills. These bands give skeletal and cardiac muscle their strilies betw Ask authors for slides for: From Vhen the musde fill Bibasome to Sarcomere - Titin pine 6-5, the axin Dynamics in Strieted Muscle Cells ince, and Michael Gotthardt, Franziska step one another Rudolph, Judith Huettemeister, spelie of gereratir Katharina da Sliva Lopes, Lily Yu, IIIIn Fili Nora Bergmann, Claudia Fink, Eva apringy and changes length as the sercomere The side-by-side relationship between the myosia and actin fila-Sarcoplasm is the intracellular Fluid between Myefibriis. ments is maintained by a large number of flamentous melecules of a protein called tink (Figure 6-3). Each titin molecule has a molec-The many monthrils of each muscle fiber are suspended side by ular weight of about 3 million, which makes it one of the largest side in the muscle fiber. The spaces between the myofibrils are protein molecules in the body. Also, because it is filamentous, it is filled with intracellular fluid called savoplass, containing large v:ry springs. These springy titin molecules art as a framework that holds the myosin and actin filaments in place so that the contractile protrin exames. Also present are tremendous numbers of mits machinery of the saccurere will work. One end of the title melshould that lie parallel to the myofbills. These mitochondria supecule is elastic and is artiched to the 2 disk, acting as a spring and ply the contracting myofibrils with large amounts of energy in the changing length as the sarvomere contracts and relaxes. The other form of adenosine triphosphate [ATP] formed by the mitochondria. part of the title molecule seshers it to the myosin thick filament.

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in some in connections. Some right are over consistent as a super or ani-connect therapy. Several small molecules were recognized as potent inhibitors of Eg.L. Interestingly the inhibitors that in the common probes in Eg.S more domain. STLC is one of the well-known potent inhibitor of Eg.S. The crystallo-gaselist structure of Eg.S-STLC councies revealed that STLC bands to the packet composed of al., or is belt and loop E. The inhibitory reschances of STLC has been well studied. Protectorous molecules such as anothernous and accordance which there were their state or one would as anothernous STLC has been well studied. Protectorous molecules each as anotherous and groupper desirations, which shangs their structure and proposition review-itly by light intentation, are expected to be applicable to photo-owiches of biomatoriachines. Freeloadly we have demonstrated that STLC analogues composed of archeocorous (MCTAR) or spirosyma (SPAPA), inhibit Egs AThan activity andimotor seriods prote recordely upon UV and rightle light irradiations. Moreover, Belancell division was photo-regulated with ACTAD. In this states, we have nicel to mady the optimum conditions to regulate the function of Ers with the elegonatorial inhibitors we have conflicted in the function of Eg5 with the photochromic inhibitors we have synthesized. In the rosults, pH and onic strength dependent effect of the inhibitors on the ATPase activity and Eg5 driven microsubult glifting. At pHr. 8, 5P APA showed signif-icans officiency to control ATT are and onder activities as an inhibitor that has a phono-sorteining system. 2:00-Pos Bourd 84,8 Tight Caspling between the Heat Dissipation and Molecular Molter's Transpart Properties in Nanoquillarium Strady State Wassed, Hwang, Changlering Byzon. Computational Sciences, Koron Institute for Advanced Study, Seed, Koron,

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reprote or.

We report a thousetical analysis showing tight coapsing between relocity V,
diffusion coefficient E, and the heat final-patient of known—i motor protein
which is remaindent of the accent surprising observation of enhanced diffunicity of construencia energies in solution by its even analysis transcent (Riedel et al., Nature, 2005). From the quantification of V. D. and test dissipation in terms of rate constants using periodic one-dimensional hopping model, we found: (i) D increases in the form of 3rd water polynomial of V when V is sugmented by the increase of ATP conventions; (ii) the increase of diffusugmented by the increase of a fir conservance, (a) the increase of diff-nicity with the host production is a natural success of systems in so-spatishium seedy states ((ii) the energytic cost for determining the position of a Kinesin-1 with a given precision is close to lower bound.

Cytoskeletal Assemblies and Dynamics

Pron Ribestine o Saroanere - Titis Bysanici in Striage Musde Cetts
Michael Got hardt - Franciska Radoloh', Judith Huetemeister',
Kafhaina da Shva Lopes', Lily Yué', Nova Bergmans', Claudia Fink',
Eva Wagneri', Stechna Labant', Cand Gregorie',

¹Man Delfouret, Centra in Nobradia Medicine, Berlin, Grunnary,

²University of Arterna, Tuesen, AZ, USA, 'Coeffingen University,
Goethiere, German,

Nisha Mohd Batiq', Zi Ziao Liou', TingTing Jiang', Cheng han Yu',

Barl Missolaina', Garcín Jones', Alexandor Sersindoly.

