

AUSTIN FORUM

ON TECHNOLOGY & SOCIETY

Connect. Collaborate. Contribute.™

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ON TECHNOLOGY & SOCIETY

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Dr. Nishi Viswanathan, MBBS, MA, MBA
Director, Texas Health Catalyst
Dell Medical School
Assistant Professor
College of Pharmacy & College of
Natural Sciences
The University of Texas at Austin

How Biotech, Health Tech, and Med Tech Are Advancing Healthcare

August 2, 2022



Dr. Scott Collins
Board of Directors, President
BioAustinCTX

*Welcome to the
Austin Forum on Technology & Society!*

*Thank you for joining our community
online or in-person!*

Thank you, Heather (but not goodbye!)



Heather Bishop
Managing Director (former)

Austin Forum Team!



Jay Boisseau
Executive Director



Delanie Majors
Communications Coordinator



Mary Garza
Web/UX Designer



John Lockman
Tech Director

And many many thanks tonight to Allison Warner (former managing director!)
and Michelle Marshal for helping us out!

Welcome New Annual Partners!



Optiver 

The logo for Optiver consists of the word "Optiver" in a large, black, sans-serif font. To the right of the word is a red, hollow triangle pointing upwards, which serves as the company's logo symbol.

GOOD
SYSTEMS
A UT Grand Challenge

The logo for Good Systems features the word "GOOD" in a bold, orange, sans-serif font. Below it, the word "SYSTEMS" is written in a larger, bold, dark blue, sans-serif font. Underneath "SYSTEMS", the text "A UT Grand Challenge" is written in a smaller, dark blue, sans-serif font.

Our Annual Partners Make This Possible!



Awesome AF Advisory Board!



Craig Aumann
CVEX



Fares Bagh
Arm



Kuan Collins
SAIC



Brad Englert
*Brad Englert
Advisory*



Hugh Forrest
SXSW



Sherri Greenberg
UT LBJ School



Mitch Jacobson
*Austin
Technology Incubator*



Mike Ignatowski
AMD



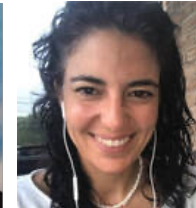
Harold Ingersoll
Atchley & Associates



Janice Omadeke
The Mentor Method



Karl Popham
Austin Energy



Elizabeth Quintanilla
Marketing Gunslingers



Matt Sanchez
CognitiveScale



Michael Shepherd
Dell Technologies



Jay Williams
CVEX

Before we get started, join our slack

Why join the Austin Forum Slack workspace?

- Continue and deepen the conversation after Austin Forum events
- Find new opportunities for collaboration, mentoring, working, and more
- Promote local events and relevant Tech & Society opportunities
- Because this gives *everyone* in our community—online and in-person—the *same* way to ask questions!

How?

1. Open a web browser
2. Go to: www.austinforum.org/slack
3. Click “Join the Austin Forum Slack Workspace”
4. Enter your email address
5. Check your email to confirm Slack invitation
6. Enter your name and click “Create Account”
7. You’re in! You can use the Slack mobile app now, too.
8. To submit questions during the event, in the channel **#event-questions** (add to your view using + **Add channels**)

We have 4 kinds of programming!

Events	Online
Presentation + Networking events <ul style="list-style-type: none">• Live• Monthly• Presenter-focused• In-person and online—hybrid• Recording and slides posted online	Podcasts – Austin Forum Upload <ul style="list-style-type: none">• Audio only• Weekly• Conversation formats• Hosted in podcast stores, AF website
Discussion events <ul style="list-style-type: none">• Live• Monthly• Participatory for everyone• In-person or online• Never recorded!	Blog – Austin Forum Update <i>(soon!)</i> <ul style="list-style-type: none">• Text/graphics, web-based (or Medium)• Weekly• “techsplanations,” interviews, analyses/positions, and series• Hosted on Medium

Austin Forum Presentation + Networking Events: Experts Share, Inform & Inspire

We bring leaders, thinkers, builders, creators, and learners together to [connect, collaborate, contribute!](#)



6:00-6:15

“Doors open” for Zoom and room—mingle with in-person speakers or chat with online speakers in Zoom.
*Please self-introduce in **Zoom Chat!***

6:15-7:25

Main event & presentation
*Ask questions in **AF Slack #event-questions** channel,
Tweet with **#healthAF @AustinForum***



7:25-7:40

Q&A with presenters

7:40-7:45

Final comments/slides

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Austin Forum Upload: New Podcast Episodes!




- We are *weekly* now!
- Episodes #42-47 are now available online
(paused for July, resuming soon)
- Next three episodes are on:
 - Quantum computing
 - Innovation
 - Data

Q: Which technology/device has contributed most to your health and wellness?

(discuss with nearby attendee or type in Zoom chat, 30 seconds)

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

21 22 23 24 25 26 27 28 29 

Questions for
speakers?

Submit questions in
the AF Slack channel
#event-questions
for a chance to win a
SXSW 2023 Badge!

*Must be in-person and present at
~7:40PM to win!*

*Must use your name (first and
last) on questions!*



SXSW 

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ON TECHNOLOGY & SOCIETY

@AustinForum
#healthAF

And now, our featured presentation...

Please:

- ✓ Ask questions in the AF Slack in the **#event-questions** channel
- ✓ Share key points via Twitter with hashtag **#healthAF**
- ✓ ***Please be respectful*** of our speakers & audience in your comments & questions
- ✓ Learn, think, enjoy!





