

Atulisms

CANONIC BOOK SERIES

Dexter Hadley, Marina Sirota, Tarangini Deshpande, Atul Butte

CANONIC Foundation

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Atulisms

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0.1. Abstract

Atul Butte was a computational biologist, data scientist, and physician who changed how genomics interfaces with clinical medicine. He died on June 13, 2025. This book is not a biography. It is a compilation — every talk, every lecture, every keynote he gave on camera, distilled into prose. Commissioned by his wife, Tarangini Deshpande, and edited under CANONIC governance so that every quote traces to its source. His words speak for themselves.

0.2. Foreword

“Friends who’ve known me for decades were stunned when I told them that just 5 seconds after meeting him, I knew I was going to marry this man.”

“He proposed to me by taking one of my manuscripts, editing it in PostScript, and changing a part to say ‘Will you marry me?’ He came over and said, ‘Look, they got this wrong in your paper.’ I got all ready to be outraged.”

“After his diagnosis, we started a new ritual. We would clink our mugs and say, ‘Cheers, another morning.’ Even from the hospital, he insisted on continuing this ritual, determined to savor every moment we had together.”

“Atul’s name carries deep meaning. It means incomparable, one of a kind, unique. And in every aspect of his life, Atul truly lived up to that name.”

“So, Atul, wherever you are today, cheers. Here’s to another morning.”

This book is not a biography. It is a distillation. Every word Atul ever said on camera — compiled, indexed, and published. I called Dexter in December 2025 and asked him to preserve the words. Not a memoir. Not an interpretation. The man’s own voice, in his own cadence, organized so that anyone who heard him speak even once can hear him again.

Gini knew the man. Marina learned the science. Together they frame everything in between.

— **Tarangini (Gini) Deshpande, PhD** | Atul’s wife | NuMedii CEO | Commissioner of this book | Celebration of Life, June 21, 2025

0.3. Preface

I met Atul when I was interviewing for the BMI PhD program. He was giving a job talk at the retreat in Asilomar. I was blown away by his charisma, by his excitement. Before that, I was doing research in

comparative genomics — which is very cool — but I was truly amazed that we could use the same skills, informatics, to help patients with disease. That was the whole field of translational bioinformatics that he was pitching at the time.

At the beginning of the school year — September 2006 — I wrote him an email asking for a rotation in his lab. I liked it so much I did two quarters of rotations. About a year later, I asked to join his group.

Nearly everything I know about doing science I learned from Atul. He taught me how to ask questions, how to think big, how to mentor and bring collaborative teams together. He taught me the importance of communication and telling a story. He really elevated people around him, making them feel good about themselves and the work that they do, which in turn inspired them to grow. He was incredibly loyal and dedicated to his work and his family, and his energy was contagious.

After my PhD I spent a few years at Pfizer, and he was instrumental in bringing me back to academia — first to Stanford for a year, and then I started my lab at UCSF in 2015. We continued the drug repurposing work we started together as student and mentor. From gene expression reversal on microarrays to single-cell Alzheimer's drug discovery published in *Cell*. Nineteen years. From one email asking for a rotation to running the institute he built.

He was an incredible person, a visionary scientist, a mentor. He was a devoted husband, a father, and a very dear friend to many of us. His career was defined by his unwavering belief in the power of data to drive discovery, equity, and better health outcomes for all.

His loss is deeply felt, but his influence endures in the lives he touched, the data he unlocked, and the futures he helped shape.

I'd like to dedicate this talk — and this book — to Dr. Atul Butte.

— **Marina Sirota, PhD** | Professor, UCSF | Director, Bakar Computational Health Sciences Institute | Adapted from the PSB TERI Lecture, January 2026

0.4. Compiler's Note

Gini and Marina are the two women who knew him best. Gini knew the man — five seconds, a PostScript proposal, mugs clinked every morning through the ICU. Marina learned the science — nineteen years, from one email asking for a rotation to directing the institute he built. Their voices open this book because they earned it. They frame everything.

I am honored to have known him for the short time I did. He had an exponential effect on me and my career. The innovation speaks for itself. And this book — literally — speaks for itself. These are his words.

I first met Atul as a resident at Stanford University Hospital when I attended a job talk he was hosting to recruit Dennis Wall. Although the room was full of scholars, it might as well have been only Atul, Dennis, and myself in that room for me that day. While his reputation preceded him, I was struck that he knew who I was — or at least pretended to know. Soon thereafter, I joined his lab, and it changed the trajectory of my life. The day he met me, he asked if I was crazy to be in residency with three children at Stanford. I soon dropped out and joined his lab. He taught me to believe in my unique talents and follow my passion. He

showed me my worth.

I will never likely find another MD/PhD who taught himself to code that looks any more like me. We shared the rarest profile in medicine — physician-scientists who write software. Not methods for methods' sake, but code that ships, code that changes practice, code that moves discoveries to patients. He saw that in me before I saw it in myself. He dwarfed my dreams and changed my perspective for the grander after thirty minutes. What an inspiration to all like me.

Writing grants with Atul was exhilarating. Winning them was even more.

In October 2013, he assigned me to lead the R01 for the Butte Lab with Carlos Bustamante and Mike Snyder — interpreting variation in human non-coding genomic regions. “\$500k direct per year for 3 years. We have to go in for this.” He reviewed my sections while babysitting two kids at the Exploratorium: “I read through the whole thing again and edited. I think it’s great!” In 2014, he pointed JDRF at our work: “Thanks guys... this might end up being something like free money for us... JDRF really wants to work with us.” Aim 1: “using Dexter’s approach.” In June 2015, he emailed the whole lab: “Congratulations to Dexter! Your first grant of MANY... :-)”

Then the iMessages started.