"Mechanossopy Institute, Sugapore: Sugapore: "King's Cellege London, London: United Kingdom.

Boloscorus represent a special disso of integris-mediated ref.-matrix adhesions

Indicators represent a special class of integria-mediated rell-mitrix adhesions formal by nigrating and matrix degrading cells. First, we demonstrated that is unacceptage-file T-BFI cells and in illustrates is imitated to produce pole-somes, down-regulation of A-BFI bysis-SAA, and by pharmacological introtters led to triking podocome dimination. Treatments that induced podocome formation increased the lowed of GFB-haund A-BFF Fortherments, siz-NA lenselsdown of the A-BFI GEF A-BFO also resolved in dearnatic polesions inhibition. A-BFO was found to volocation with the adhesive rings of podo-cents of the A-BFI and conditional resident account resolved connection. somes while AAJT was ionalized to vesicular structures transfertily counciling posicome rings. Inhibition of ARFI led to an increase in BhoAGTP levels and taggeted assembly of myosin-ILA filaments in TRF1 cells that resemble increasing like organization typically observed in theselfant, whilst the exp-passion of asymmelfa nearest positional formation despite AEF1 inhibition. Finally, expension of constitutively native AEF1 in filtrotions induced ferma-tion of guidaline sites and containing proteins of the professorie over but not of the adhesivering. We conclude that ARNO ARF1 requisits fermation of pode-sories by inhibition of Ehrelmyonia II and promotion of actic core assembly.

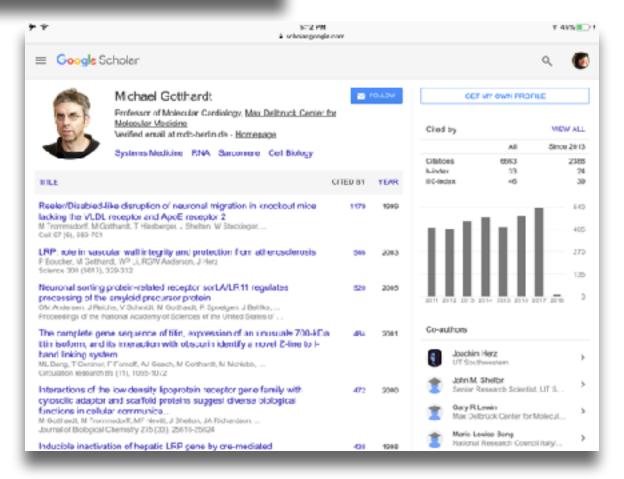
2111-Peo Board 8-31 Local Palses of Rhou Activation Assemble Polarized Network Architectures for Efficient Automosia Contractility François B. Robini, Josephan M. Michard, Edwin M. Marro', Developmental Biology Department, Institute for Biology Paris-Some, Bais, Franço, Medicador Genetics and Cell Richogy, University of Chicago,

Chronge, R., USA. Spotsolemooral patterning of actomyosin contractifity plays a key role in cell. and tissue morphogenesis during early development. In embryonic cells, acto-myosin sensys are highly-dynamic structures that remodel on attime scale of 10s noyen urays or highly-dynamic structures that remodel or attimescale of the of seconds, through a combination of local actuarycein numerous and upid spatial reduction of flammos and motors surroul by myosin activity or action polymenzation because of these dynamic and active properties, contractivity is complex and intrinsically self-organizing.

We used the C-objects early embryon to understand how cells pattern lone-generation brough head modulation of self-organized contractibity, forusing on which of the contractibity is described embryonistics.

pulsed contractlity in the C. ciegow embryo.

pulsed contractify in the Collegeme order, or we combined two-color fluorescence imaging, live single-molecule imaging, particle tracking, image malyris, and numerical modeling to tease apart the mechanisms of pulse intitation and termination. Our results formentiant that the mechanism component (advertisely played little rule in pulse intitation or translation, and flust the process was mostly governed by Actio and Myssin turnover. In our system, autocitacybe RhoA advanton/recruitment is responsible for guide intuition, while the delayed recruitment of a RhoA inactivator



