

**[KIC SV & AI Nexus & LikeLion: K-AI Trend Talk]
The Bio-Medical Inflection Point - Silicon Valley's View
on AI-Biotech Markets, Moats, and the Founders Korea
Needs Now**

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About Speaker

- *Co-Founder & CTO @ Erudio Bio, Inc., San Jose & Novato, CA, USA* 2023 ~
- *Co-Founder & CEO @ Erudio Bio Korea, Inc., Korea* 2025 ~
- *Co-Founder, Leader, and Chair of Silicon Valley AI Nexus, USA* 2024 ~
- *CGO / Global Managing Partner @ LULUMEDIC, Seoul, Korea* 2025 ~
- *AI-Korean Medicine Integration Initiative Task Force Member @ The Association of Korean Medicine, Seoul, Korea* 2025 ~
- *Advisor to Korean American Semiconductor Professional Alliance (KASPA)* 2026 ~
- *KFAS-Salzburg Global Leadership Fellow @ Salzburg Global Seminar, Austria* 2024 ~
- *Adjunct Professor, EE Department @ Sogang University, Seoul, Korea* 2020 ~
- *Advisory Professor, EECS Department @ DGIST, Korea* 2020 ~
- Global Advisory Board Member @ Innovative Future Brain-Inspired Intelligence System Semiconductor of Sogang University, Korea 2020 ~
- Technology Consultant @ Gerson Lehrman Group (GLG), NY, USA 2022 ~

- Co-Founder & CTO / Head of Global R&D / Chief Applied Scientist / Senior Fellow @ Gauss Labs, Inc., Palo Alto, CA, USA 2020 ~ 2023
- VP / Fellow @ SK hynix 2020 ~ 2021
- Senior Applied Scientist @ Amazon.com, Inc., Vancouver, BC, Canada 2017 ~ 2020
- Principal Engineer @ Software R&D Center, Samsung Electronics 2016 ~ 2017
- Principal Engineer @ Strategic Marketing & Sales, Samsung Electronics 2015 ~ 2016
- Principal Engineer @ DT Team, DRAM Dev, Samsung Electronics 2012 ~ 2015
- Senior Engineer @ CAE Team, Memory Business, Samsung Electronics 2005 ~ 2012
- PhD - Electrical Engineering @ Stanford University, CA, USA 2001 ~ 2004
- Development Engineer @ Voyan, Santa Clara, CA, USA 2000 ~ 2001
- MS - Electrical Engineering @ Stanford University, CA, USA 1998 ~ 1999
- BS - Electrical & Computer Engineering @ Seoul National University 1994 ~ 1998

Highlight of Career Journey

- BS in Electrical Engineering (EE) @ Seoul National University
- MS & PhD in Electronics Engineering (EE) @ Stanford University
 - *Convex Optimization - Theory, Algorithms & Software*
 - Advisor - *Prof. Stephen P. Boyd*
- Principal Engineer @ Samsung Semiconductor, Inc.
 - *AI & Convex Optimization*
 - collaboration with *DRAM/NAND Design/Manufacturing/Test Teams*
- Senior Applied Scientist @ Amazon.com, Inc.
 - *e-Commerce AIs* - anomaly detection, deep RL, and recommender system
 - *Jeff Bezos's project - drove \$200M* in sales via Amazon Mobile Shopping App
- *Co-Founder & CTO / Global R&D Head & Chief Applied Scientist* @ Gauss Labs, Inc.
- *Co-Founder & CTO* @ Erudio Bio, Inc.
- *Co-Founder & CEO* @ Erudio Bio Korea, Inc.