Feb 16, 2016. Atul: “Dude! What did the program officer say???? Did you really get the grant??” Me: “Yes! It’s great that it’s BD2K. Badge of crowdsourcing Big Data honor.”

Feb 24, 2016. Me: “Check ur email!” “Marcus grant.” Atul: “Wow wow wow! Holy SHIT!! Congrats!!!”

Apr 5, 2016. Me: “Does everyone get one of these?” Atul: “Hell no! I’ve never seen that before! That’s awesome!”

Jun 23, 2017. Me: “BOOM!” (CrADLe U01 funded) Atul: “Super happy for you! Well done!”

For many of us who had the privilege of being mentored by Atul, he carved out time for monthly 1:1 meetings which were amongst the most exhilarating professional experiences ever for me. Not that I’ve ever done cocaine, but I’d imagine it’s like how I felt after meeting with him. If I ever thought my dreams were big, he easily dwarfed them and changed my perspective for the grander after only thirty minutes.

In May 2019, when UCF was recruiting me, Atul told them: “If they don’t successfully recruit you now, it is highly unlikely they will EVER be able to recruit someone else like you.” That’s who he was. He elevated you and then told the world.

The last time we spoke was Christmas 2024.

Oct 15, 2024. Me: “Hi Atul. Let’s please reconnect when you have a chance. Just heard from Jane Gibson about AMP. Then I talked to Marina who told me you were sick. I’m so sorry and praying for you and your family.”

Nov 28, 2024. Atul: “Happy Thanksgiving Dexter! Wishing you and your family all the very best this season and next year! And yes would love to reconnect soon!”

Dec 25, 2024. Atul: “Merry Christmas!”

Six months later, he was gone.

Atul was not just a pioneer in his field; he defined it. From his early days blending computer science with clinical curiosity, to leading UC Health's innovation efforts, he lived at the bleeding edge of precision medicine. His work in mining public data, developing translational algorithms, and applying machine learning to real-world clinical problems remains foundational. Where others saw noise, Atul saw patterns — insights that saved lives, informed policy, and democratized discovery. He had that rare gift of being both a towering intellect and a deeply human presence. He laughed easily, listened deeply, and cared fully.

He taught me the secret to happiness is to NOT practice. Instead, I built the thing. The governed reuse of real-world data that Atul championed his entire career. And now I present it at the competition named for him. Trained under Atul. Now presenting for Atul. The circle closes.

Though he is no longer with us, Atul's spirit endures in every dataset we question more deeply, every model we train more responsibly, and every mentee we take time to support. He lives on in the infrastructure he built, the leaders he cultivated, and the conversations he started. Let us honor him not just in remembrance, but in emulation. It is both a privilege and honor to be considered part of Atul's Clan. May his memory be a blessing, and his legacy our charge.

This book means he will always be in my lab — the brightest star in the galaxy I am now building. His words. His cadence. His conviction that data is frozen knowledge and you and I can bring the heat. Forty-eight transcripts. 239,612 words. Every phrase he polished over two decades of talks, distilled and indexed so that any of us can sit with Atul one more time.

The chapters that follow are built from forty-eight YouTube transcripts, two memorial recordings, the Atul Butte Mafia WhatsApp group (sixty-six members), LinkedIn tributes, and UCSF obituaries. 958 pages. Every word was said by Atul Butte, about Atul Butte, or in the immediate orbit of his memory. The quotes are sourced. The man's words speak for themselves — they always did.

— **Dexter Hadley, MD/PhD** | Compiler | San Francisco, February 2026

0.5. The Ledger

THE DEXTER-ATUL LEDGER

607 emails	Jan 25, 2013 – Jul 26, 2020
88 iMessages	Sep 25, 2015 – Dec 25, 2024
66-member Mafia	Jun 14, 2025 – present
1 LinkedIn memorial	381 reactions 23,527 impressions
695 direct messages	12 years

FIRST: Jan 25, 2013 – Autism Working Group talk, Stanford

LAST: Dec 25, 2024 – "Merry Christmas!"

THE GRANT YEARS:

R01 Bustamante + Snyder	Oct 2013
JDRF – "free money"	Oct 2014
K01 Big Data	2014–2016
BD2K – "Dude!"	Feb 2016
Marcus – "Holy SHIT!!"	Feb 2016
CrADLe U01 – "BOOM!"	Jun 2017

THE MOVE:

"I anticipate a great future for you
at UCSF" – Mar 2015

THE FAREWELL:

"Merry Christmas!" – Dec 2024
Six months later, he was gone.

...

Chapter 1

I. THE SIGNATURE LINES

These are the phrases Atul repeated across dozens of talks — his rhetorical DNA.

...

1.1. “Data is frozen knowledge”

“Data is power. Data is Revolution. Data is frozen knowledge — and you and I can bring the heat, the light, the energy to melt that data and let the knowledge free.”

— TEDMED 2012. The most quoted line he ever spoke.

...

1.2. “A trillion points of data”

“Precisely practicing medicine with a trillion points of data.”

— Title of his TEDx, LSI, and UCSF talks. The phrase that became his brand.

...

1.3. “If you want to change the world, you can’t just keep writing papers about it”

— Said in virtually every talk from 2015 onward. His justification for starting companies.

...

1.4. “It will be a national tragedy”

“We are spending hundreds of billions of dollars in the United States to collect this data. It will be a national tragedy if we don’t use this data to improve the practice of medicine. Period.”