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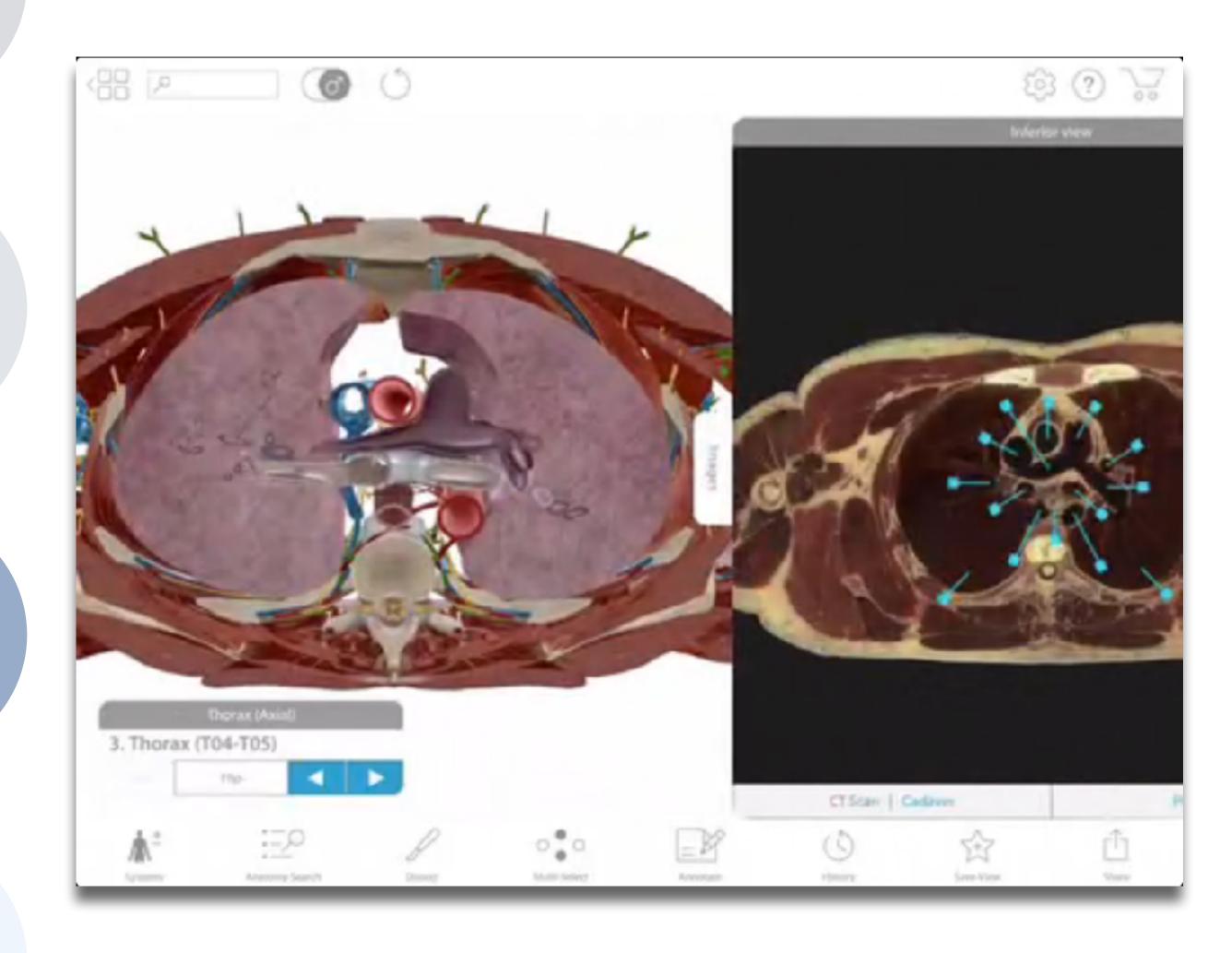