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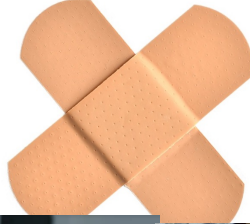
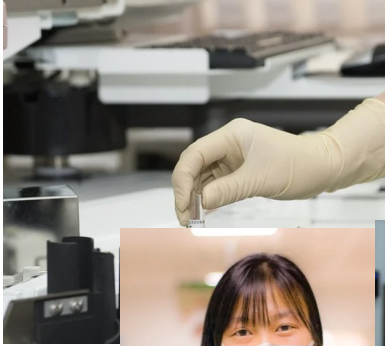
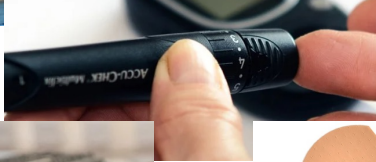
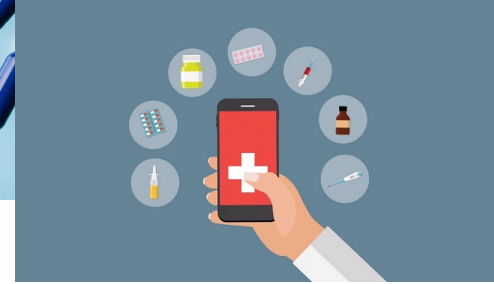
Dr. Scott Collins
Board of Directors, President
BioAustinCTX

How Biotech, Health Tech, and Med Tech Are Advancing Healthcare

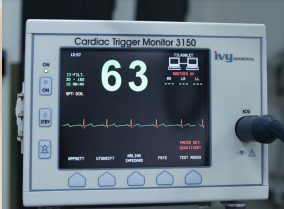
August 2, 2022

About me: Nishi Viswanathan

- Medical doctor by education, entrepreneur by heart
- Evangelist for innovation that meets three criteria – Impact, Ingenuity and Intensity (stole this from the GlobalData framework!)
- Huge advocate for pricing transparency and consumer empowerment.
- Have strong opinions about which innovations create true impact
- Healthtech and Medtech startup advisor. Have dabbled in almost every sector in healthcare.
- Faculty at UT Austin – Handing off our problems to the next generation. After all, they know everything!
- Skeptic and Optimist at the same time. How??

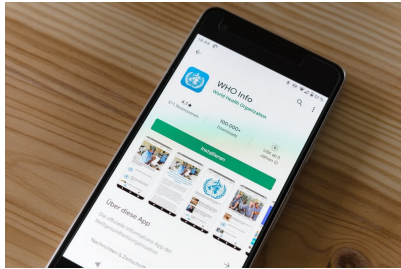
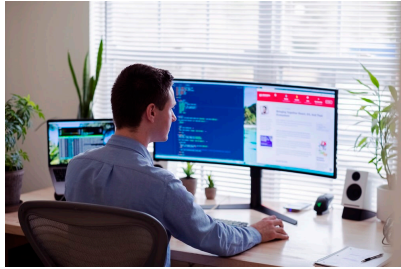


Health Tech, Medtech & Biotech: A wide spectrum



Healthtech

Tech for delivery, payment or consumption of healthcare. Typically, there is a software and/or data element.



Medtech

Devices that diagnose and/or treat disease. Typically, there is hardware involved. There may be some embedded software.



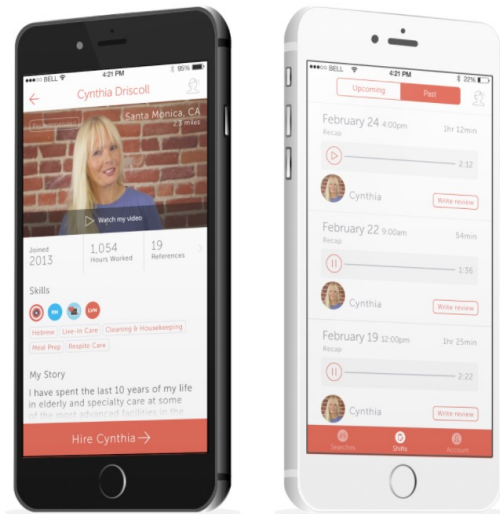
Biotech

Tech based on biology or chemistry – Therapeutics, Tissue/Cell based therapies



A (Home)Hero's Journey

- HomeHero – tech-enabled marketplace model to match caregivers with seniors.
- \$30B market. Real problem. Venture-backed.
- Policy change >> costs doubled!
- Shifted to an enterprise model selling to risk-bearing entities
- But no incentives for payers & health systems to pay for long-term home care
- Pilots ≠ contracts
- Concluded - Homecare not a technology problem. Market too local & too fragmented. Caregiver orgs not tech savvy.
- Rebranded as a telemedicine company for integrated care!

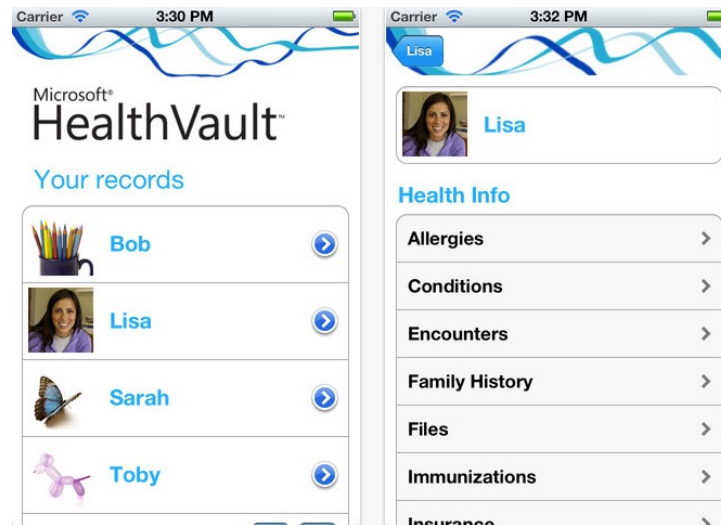


Do large companies fare better?