— Samsung Catalyst, LSI, NextMed, Danaher, CHIP. His standard opening or closing.

...

1.5. “Everything is connected”

“He saw that if you accept any threshold correlation, everything ends up being correlated with everything else. And this led to his phrase, ‘everything is connected,’ and he believed it very, very deeply, and he meant it interpersonally as well.”

— Zach Kohane, Celebration of Life

...

1.6. “One word: hope”

“What do I mean by big data in biomedicine? It’s about predicting diseases before they strike, explaining rare diseases that defy experts, finding drugs for diseases that lack attention, making sure we do the right, safe, cost-effective thing for patients. I sum all that up with one word: hope.”

— Singularity University, Michigan Omenn Lecture

...

Chapter 2

II. ON DATA

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2.1. Data Is Not Oil — Data Is Soil

“Data is the new oil, they say. I hate that saying. Because oil — if I take that barrel of oil, you can’t have it. But data — I can have a copy and you can have a copy and I might do magical things with it and you might do differently magical things with it.”

“The saying I like better is: data is the next soil — not oil, soil. You plant ideas and data helps them grow.”

— CHIP, Danaher

...

2.2. The Most Expensive Data in America

“I call this data the most expensive data in America now because we pay for doctors to type this stuff in. It’ll be a tragedy if we don’t use it.”

“On average, the average data in these systems is never used again.”

— LSI, Danaher

...

2.3. The Question Is the Hard Part

“99% of the work for me and the people who think like me now is figuring out what’s the question you want to ask. What’s that killer question that everyone’s wanted to know the answer to and no one realizes we already have the data to ask and answer that question? That’s the hard part. It’s not writing the code. It’s not cloud computing.”

— Singularity, NextMed, Michigan Omenn

...

2.4. Data By Itself Doesn’t Do Anything

“We’re surrounded by data in medicine but data doesn’t do anything by itself. It’s stuck. It’s frozen in these ponds and puddles.”

“Go splashing in those puddles.”

— TEDxSanFrancisco

...

2.5. Big Data Comes from Small Packages

“Big data comes from small packages just like this.”

— Said in every talk while holding up a gene chip

...

Chapter 3

III. ON OPEN SCIENCE

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3.1. Retroactive Crowdsourcing

“When I think of public big data, the term I like to think of is retroactive crowdsourcing. 2,400 labs are there to help you. And those labs don’t even know they’re helping you.”

— Singularity, NextMed

...

3.2. If a High School Kid Can Do It

“A high school kid today that needs to do a science fair project — she can go to this website, type in breast cancer, and now download more than 30,000 digital samples of breast cancer, maybe as easily as she could find a song on iTunes. This kid now has more samples available online than any breast cancer researcher will ever have in his or her lab.”

— TEDMED 2012

“If a high school kid can do this, we all can do this. We all should be doing this in every one of our organizations that has anything to do with biomedicine.”

— Singularity, Michigan Omenn

...

3.3. The Ridiculous NIH Grant

“Let’s pretend I’m writing a brand-new NIH grant. I propose that I can get 3,700 of the best breast cancer labs in the world to share data with me for free. You’re already laughing. If I actually wrote that in an NIH grant, you would laugh me out. Yet here it is. Sitting there. Waiting for you.”

— Michigan Omenn

...

3.4. I’m Giving Away the Secrets

“I’m giving you my secrets because there’s so much unmet need out there. We cannot do them all myself.”

— LSI, NextMed

...

3.5. The Priesthood

“A kid who builds a website or writes an iPhone app is doing something that the previous generation needed a priesthood for — a set of elites that knew how to do this.”

— TEDMED 2012

...

3.6. The Taxpayer Chain

“The check you write funds the science. The science funds the discovery. The discovery becomes a company. The company gets the jobs. The jobs fund the revolution.”

— TEDMED 2012

...

Chapter 4

IV. ON DRUG REPURPOSING

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4.1. Match.com for Drugs

“The reporters called this ‘match.com for drugs.’ What’s the famous saying? Opposites attract. I got a disease where this gene goes up and this gene goes down, and I can find a drug that can make this one go down and this one go up — baby, there’s a match there! That’s with two genes. Imagine 20,000 genes.”

— Singularity, NextMed, Michigan Omenn

...

4.2. The Molecules Don’t Care

“Not even all the cancers look like each other. Now why did we ever even think the cancers would look like each other — just because the same kind of doctor takes care of them? The molecules don’t really care what kind of doctor takes care of the disease.”

— TEDMED 2012

...

4.3. Instead of Finding Them by Accident

“Instead of finding these by accident, how about we find them on purpose using public data?”

— Singularity, NextMed, Michigan Omenn

...

4.4. The Italian Man’s Email

“Hello, my name is... I’m an Italian man, 48 years old, three children — a girl, a boy, and a 17-year-old, all with the same wife. On June 5th, they told me I have small cell lung cancer. I know I will not live longer than a few months. My family is desperate. Please, I’d like to try this new cure.”

“This is why we’re in this business. It’s an email like this every week or two. We cannot keep saying it’s going to cost a billion dollars for each one of these drugs, it’s going to take 10 years. That is not what patients want to hear.”

— Singularity, NextMed

...

4.5. Neither Side Effect Sounds as Bad as Lung Cancer

“Imipramine — it’s an antidepressant... makes you really sleepy and in others it widens your QT interval. Actually, neither of those two side effects sound as bad as having lung cancer — 5% survival rate — and the cancer is melted away, it’s gone in this mouse.”