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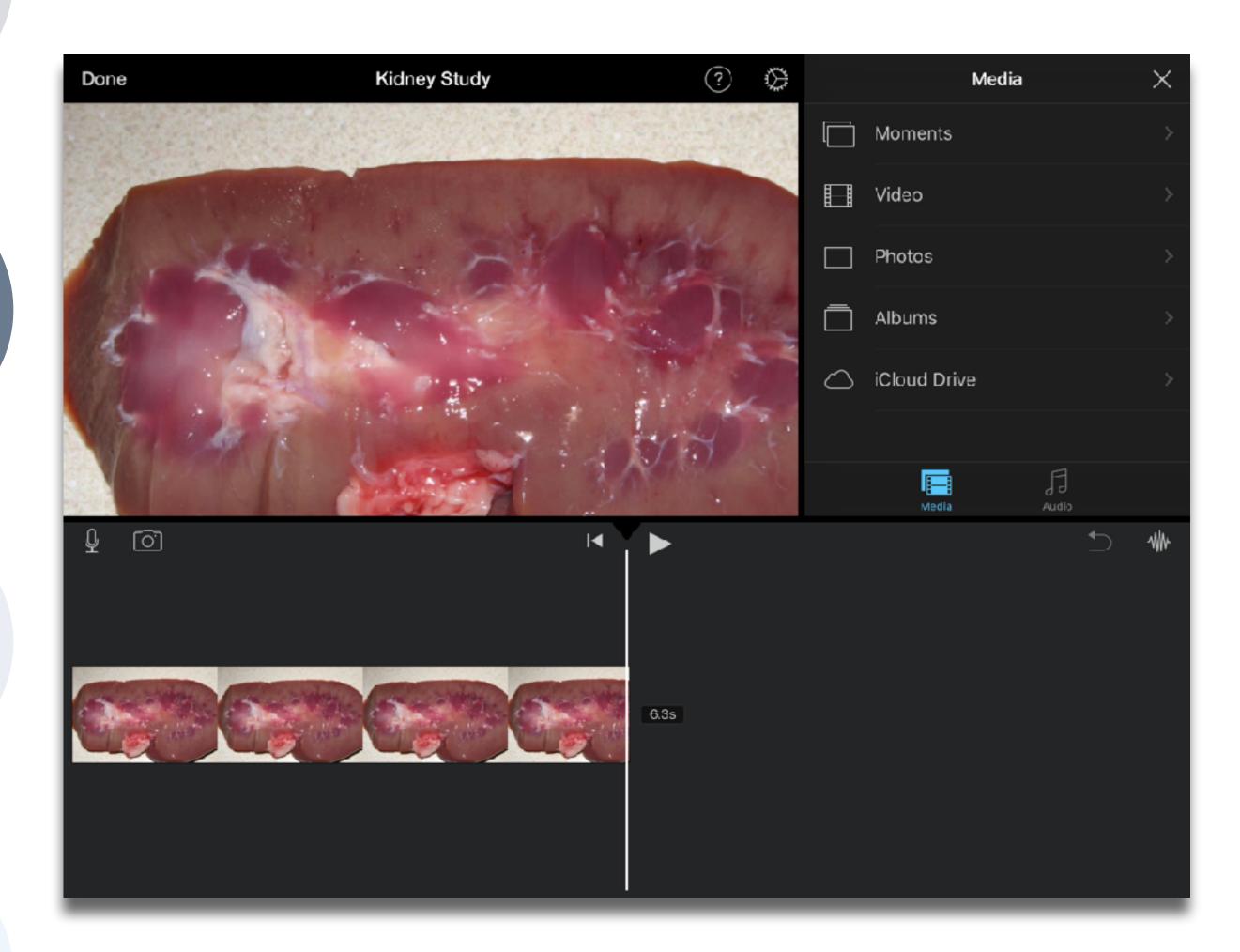
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