- Microsoft HealthVault – digital filing cabinet for patients to store and view their healthcare data
- Launched in 2007.
- Shut down a few years ago.
- Microsoft moved more to the B2B side of healthcare.

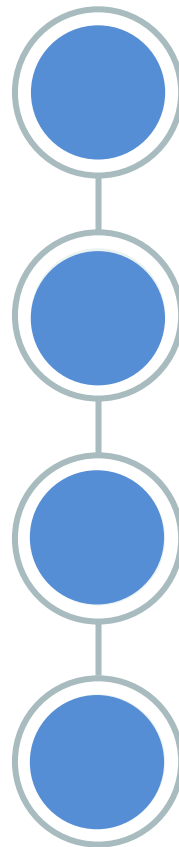
Market readiness? Timing? Functionality?

Low value to customers?



**Wait. Aren't we here to discuss all
the warm, fuzzy and cool stuff in
health innovation??**

**Let's talk about
some of the
factors that
make
innovating in
health care so
hard**

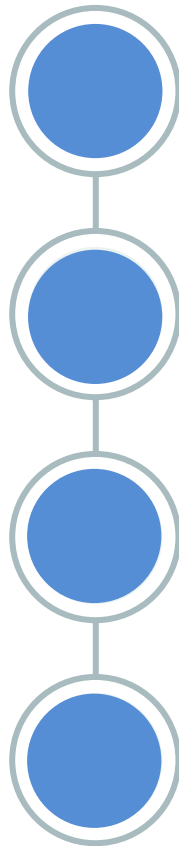


Complex healthcare systems
+ Complex human biology

Regulatory Environment &
Policy

Payers & Purchasing

Misaligned incentives all
across the board



Complex healthcare systems
+ Complex human biology

Provider organizations – many kinds & fragmented

Their priorities are.....

Labor shortages, Attrition, Profit margins, Constantly changing policy & payer landscape, Leakage, Different contracting mechanisms and different metrics for different contracts, Clinician burnout

and not....

technology, pilots, innovation, risky bets

Which of their problems can you fix?



Health record systems are set up for efficient billing not better care.

Integration is hard. Harder for startups! Getting better.

Exam - Anderson, Molly J (MeMe) [ACCT:1] [EHR:2]

05/03/14 Anderson, Molly J (MeM Age: 45 Layout: Laski Pre Op Health Hx: 08/27/14 Meds: 04/02/15 Co-Managed: Sr

Summary Complaint ROS Health Hx Objective Refraction Medication RS Preop Test Sum Plan PQR 2015 Documents

Summary

Diagnosis / Assessment and Plan

Date	Code	Description	Eye	Resolved
04/01/13	367.1	Myopia	OU	
04/01/13	367.21	Regular Astigmatism	OU	
05/03/14	367.1	Myopia	OU	

Assessment: Refractive testing reveals myopia (nearsightedness). Plan: Surgical options discussed with patient. Schedule Laski OU - Aim for plano.

Distance Visual Acuities / Pinhole

Date	SC OD	SC PH OD	SC OS	SC PH OS	CC OD	CC PH OD	CC OS	CC PH OS
04/01/13	20/400		20/200-1		20/20		20/20	
05/03/14	20/400		20/200-1		20/20		20/20	

Ocular Surgical History

Treatments / Injections

Family Information

Name	Age	Last Service
Anderson, Molly	46	10/02/15
Development, Heather		

Spectacle Spending History

Date	Retail	Received
02/05/15	\$300.00	\$217.14
03/03/15	\$232.00	\$0.00

CL Spending History

Refraction

Rx Date	Prism	OD Power	DVA	Add	NVA	OS Power	DVA	Add	NVA	Type	Use	Expires	Prescriber
05/03/14		-5.75 -0.25 090	20/20			-5.75 -0.50 095	20/20			Current Rx			
05/03/14		-5.75 0.00	20/20			-5.75 -0.50 095	20/20			Manifest			
05/03/14		-5.75 -0.25 090	20/20			-5.75 -0.50 095	20/20			Cycloplegic			

Ocular Medications

Date	Name	Start	Stop
05/03/14	20/20 Tears	04/14/15	

DRD Demo Doctor, M.D. B 001 OPEN



“My technology has benefits”... ...but for whom?

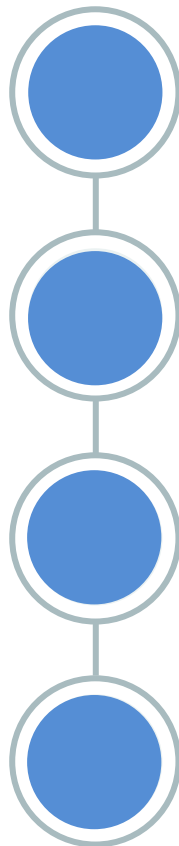
- Beneficiary – Patient
- End-user – Patient and Physician
- Buyer and decision maker – Provider organization
- Payer – Patient’s insurance company
- True Payer – In most cases, the patient’s employer OR Medicare/Medicaid

The human factor – biology & psychology

It's hard to....

- Discover and develop cures for most conditions.
- Test these cures.
- Leverage healthcare data to generate insights & make decisions - most data is unstructured and some data inaccurate.
- Get providers to change their workflows.
- Make people do what is best for them.
- Get people to think about their health unless they are sick.

An opportunity for entrepreneurs hidden in each of the above?