— Singularity, Champalimaud

...

4.6. From Public Data to Acquisition

“We went from public data to acquisition in 24 months. Inventors happy. Investors happy.”

— NextMed, Michigan Omenn

...

4.7. Turn the Crank

“We turn our crank. We got lots of ideas. Here’s a drug. There’s a drug. And where we got a lot of interesting ideas isn’t the new drug, but the new use for the old drug.”

— NextMed (said in every talk)

...

4.8. The Legacy Realized (After)

“I just successfully treated a pediatric patient with an ultrarare genetic disorder by repurposing an FDA approved drug. This specific idea I came up with while in Atul’s lab.”

— Atul Butte Mafia WhatsApp (120363402783687844@g.us), December 9, 2025. In response to Gini’s call to “create a project in Atul’s memory.” *Source: WhatsApp ChatStorage.sqlite, compiled SOP-009.*

...

4.9. Inflammatrix: Drug Repurposing from Public Data

“Just wish Atul was around to see this.”

— Atul Butte Mafia WhatsApp (120363402783687844@g.us), September 30, 2025. On Inflammatrix receiving FDA clearance for a sepsis diagnostic — “drug repurposing from public data.” Atul’s core thesis, realized as a commercial product. *Source: WhatsApp ChatStorage.sqlite, compiled SOP-009.*

...

4.10. The Cell Paper (After)

“This was truly a team effort.”

— Marina Sirota, PhD, Acting Director, Bakar Computational Health Sciences Institute, UCSF. July 22, 2025. Published in *Cell* — Alzheimer’s drug repurposing using the methodology Atul championed. Shared in Atul Butte Mafia WhatsApp. *Source: WhatsApp ChatStorage.sqlite + Cell publication, July 2025.*

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Chapter 5

V. ON GARAGE BIOTECH

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5.1. The Next Amgen Starts in a Garage

“I fundamentally believe the next Amgen, the next Genentech, is going to come from your garage. Because when you go home from this meeting, you got more than a million of those samples and every mouse model you want available by credit card. What else do you need to launch a biotech company today?”

“I don’t mean making meth in your garage — no, no — but I do mean making the next cancer drug, diabetes drug. All the tools are there waiting for you.”

— Singularity, Champalimaud, Michigan Omenn

...

5.2. Add to Shopping Cart

“\$10,000 gets you your predicted drug tested on these mice — and then once you’re ready, amazingly, add to shopping cart.”

“I can buy an entire mouse model off the internet with a credit card today. What an amazing time this is.”

— TEDMED, Singularity, Michigan Omenn

...

5.3. The Rat Colonoscopy

“Not enough people are laughing, so let me illustrate the geometry involved. This is a colonoscope. This is a rat.”

“Nobody on my campus knew how to do a rat colonoscopy. So I’m not just outsourcing to save money. I’m outsourcing to get the best damn data in the world.”

— Singularity, Michigan Omenn (his biggest laugh line)

...

5.4. Wisdom of the Crowd

“I don’t trust any one of these experiments, but I trust what they show me in common. Wisdom of the crowd.”

— Singularity, Michigan Omenn

...

5.5. Companies Are Not the Dark Side

“It is not taboo to talk about companies in academia anymore. It better not be, because this is how we have to get these discoveries to patients. We have no other choice.”

— Singularity, CHIP

...

5.6. Slide of Significance

“A lot of physicians use these kinds of slides as a slide of shame. For me, this is a slide of significance.”

— Every talk (on his conflict-of-interest disclosure)

...

Chapter 6

VI. ON MEDICINE

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6.1. Imprecise Medicine

“When we enter an era called precision medicine, it means by definition the last thing we were doing was not precision medicine.”

— Champalimaud

“How do we code lung cancer in ICD-9? Left lung or right lung. This is imprecise medicine.”

— Champalimaud, Singularity

...

6.2. Those Silly Fools

“The same way you’re laughing at this, they’re going to be laughing at us. Not even 100 years from now. 10 years from now: ‘Those silly fools didn’t know that this bowel disease and this joint disease were the same thing.’”

— TEDMED, Champalimaud, Singularity

...

6.3. Visitation from God

“If a patient dies because of a visitation from God, use code 189.”

— Every talk (from the ICD-2 manual, 1909)

...

6.4. Not Otherwise Specified

“You learn a lot about medicine by looking at what we put in this bucket called ‘not otherwise specified.’ It’s all the embarrassing stuff we don’t know what to do about.”

— NextMed, Champalimaud

...

6.5. Medicine as a Game

“Medicine is practiced synchronously — we write orders, we wait to see what happens, we write more orders. The same way games like chess, checkers, and Go are played. And boy, computers are really great at that.”

— LSI

...

6.6. The Triple Question

“Where is this patient going to be in 90 days? What’s going to happen in the next year? And what are we going to do about it?”

— TEDxSanFrancisco, TEDxHarkerSchool (his operational definition of precision medicine)

...

6.7. Diabetes Donuts

“We used to call these ‘diabetes donuts’ and then we realized that would be inappropriate for diabetes. So now we call them life savers.”

“And pie would also be inappropriate for diabetes.”

— TEDxHarkerSchool, Michigan Omenn

...

6.8. 1,500 Ways to Treat Diabetes

“We have 1,500 different ways to start a patient on type 2 diabetes meds. Probably too many. Can we get it down to a thousand? Maybe a hundred? Maybe ten?”

— LSI

...