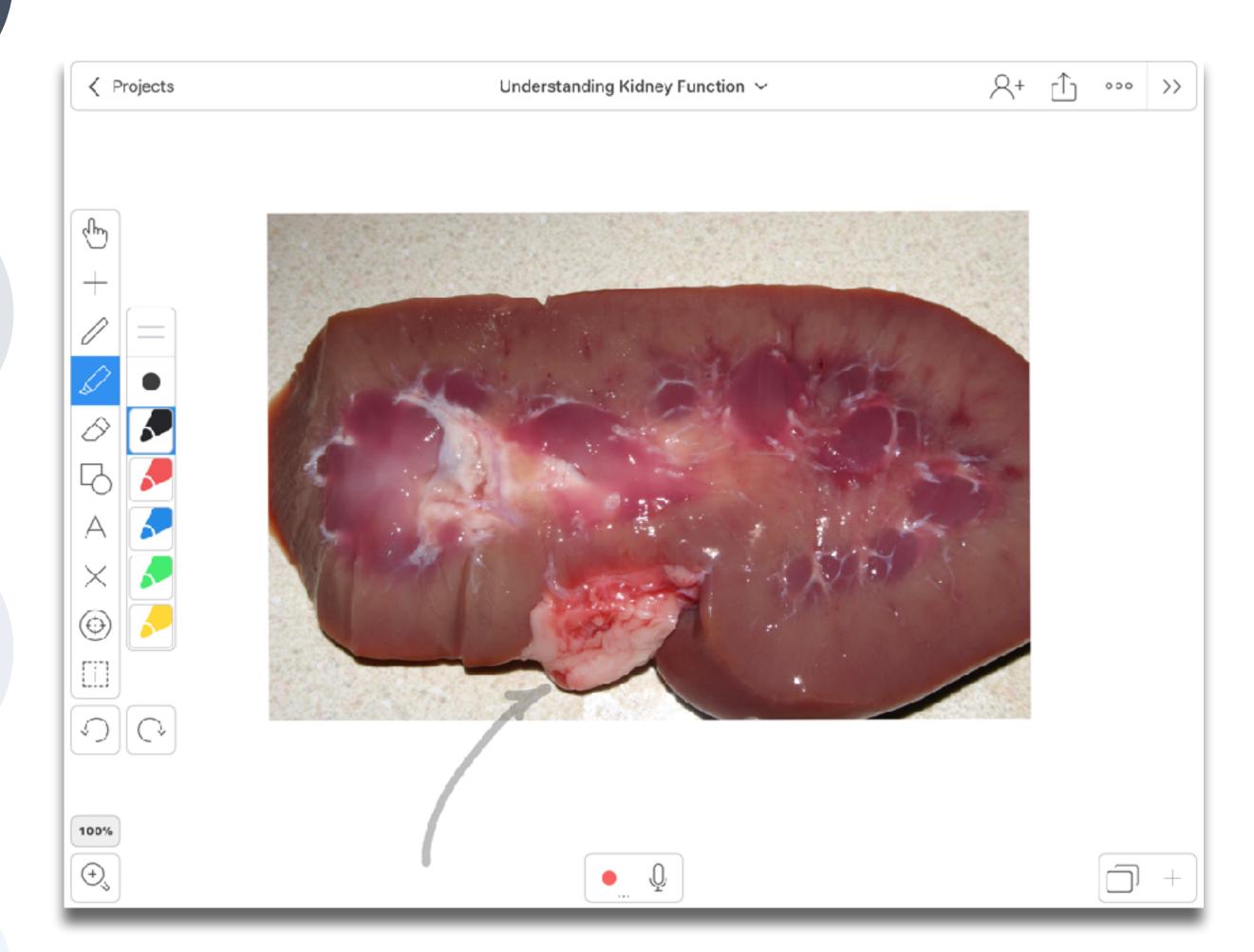
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