Regulatory environment
& Policy

Getting past all the regulation

- The FDA regulates health care products to make sure they are safe. It is all about risk!
- If your product requires FDA approval, this adds significant time and cost.
- HIPAA regulations are applicable to most useful healthcare data. More time. More costs.
- Policy changes all the time – can create headwinds or tailwinds

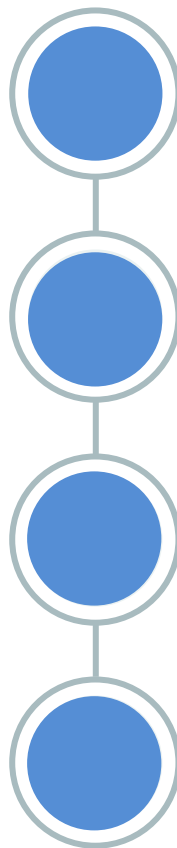


FDA U.S. FOOD & DRUG
ADMINISTRATION



Three main ways to generate revenue from healthcare innovation:

1. Consumer/Patient pays for it out-of-pocket – very small %
2. Payer reimburses for it
3. Customer purchases it

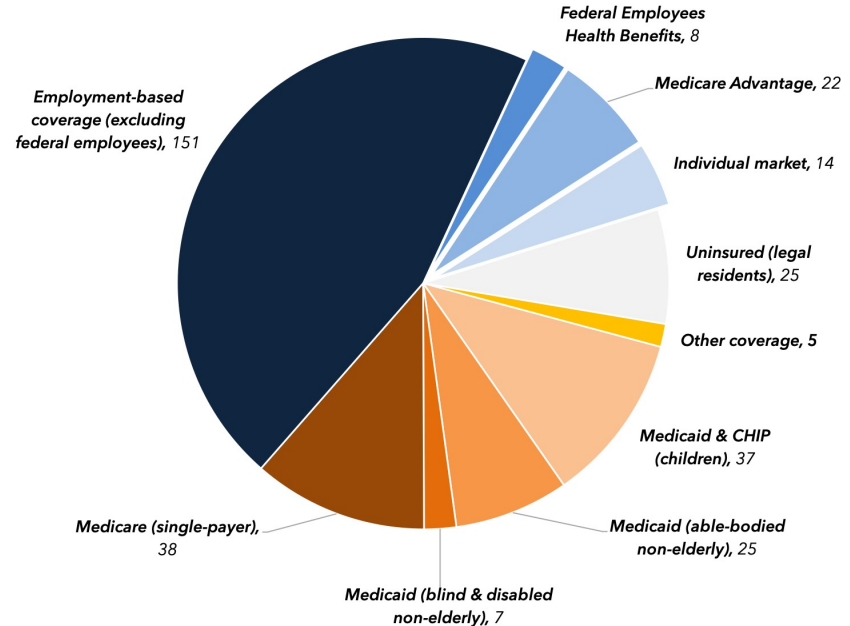


Payers & Purchasing

Payers – Who is footing the bill?

Health Insurance Enrollment in America, 2019 (Millions)

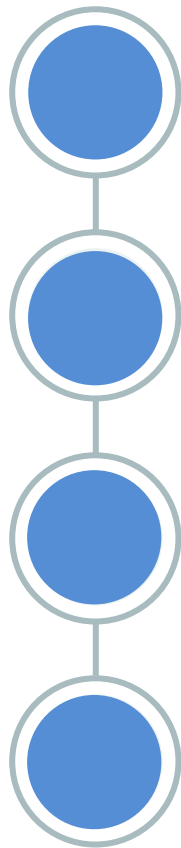
- The payer mix for each product is different.
- Different priorities for Medicare vs. Private payers
- What if the reimbursement is now and the benefits occur later?



Purchasing decisions in healthcare

- Too many stakeholders
- Complex value analysis model
- Middlemen – PBMs, GPOs etc. Each has their own priorities.
- Pilots ≠ contracts



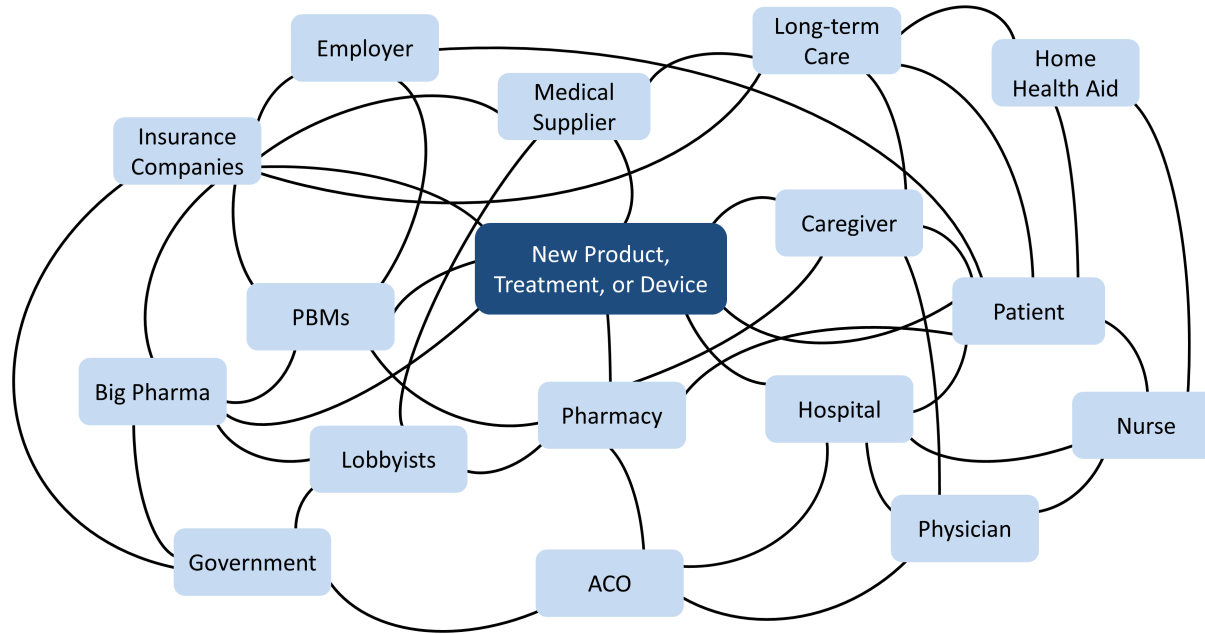


Misaligned incentives all
across the board

No one acts like you would expect them to

- Are payers incentivized to lower costs?
- Are providers incentivized to do what is best for the patient?
- Are policy makers incentivized to make decisions that lower costs and improve outcomes?
- Are innovators & product manufacturers incentivized to solve real unmet needs?
- OK but are patients incentivized to do what is best for them??