6.9. Doctors With Computers

“It’s not going to be doctors versus computers. It’s going to be doctors with computers versus doctors without computers — who refuse to use computers. That’s the real dichotomy.”

— Samsung Catalyst

...

6.10. Study Every Damn Thing We Do

“It’s not just my responsibility, it should be my duty to study every damn thing we do in our health system, make sure every one of my patients benefits from it.”

— LSI

...

Chapter 7

VII. ON AI AND SCALABLE PRIVILEGE

...

7.1. AI as Scalable Privilege

“He was in a privileged position. He could call any famous cancer institute and get information on his disease. But most people couldn’t open those kind of doors. And he believed that AI and informatics was going to open those doors to everyone around the world, not just in the US, but literally around the world.”

– Sam Hogood, Celebration of Life

“It’s clunky, it takes privilege to know how to install the OpenAI app. I agree it’s privileged. But this is a green field today — patient-facing decision support.”

– Danaher

...

7.2. \$2.99 to Explain My Echo

“\$2.99 to help me explain my echo. \$9.99 to explain my cancer genome. Can we really get to that? I think we can.”

— Danaher

...

7.3. 17 Doctors Couldn't Figure It Out

“This mom — 17 doctors over 3 years could not figure out what their kid had. Just typing the symptoms into GPT — boom, there's a diagnosis.”

— Danaher

...

7.4. No Wizard Behind the Curtain

“AI, machine learning — sounds scary. There is no wizard behind the curtain. You can literally buy Dummies books on all of these. \$17 each.”

— LSI, Danaher

...

7.5. The Future of Computer Science Is Teaching

“A large component of computer science in the future is going to be about being a great teacher. Think about that for a moment.”

— TEDxHarkerSchool

...

Chapter 8

VIII. THE PERSONAL STORIES

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8.1. The Fitbit and 50 Pounds

“I come back from a trip to Hawaii. I step on a scale — I’m 247 pounds. And I realized, when I hit 250, they can measure me in tons. That’s a quarter of a metric ton. What the hell happened to me? Silicon Valley is too easy — I’m driving everywhere.”

“Lost 50 pounds in two and a half years.”

“It’s called the Hawthorne effect — you just measure it, it gets better.”

“It’s Weight Watchers’ rule — you bite it, you write it.”

— TEDxSanFrancisco, Singularity, NextMed

...

8.2. The Billion-Dollar System vs. the \$40 Gadget

“My doctor’s the last person to know I lost all this weight. The most important health intervention ever. Because their billion-dollar system doesn’t talk to my \$40 gadget.”

— TEDxSanFrancisco, Singularity, NextMed

...

8.3. Your Genome Is a Cookbook

“Your genome is essentially a cookbook. Your DNA is a lot bigger than The Joy of Cooking — 6 billion base pairs, 3 billion from your mom, 3 billion from your dad. That’s about 4,000 copies of The Joy of Cooking. Stack them up: two and a half Statues of Liberty.”

— TEDxSF

...

8.4. Don’t Be Afraid of Your Genome

“Don’t be afraid of your genome. These are your recipes. Learn about them.”

— TEDxSF

...

8.5. The Gene for Compliance

“We have yet to find the gene and the genome for compliance with medical care. I kind of think Steve Quake doesn’t have that gene.”

— TEDxSF (on his patient refusing statins)

...

8.6. The Daughter at TEDMED

“When I told my 9-year-old daughter Kimmy that I was giving a TEDMED talk, she was thrilled. And it’s kind of amazing to me that a 9-year-old already knew what a TED Talk was.”

— TEDMED 2012

...

8.7. Maps of Death and Disease

“Think of Google Maps — Google Maps takes you to pleasant destinations. I’m trying to figure out how you’re gonna die. Perhaps the exact opposite of Google Maps.”

— TEDxSanFrancisco, Michigan Omenn

...

8.8. Parking Lot Genomes

“\$33 for your genome. I think some of you are probably going to end up paying more than that for parking today.”

— TEDxSF, Singularity

...

8.9. The Restaurant Bill vs. the Menu

“Does it really help you to look at the bill? Wouldn't you rather see what we ordered? And that's the difference between medical claims and medical records.”

— TEDxSanFrancisco

...

8.10. The Oak Ridge Boys

“Discharge disposition is like that Oak Ridge Boys song — you don't have to go home but you can't stay here.”

— TEDxSanFrancisco

...

8.11. Kittens Playing with Pianos

“Most of these zettabytes of data are these incredible videos of kittens on YouTube. Entertainment value. Perhaps no scientific value. But there is scientific data in the zettabytes as well.”

— Champalimaud, Singularity, Michigan Omenn

...

Chapter 9

IX. ON MENTORSHIP AND CAREER

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9.1. Think Bigger

Chris Longhurst: "I'm going to look at medication errors across the whole children's hospital."
Atul: "Chris, like everybody's done that. You got to think bigger." Chris: "We could probably impact bronchiolitis outcomes." Atul: "No, Chris, you got to think bigger." (They ended up looking at all-cause mortality.)

— Celebration of Life

...

9.2. Credit Is Infinitely Divisible

"He'd have that sign that said, 'Credit is infinitely divisible,' because you can put as many co-authors on the paper who want to lick that cookie."

— Chris Longhurst, Celebration of Life

...

9.3. Licking the Cookie

“He started talking to me about ‘licking the cookie.’ In his world, Atul had tons of cookies and he wanted everyone to lick the cookie. He did it with a joyfulness.”

— David Rubin, Celebration of Life

...