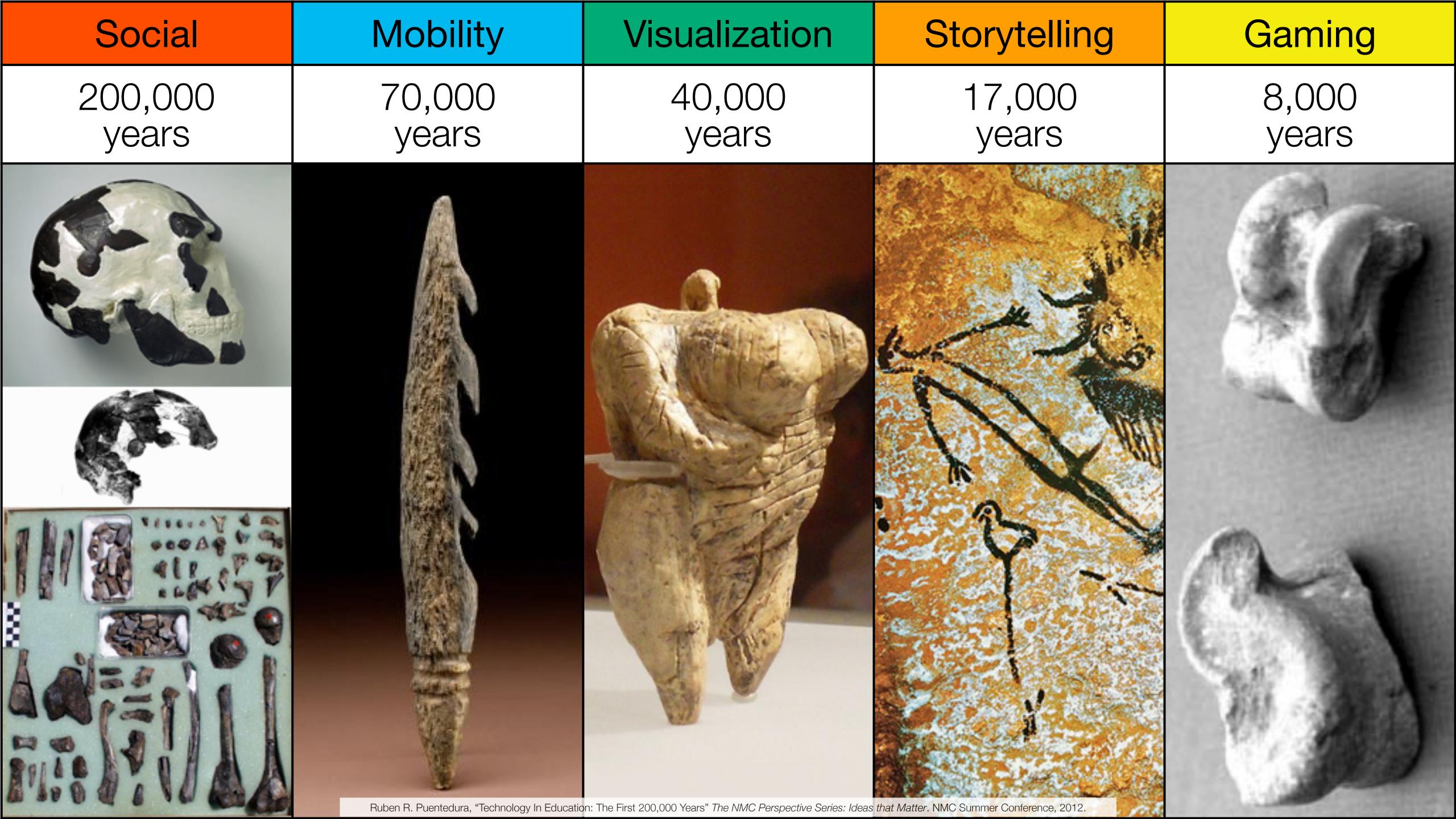
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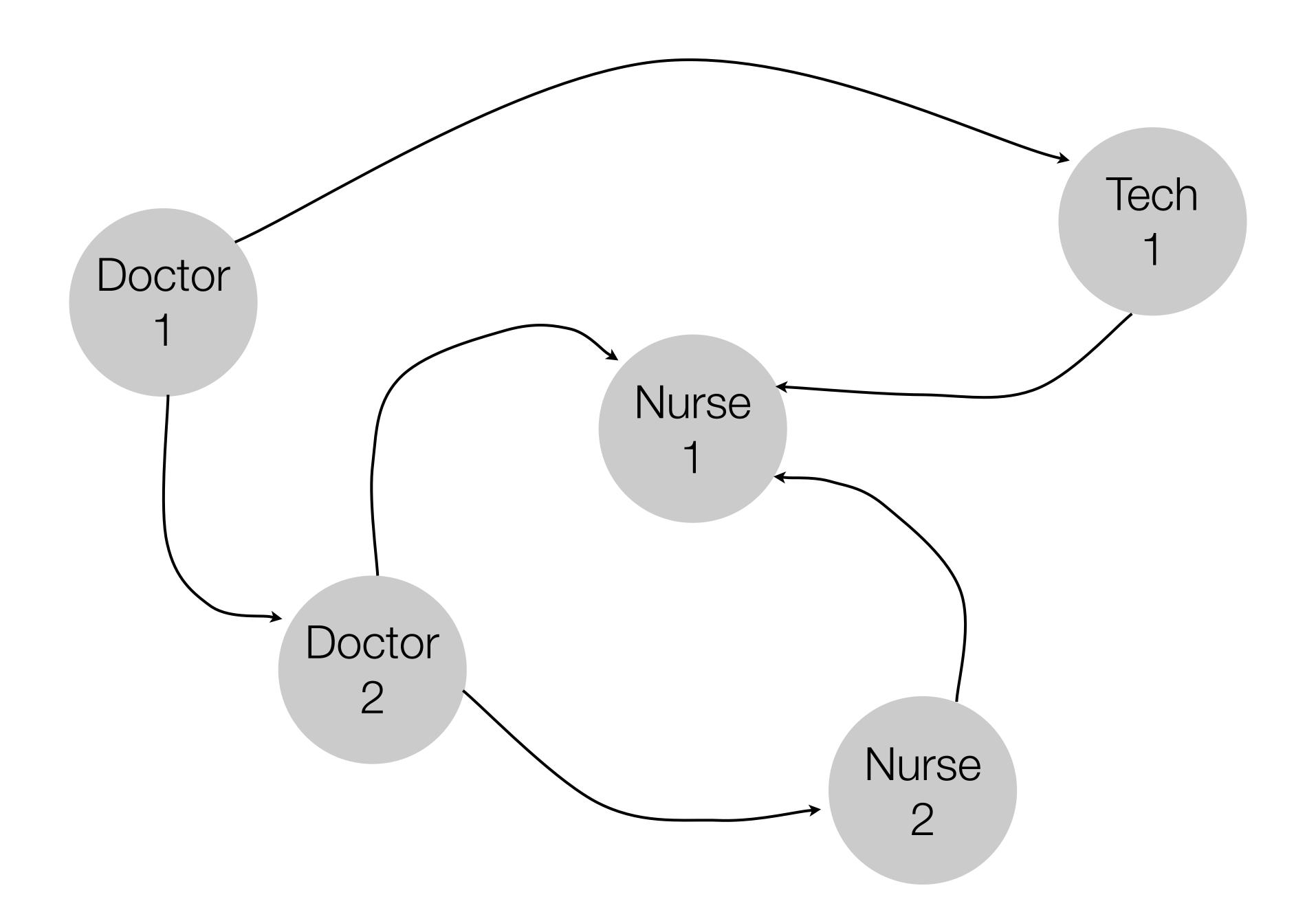