Balancing act for innovators



Source: <https://newrycorp.com/blog/healthcare-product-commercialization>

Then why bother?

OPPORTUNITY - Our healthcare systems have a long way to go before we balance quality, cost and access to care. We have a ton of problems waiting to be solved. 18% of our GDP!

NEED - Health care is messed up.
We need passionate problem solvers and entrepreneurs.

MEANING - Those of us in health care are here not because it is easy, but because it is rewarding. It is the most meaningful thing one can do.



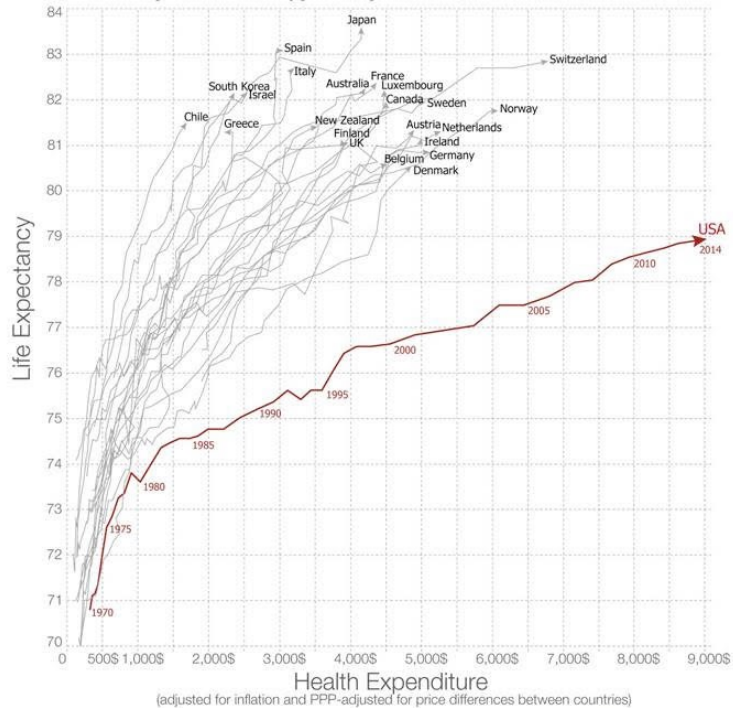
Up to the
challenge?

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Life Expectancy vs. HC Cost



Data source: Health expenditure from the OECD; Life expectancy from the World Bank. Licensed under CC-BY-SA by the author Max Roser. The interactive data visualization is available at [OurWorldinData.org](https://ourworldindata.org). There you find the raw data and more visualizations on this topic.

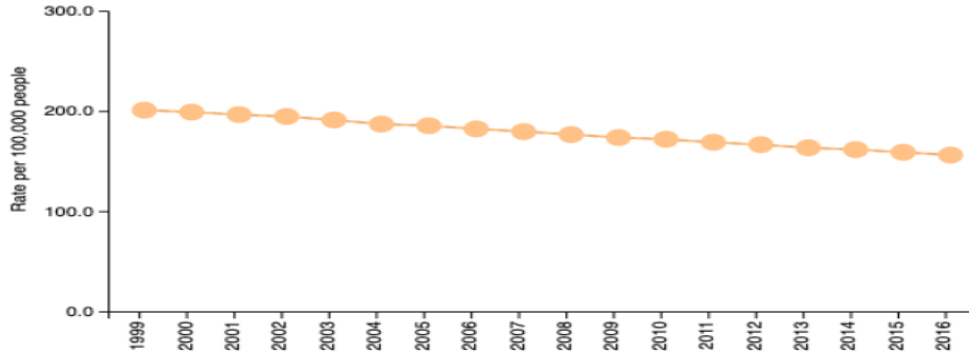
#	Country	Life Expectancy (both sexes)	Females Life Expectancy	Males Life Expectancy
1	Hong Kong	85.29	88.17	82.38
2	Japan	85.03	88.09	81.91
3	Macao	84.68	87.62	81.73
4	Switzerland	84.25	86.02	82.42
5	Singapore	84.07	86.15	82.06
6	Italy	84.01	85.97	81.90
7	Spain	83.99	86.68	81.27
8	Australia	83.94	85.80	82.08
9	Channel Islands	83.60	85.31	81.82
10	Iceland	83.52	84.90	82.15
11	South Korea	83.50	86.42	80.46
12	Israel	83.49	84.91	81.98
13	Sweden	83.33	84.97	81.69
14	France	83.13	85.82	80.32
14	Martinique	83.13	86.10	79.85
15	Malta	83.06	84.68	81.37
46	United States	79.11	81.65	76.61

We do some things right!



Annual Rates of Cancer Deaths, 1999-2016

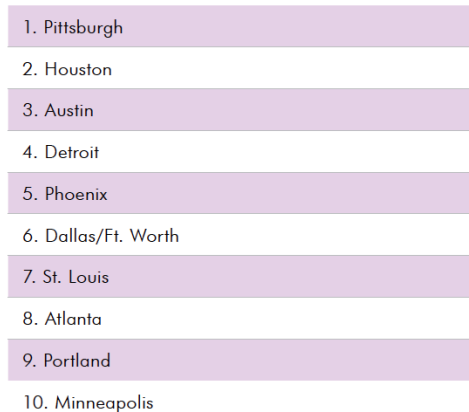
All Types of Cancer, United States



Data source – U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on November 2018 submission data (1999-2016): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; <https://www.cdc.gov/cancer/dataviz>, June 2019.