9.4. Junior Faculty as a State of Funding

“Junior faculty should be a state of funding, not a state of mind. Junior faculty should be trying to kick their mentors’ asses.”

— Michigan Omenn

...

9.5. Set Your Peers High

“Set the level of your peers as high as you can. Your peers are all over the world, in countries you’ve never been to. That’s your new level.”

— Michigan Omenn

...

9.6. You Determine Your Future

“You determine your future, not NIH.”

— Michigan Omenn

...

9.7. Solve Real-World Problems

“I’m an h-index junkie. I’m vain. I’ll admit it. Citations are fun games. But they’re just games. Solve real-world problems.”

— Michigan Omenn

...

9.8. Cheer Your Colleagues

“We have to cheer our colleagues more to get more total funding into science, not keep putting each other down.”

— Michigan Omenn

...

9.9. Failure Is a Badge

“That’s great, Chris, because you’ve learned what you want to do and you’ve learned that you can be a startup failure. And that’s a badge of pride in Silicon Valley.”

— Chris Longhurst, Celebration of Life

...

9.10. Every Day Is a Treasure

“I feel like every day that I get to go to work and to talk to people is a treasure. I don’t take any day for granted right now.”

— Collen Award 2024

...

9.11. The Introvert Who Loves Code

“I love my work. I love talking to people, mentoring folks, but still the little introvert in me still loves that I get to write software code.”

— Collen Award 2024

...

9.12. What They Said on LinkedIn (After)

“Nearly everything that I know about doing science I learned from Atul. Warp speed, Atul.”

— Matthew Kan, MD, PhD. Butte Lab postdoc 2016-2017. Assistant Professor of Pediatrics, UCSF. *Source: LSI Cover Story, lifesciencemarketresearch.com, 2025.*

When Kan told Atul about his faculty appointment and newborn son, Atul replied: “...congrats on your new Large Language Model, and so great to see exponential growth in those neurons!!” *Source: ibid.*

...

“He taught me how to ask questions, how to think big, how to mentor and bring collaborative teams together. He was a true innovator and a champion.”

— Marina Sirota, PhD. Acting Director, Bakar Computational Health Sciences Institute, UCSF. *Source: LSI Cover Story, lifesciencemarketresearch.com, 2025.*

...

“He didn’t seek credit; he invited others in.”

— Joe Smith, MD, PhD. Senior VP & Chief Scientific Officer, BD. *Source: LSI Cover Story, lifesciencemarketresearch.com, 2025.*

...

“He had the entire audience spellbound. Not just learning, but laughing, inspired, and moved to act. You didn’t just want to hear him speak — you wanted to be part of his orbit.”

— Lisa Carmel, Chair of Business Development, Mayo Clinic. *Source: LSI Cover Story, lifesciencemarketresearch.com, 2025.*

...

“He was a big fan of Tufte. He sent us to an expensive Tufte workshop.”

— Atul Butte Mafia WhatsApp group (120363402783687844@g.us), September 27, 2025. *Source: WhatsApp ChatStorage.sqlite, compiled SOP-009.*

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Chapter 10

X. THE MAN THEY REMEMBERED

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10.1. The Zebra Unicorn

“In medicine, we teach: when you hear hoofbeats, think horses, not zebras. The thing is zebras exist and Atul knew that. He spent his career working to help the zebras. And then ironically he became a zebra.”

“He wasn’t satisfied just being special. He couldn’t just be a zebra. He needed to be the rarest of zebras. Of course. So he had one of the rarer forms of one of the rarest cancers. He was a zebra unicorn.”

— Peter Embi, Celebration of Life

...

10.2. He Showed Up

“Here’s something about Atul that you can all emulate. And you don’t need his off-the-charts IQ. You don’t need his one-of-a-kind smile. And you don’t need his boundless energy. Atul showed up.”

— Ken Mandl, Celebration of Life

...

10.3. The Man from Turkey

“A gentleman in Turkey: ‘I only met Atul once. It was at a keynote in Morocco. I was so inspired and he followed up a month later with an email to make sure I was working on those ideas.’ He said, ‘Atul completely changed the course of my life, and I only met him that one time.’”

— Chris Longhurst, Celebration of Life

...

10.4. Scalable Privilege (the origin)

“He used his own diagnosis, his own disease, to introduce the term ‘scalable privilege.’ He could call any famous cancer institute and get information. But most people couldn’t open those doors. And he believed AI was going to open those doors to everyone around the world.”

— Sam Hogood, Celebration of Life

“He had an absolute great talent at framing things in ways that were catchy. ‘Scalable privilege.’ Come on. So good.”

— Zach Kohane, Celebration of Life

...

10.5. Never Too Busy

“Despite the incredible demands on his time, Atul was never too busy — and I mean that, never too busy — to mentor a junior colleague, to celebrate a friend’s success, or to share a thought about the absurdities of academic life.”

— Philip Payne, Celebration of Life

...

10.6. The Screen-Scraping Genius

“He created a program that screen-scraped the Cerner lab user interface and wrote in this arcane language, PostScript, a program that generated very tight summaries of patient problem lists. The best thing I’d ever seen, ever. We were all scared that Atul would stop doing it, and sure enough when he left we never had it again.”

— Zach Kohane, Celebration of Life

...

10.7. Fight to the End

“He would be in every meeting — first in person, then on Zoom, then on Zoom off camera, then on Zoom without audio, but in the chat. Right to the very end.”

— Sam Hogood, Celebration of Life

“He was on emails and texts with me about institute matters until only a month or two ago, even from the ICU.”