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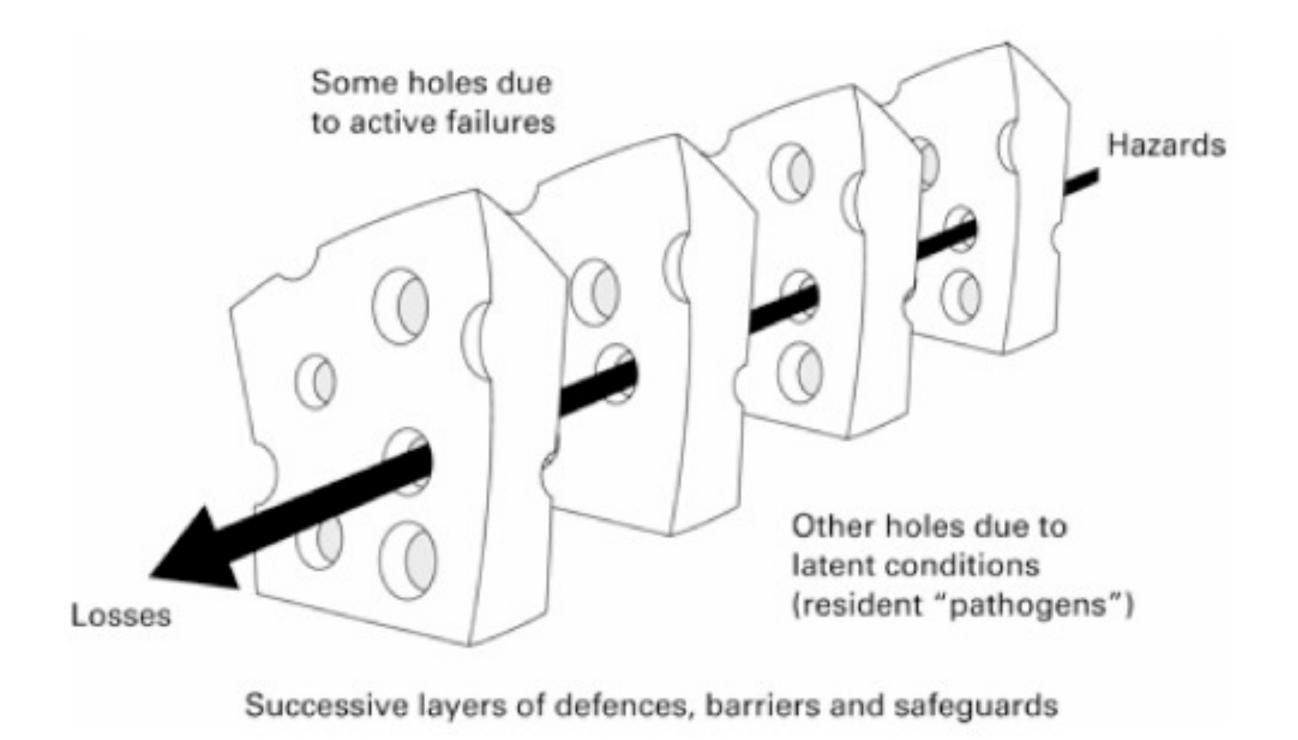
Substitution