Why Austin?

FIGURE 2: U.S. TOP 10 EMERGING CLUSTERS



Source: CBRE Research, Q3 2020.

Note: Ranked by size and growth of life sciences employment, concentration of R&D life sciences employment, amount and growth of life sciences venture capital funding and NIH funding.

~300 Companies

Research Parks planned

~20 Colleges

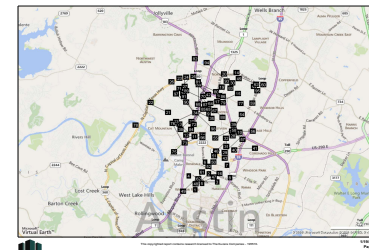
DMS



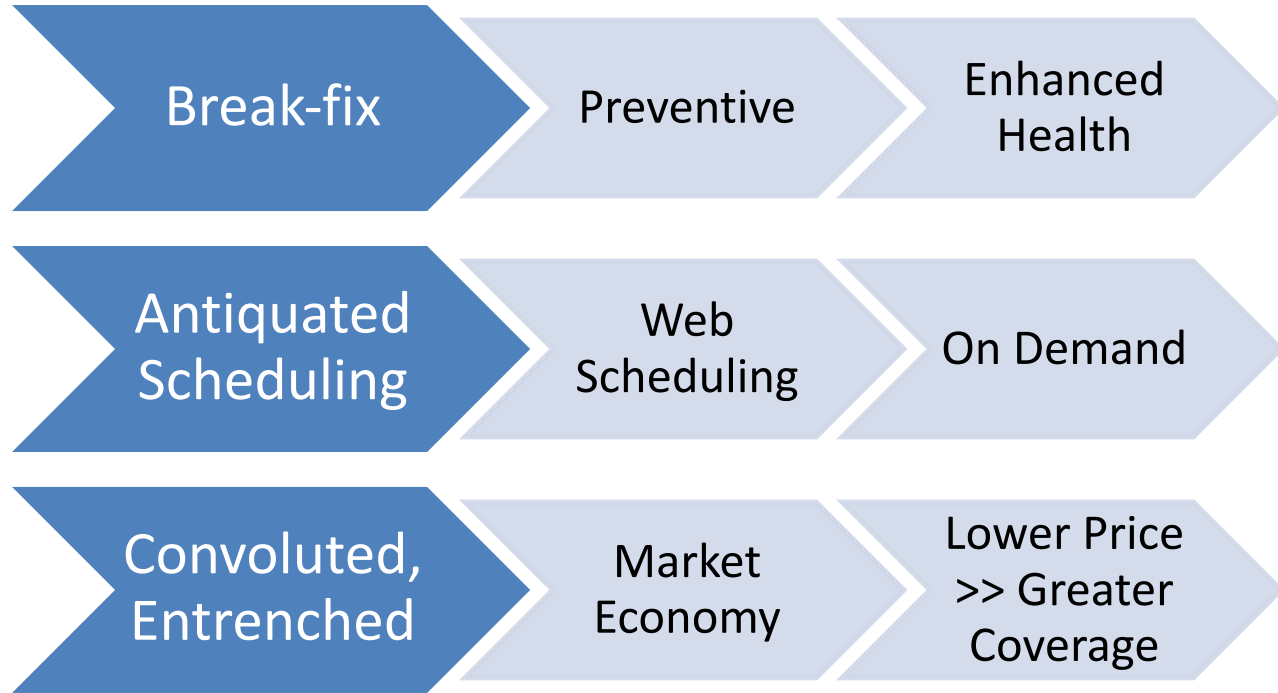
CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS



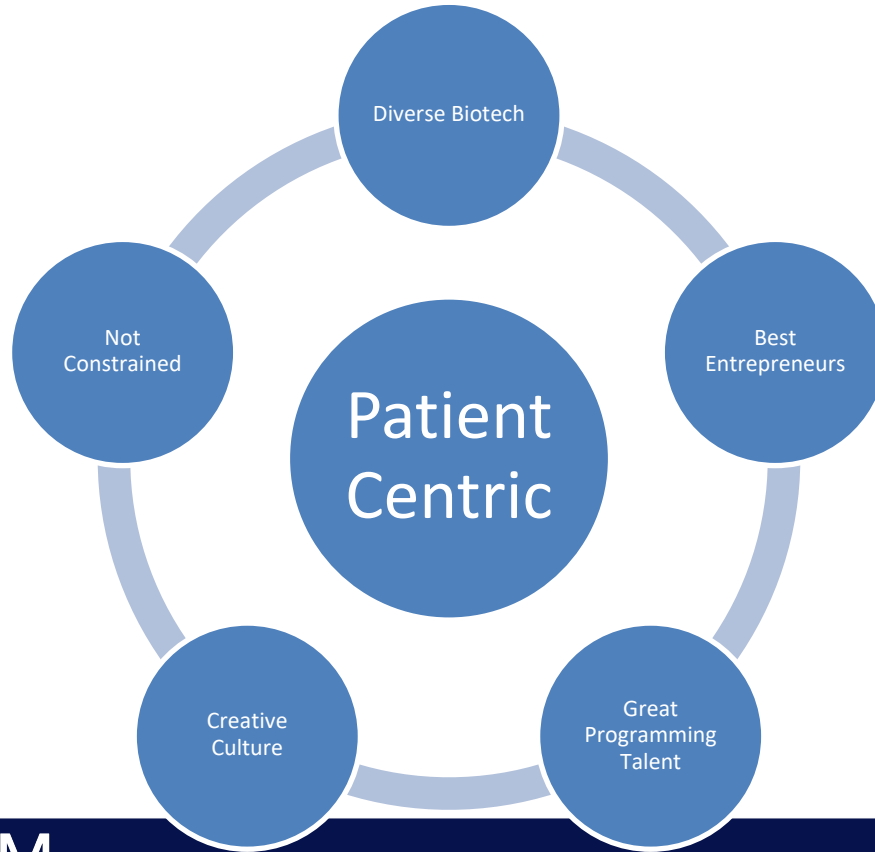
TEXAS STATE



What If?