— Marina Sirota, Celebration of Life

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10.8. Cheers, Another Morning

“After his diagnosis, we started a new ritual. We would clink our mugs and say, ‘Cheers, another morning.’ Even from the hospital, he insisted on continuing this ritual, determined to savor every moment we had together.”

“So, Atul, wherever you are today, cheers. Here’s to another morning.”

— Gini Deshpande, *Celebration of Life*

...

10.9. Five Seconds

“Friends who’ve known me for decades were stunned when I told them that just 5 seconds after meeting him, I knew I was going to marry this man.”

— Gini Deshpande, *Celebration of Life*

...

10.10. The PostScript Proposal

“He proposed to Gini by taking one of her manuscripts, edited it in PostScript, changed a part to say ‘Will you marry me?’ and came over to Gini and said, ‘Look, they got this wrong in your paper.’ And she got all ready to be outraged.”

— Jesse Tenenbaum, *Celebration of Life*

...

10.11. The Spark

“Ideas lit the room. He spoke and silence listened. Fire glowed within his eyes. He filled the air and hearts, left them brighter. Even data danced when he looked at it with joy.”

— Eve Lucier, Celebration of Life

...

10.12. On Problems That Matter

“In a world that often moves too fast, what Atul reminded us was that we should spend our time on problems that matter with people who matter.”

— Philip Payne, Celebration of Life

...

10.13. His Name

“Atul’s name carries deep meaning. It means incomparable, one of a kind, unique. And in every aspect of his life, Atul truly lived up to that name.”

— Gini Deshpande, Celebration of Life

...

10.14. What the Student Said (Mafia)

“Of all my mentors, Atul was easily the nicest. And biggest balls! The day he met me he asked me if I was crazy to be in residency with 3 children at Stanford. I soon dropped out and joined his lab. He taught me the secret to happiness is to NOT practice.”

“Meeting with Atul was among the most exhilarating experiences ever for me. Not that I’ve ever done cocaine, but I’d imagine it’s like how I felt after meeting 1:1 with him.”

“I’d take Atul as a god father.”

— Dexter Hadley. *Source: Atul Butte Mafia WhatsApp (120363402783687844@g.us), June 14-15, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.*

...

10.15. What They Said on LinkedIn (After)

“The passing of Atul Butte still weighs heavy on me. There are some people that are just special. I’m going to miss the insightful conversations. Thanks for being an inspiration Atul.”

— DJ Patil, former U.S. Chief Data Scientist. *Source: LSI Cover Story, lifesciencemarketresearch.com, 2025.*

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“He genuinely loved seeing people succeed.”

“He lived vicariously through me and all the crazy entrepreneurial things that I did.”

— Tarangini (Gini) Deshpande, PhD. Wife. Cancer biologist. Named the “Atul Butte Mafia.” *Source: UCSF obituary, ucsf.edu/news/2025/06/430236, June 2025.*

...

10.16. What They Said Three Months Later (Mafia)

“Three months since Atul, but still feels like just yesterday.”

— Atul Butte Mafia WhatsApp (120363402783687844@g.us), September 13, 2025. *Source: WhatsApp ChatStorage.sqlite, compiled SOP-009.*

“Our friendships are another thing we owe to Atul.”

— Atul Butte Mafia WhatsApp (120363402783687844@g.us), September 1, 2025. After a gathering at Sanchita and Suman’s. *Source: ibid.*

...

“Ideas lit the room. He spoke and silence listened. Fire glowed within his eyes. He filled the air and hearts, left them brighter. Even data danced when he looked at it with joy.”

— Yves Lussier, MD, Chair of Biomedical Informatics, University of Utah. *Source: LSI Cover Story, life-sciencemarketresearch.com, 2025.*

...

10.17. Butte Lab Babies

“Butte lab babies!!!”

— Atul Butte Mafia WhatsApp (120363402783687844@g.us), December 30, 2025. Three babies born that month — Ben Glicksberg’s, Dexter’s, and Matt’s. Dexter replied: “Takes three points to make a curve.” *Source: WhatsApp ChatStorage.sqlite, compiled SOP-009.*

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Chapter 11

XI. THE NUMBERS

48 transcripts processed
50 videos cataloged
18+ hours of Atul on camera
958 pages of text
239,612 words
1,198,061 characters

SIGNATURE PHRASES (frequency across all transcripts):

— "patient"	706 mentions
— "big data"	142
— "clinical trial"	137
— "precision medicine"	88
— "machine learning"	64
— "data science"	47
— "trillion points"	31
— "garage biotech"	12
— "scalable privilege"	8
— "frozen knowledge"	4
— "zebra unicorn"	2

TALKS SPANNING: 2004–2025

ERAS: Stanford → UCSF → Memorial

CAREER: 1969–2025. Age 55. MPNST.

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Chapter 12

XII. THE ARC

Atul Butte (1969–2025)

- |
 - Harvard (1990s) — Screen-scraping Cerner, PostScript proposals
 - Stanford (2004) — "Microarrays for an Integrative Genomics"
 - TEDMED (2012) — "Data is frozen knowledge"
The talk that defined him
 - UCSF (2015) — Bakar Institute
"A trillion points of data"
 - Collen Award (2024) — "Every day is a treasure"
 - Dies (Jun 13, 2025) — MPNST, age 55
Zebra unicorn
 - Celebration of Life (Jun 21) — "Cheers, another morning"
 - ATULISMS (2026) — The words. The man. The memorial.
Commissioned by Gini. Written by Dexter.

...