| The EdTech Quintet – Associated Practices | |
|---|---|
| Social | Communication, Collaboration, Sharing |
| Mobility | Anytime, Anyplace Learning and Creation |
| Visualization | Making Abstract Concepts Tangible |
| Storytelling | Knowledge Integration and Transmission |
| Gaming | Feedback Loops and Formative Assessment |







Anticoagulants and Communication

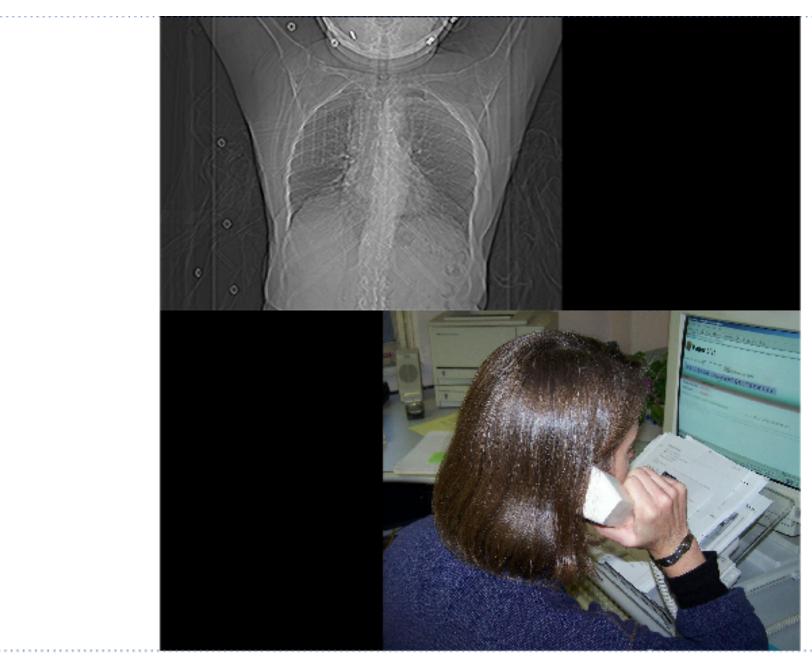


Why is this so complicated? I just want a piece of tissue!

I forget how many people "touch " the patient... to get this stuff done.

Frank Monroe, M.D.

Expectation Disappointment Understanding Communication Appreciation



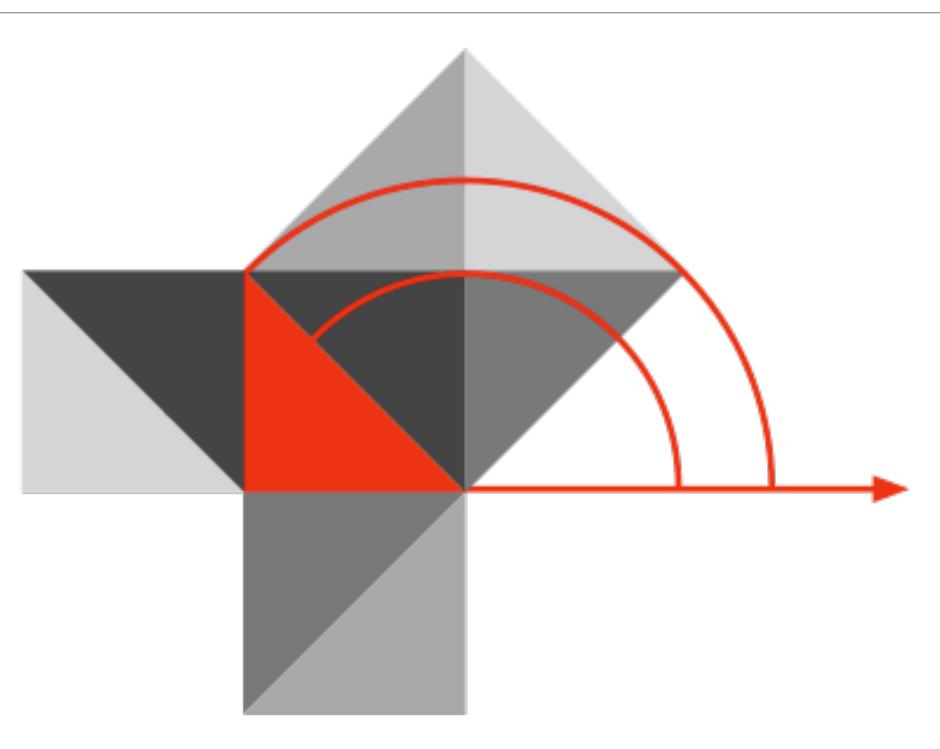








Hippasus



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