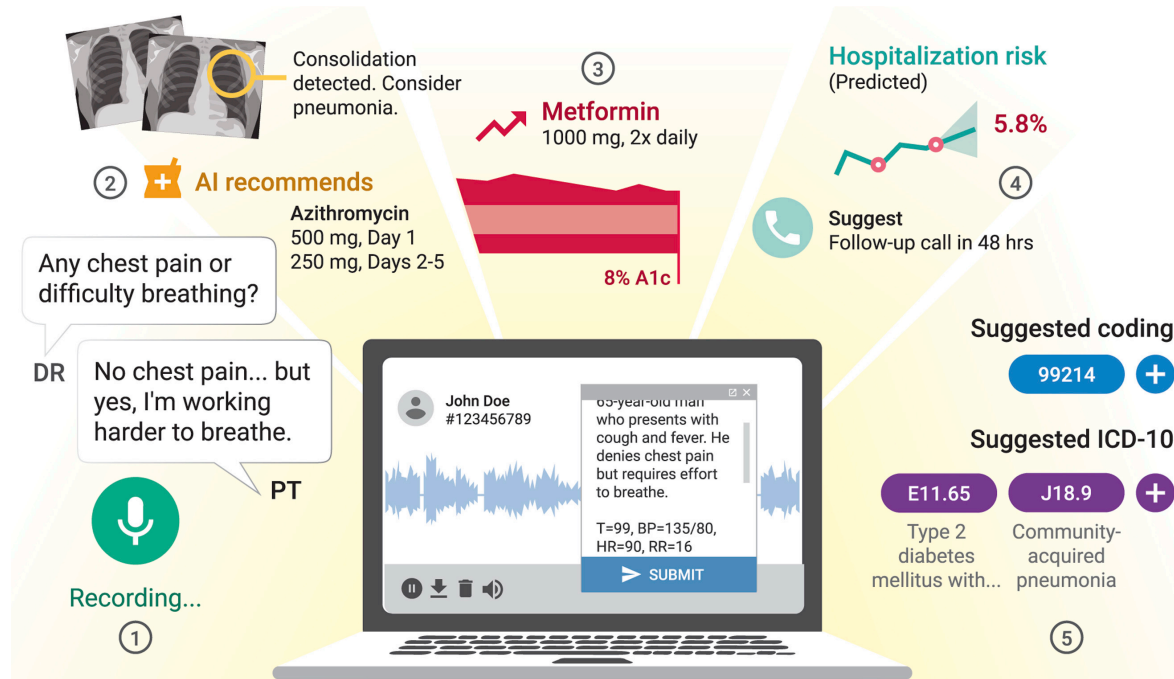


Solution



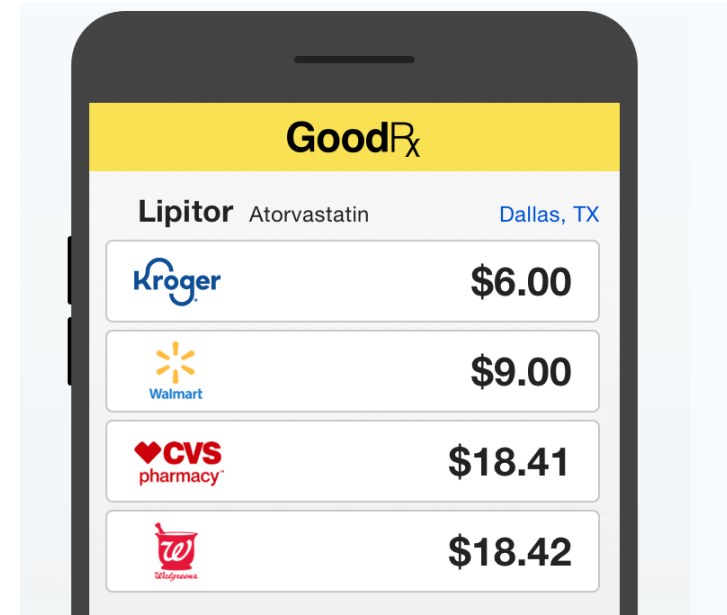
Some of Nishi's favorite health tech innovations/products

AI (yes, finally we are talking about it!) that automates tasks that are time consuming and labor intensive freeing up healthcare workers for other tasks