Commissioned by Tarangini (Gini) Deshpande, PhD. "Hiding within these mounds of data is knowledge that could change the life of a patient or change the world."

Chapter 13

XIII. THE CLAN

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13.1. The Name

“In the early days of NuMedii, someone came up to me and asked if Atul was involved. When I said yes, he stated ‘oh, you must be part of the Atul Butte Mafia’. Atul found it absolutely hilarious.”

— Tarangini (Gini) Deshpande, PhD. *Source: Atul Butte Mafia WhatsApp (120363402783687844@g.us), June 23, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.*

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13.2. Day One

The WhatsApp group was created June 14, 2025 — the day after Atul died.

31 members by nightfall. 66 by the end.

“Celebrating 10 years of the Butte Lab.”

— Joel. Shared a video. *Source: Atul Butte Mafia WhatsApp, June 14, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.*

“Honored to be a member of ‘Atul’s clan’ and thus his legacy.”

— Dexter Hadley. *Source: Atul Butte Mafia WhatsApp, June 14, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.*

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13.3. The Gathering

Marina hosted a gathering at her home. Rong Chen posted a LinkedIn memorial. Bin Chen wrote his — “seven years ago.” Beau Norgeot wrote a three-part tribute.

Source: Atul Butte Mafia WhatsApp, June 15, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009. LinkedIn posts: [linkedin.com/posts/beau-norgeot-phd](https://www.linkedin.com/posts/beau-norgeot-phd) (Parts 1-3).

“He taught me the secret to happiness is to NOT practice.”

— Dexter Hadley, June 15, 2025. *Source: ibid.*

...

13.4. The Funeral and Celebration

Funeral: Friday, June 20, 2025. Skylawn Memorial Park, San Mateo. Celebration of Life: Saturday, June 21, 2025. Livestreamed.

youtu.be/YZgPZcRCtig

Donations directed to: UCSF Foundation, MPNST Research Fund.

Source: Atul Butte Mafia WhatsApp, June 17-21, 2025. WhatsApp ChatStorage.sqlite + Skylawn tribute wall, skylawnmemorialpark.com/obituaries/atul-butte.

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13.5. The Rare Cancer

Gini: “You should involve Gini” — members proposed a rare cancer initiative in Atul’s name.

Sam, Emily, Krishna, Alan — cancer center leadership at UCSF — all named in the discussion.

Source: Atul Butte Mafia WhatsApp, June 15-19, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.

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13.6. The Birthday Memorial

August 26, 2025. Atul’s birthday. Sanchita and Suman co-hosted, with Gini.

“Our friendships are another thing we owe to Atul.”

— September 1, 2025. After the gathering. *Source: Atul Butte Mafia WhatsApp. WhatsApp ChatStorage.sqlite, compiled SOP-009.*

...

13.7. Three Months

“Three months since Atul, but still feels like just yesterday.”

— September 13, 2025. *Source: Atul Butte Mafia WhatsApp. WhatsApp ChatStorage.sqlite, compiled SOP-009.*

...

13.8. The Legacy in Motion

September 30, 2025 — Inflammatrix receives FDA clearance for a sepsis diagnostic. Drug repurposing from public data. The work Atul championed, cleared by the FDA.

“Just wish Atul was around to see this.”

Source: Atul Butte Mafia WhatsApp, September 30, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.

October 15, 2025 — MIT talk dedicated to Atul. October 16, 2025 — MSK and NYU talks dedicated to Atul.

Source: Atul Butte Mafia WhatsApp, October 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.

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13.9. Gini’s Call

“Looking for ideas... create a project in Atul’s memory.”

— Gini Deshpande, December 9, 2025. Precision medicine. N-of-1 initiative.

“I just successfully treated a pediatric patient with an ultrarare genetic disorder by repurposing an FDA approved drug. This specific idea I came up with while in Atul’s lab.”

— A member replied. The thesis made real.

Source: Atul Butte Mafia WhatsApp, December 9, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.

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13.10. Butte Lab Babies

December 30, 2025. Three babies born that month — Ben Glicksberg, Dexter Hadley, and Matt.

“Butte lab babies!!!”

“Takes three points to make a curve.”

— Dexter Hadley.

Source: Atul Butte Mafia WhatsApp, December 30, 2025. WhatsApp ChatStorage.sqlite, compiled SOP-009.

...

13.11. The Roll Call

66 members. 485 messages. Created the day after he died.

Resolved: Ben Glicksberg. Boris Oskotsky. Brenda Miao. Kelly Zalocusky. Andrew. Greg. Harry. Karthik. Dexter Hadley.

Named in messages: Marina Sirota. Gini Deshpande. Beau Norgeot. Rong Chen. Bin Chen. Travis. Joel. Zak. Nova. Kimi. Sam. Emily. Sanchita. Suman. Syzygy (Atul’s child — discovered a galaxy). Rahul. Michael Januszyk. Nadav. Idit. Matt. Peter Embi. Peter Szolovits. Krishna. Alan.

51 unresolved. WhatsApp encryption. They’re in there. We just can’t read their names.

Source: WhatsApp ChatStorage.sqlite, group 120363402783687844@g.us. Compiled SOP-009, 2026-02-06. Full alumni list: buttelab.ucsf.edu/people/.

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13.12. The Competition

PMWC 2026. March 4-6, Santa Clara.

Track: **“Atul Butte Company Competition.”** \$20,000 prize.

The competition is named for him. One of his students is competing.

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Commissioned by Tarangini (Gini) Deshpande, PhD. “In the early days of NuMedii, someone came up to me and asked if Atul was involved.”