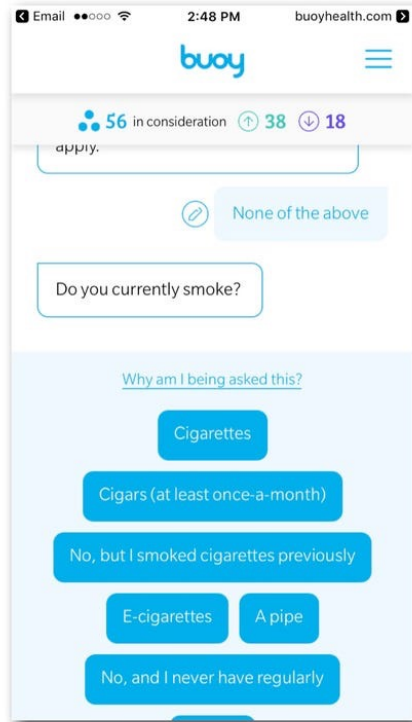
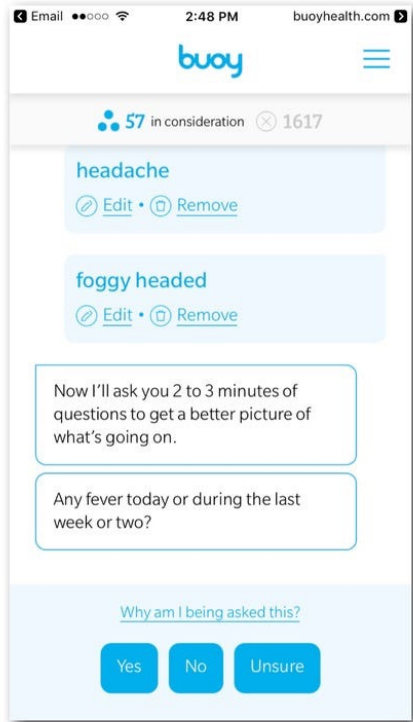
Source: <https://www.mayoclinicproceedings.org/article/S0025-6196%2818%2930142-3/fulltext>

Technology and business models that leverage current ecosystems to enable comparison shopping & lower prices



Source: <https://www.mayoclinicproceedings.org/article/S0025-6196%2818%2930142-3/fulltext>

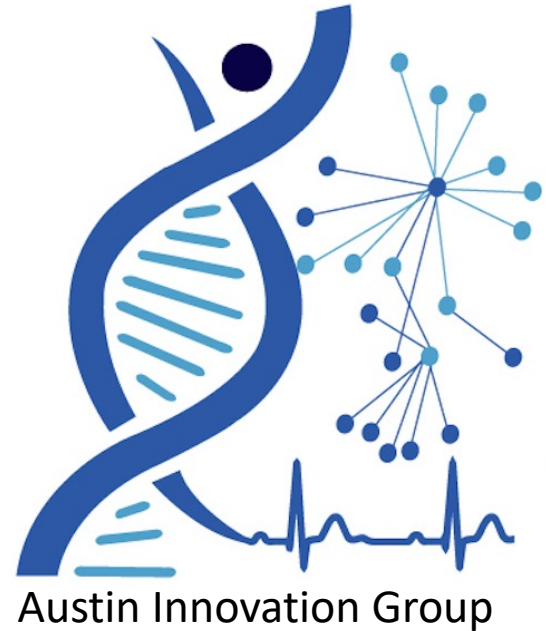
Digital front door for health



Scott's suggestions for highly impactful Biotech,
Health Tech, Medtech, and Life Science
Companies or Innovation

Ideal Innovation Checklist

- Accessible
- Trackable
- Communications
- Effective
- Known cost
- Trust
- Easy to find
- Compatible
- Competition





Q&A for

How Biotech, Health Tech, and Med Tech Are Advancing Healthcare



Dr. Nishi Viswanathan, MBBS, MA, MBA
Director, Texas Health Catalyst
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College of Pharmacy & College of
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Board of Directors, President
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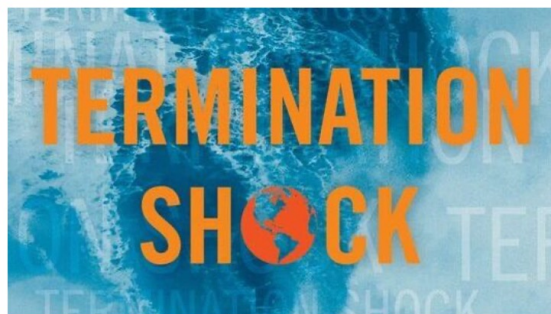
Q: What is the best thing you learned tonight?

(30 seconds)

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

21 22 23 24 25 26 27 28 29 



Discussion of "Termination Shock"

August 18, 2022 | 7:15-8:30 p.m. CDT | Event Type: Online, Discussion

REGISTER

ASK THE MODERATOR

Event Type: Online, Discussion

Location

Online via Zoom

Moderator

Julie Tomlin

VP Finance & HR

[CVEX](#)

The Austin Forum's July discussion event will bring us back to the discussion of a science fiction book with very real-world implications: Neal Stephenson's new climate thriller, "Termination Shock." Join us at Austin Forum advisory board member, and elite sci-fi geek, Julie Tomlin returns to moderate a thoughtful discussion of the implications of a book about how climate action could pit individuals versus governments, as well as governments versus each other. (This discussion will not weigh in on real-world political matters, only on climate change science, and science-fiction, and the implications for technology companies and policies.)

Registration and Attendance Instructions

All participants must register for this event via Eventbrite.

Online via Zoom

Once you register for a virtual ticket via Eventbrite, you will receive an email from both Zoom and Eventbrite. Both emails will include the direct Zoom Meeting link. You will also receive the Zoom Meeting link in an email from Eventbrite two days, two hours, and five minutes before the event start time.

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Join Us for More Great Content in 2022+

- **Schedule is posted at www.austinforum.org**
- Topics will include
 - Tech startups
 - Misinformation and disinformation
 - Clean energy and EVs
 - Money/finance
 - Robotics, autonomous vehicles/drones,
 - and more!



Plus:

- Online conversations
- New podcast episodes
- Rebooted blog
- and more!

Our Annual Partners Make This Possible!



Help Everyone Get Connected!:

Donate Your Devices to **Austin Pathways**!



Our residents need these devices to learn, work and be well remotely!

Therefore, we can pick them up **SAFELY** from you, safely refurbish and deliver to residents

All you need to do is call **512-767-7832** or email **info@austinpathways.org**



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Join us to learn, share, discuss!!



*Please share the upcoming events with your friends
and colleagues!*

Networking is back! Join us at:



KEEP YOUR NAMETAGS FOR FREE DRINKS!

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