Unpacking AI for K-Scaleup Forum with Silicon Valley AI Nexus

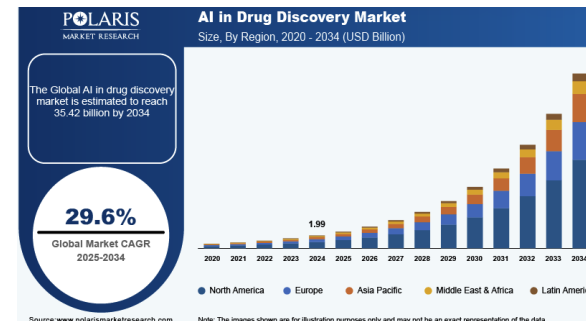
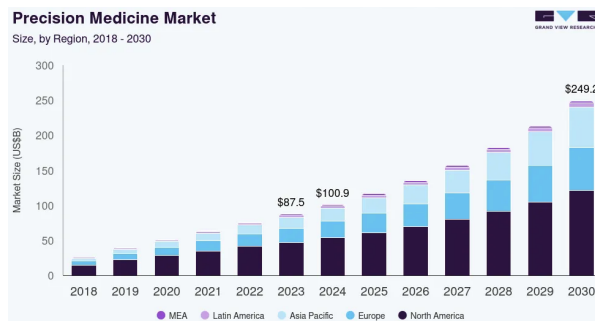
- Bio / Medical - The Trillion Dollar Opportunities - 5
 - The Moment - Why Now & Why it's Big?
 - The Moat - What separates a Winner from Hype?
 - The Maker - Who this Moment Demands?
- Erudio Bio - 17
 - Versatile Smart Assay (VSA) Platform
 - bioTCAD - When Erudio's VSA meets AI - Gates Foundation Grant
 - Product - Drug Development, Clinical Diagnostic, Biodefense
- Silicon Valley AI Nexus - 33
 - Foundation
 - Partnerships, Collaborations & Community
 - San Francisco AI Summit in July, 2026
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The Trillion Dollar Opportunities

The Moment - Why Now & Why it's Big?

The market is real - and enormous

- AI in biotech/pharma market size
 - AI in drug discovery - \$4B (2023) → \$50B+ by 2034 (Global Market Insights)
 - AI diagnostics market - \$1.2B (2023) → \$5-12B by 2030
 - precision/personalized medicine - \$80B (2023) → \$230B by 2030
 - synthetic biology - \$15B (2023) → \$100B by 2032
 - *combined TAM approaching \$1T by mid-2030s* - conservative estimate
- why biotech AI multiples exceed pure software AI
 - software AI competes on marginal cost → commoditizes fast
 - biotech AI - irreversible IP - novel molecules, validated biomarkers, proprietary assay
 - every successful clinical trial is data moat that cannot be reverse-engineered

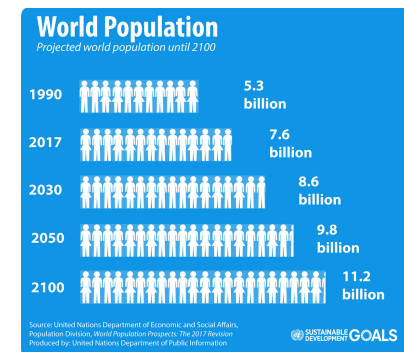


Macro tailwinds amplifying these opportunities

- aging global population - over 2.1 billion people over 60 by 2050 (UN DESA)
 - cancer, neurodegeneration, cardiovascular disease scale accordingly
- post-COVID regulatory acceleration
 - FDA's AI/ML action plan, EMA adaptive pathways
- government prioritization - US CHIPS & Science Act includes biotech
 - Gates Foundation, NIH, BARDA deploying billions in non-dilutive capital
- historical parallel
 - genomics wave (Human Genome Project) unlocked \$1T in economic value
 - *AI-biotech convergence is (at least) one order of magnitude larger*



Gates
Foundation



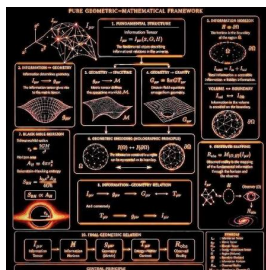
Three exponential curves converging now

- *curve 1 - LLMs & genAI*
 - language models operating natively on biological “languages” - protein sequences (ESM-2, ESMFold), SMILES molecular notation, genomic sequences
 - generative AI can propose novel drug candidates - Insilico Medicine’s INS018_055 went from AI-generated candidate to Phase II in 4 years vs industry avg of 10–15 yrs
 - multi-modal AI integrating imaging, omics, and clinical notes simultaneously
- *curve 2 - biochemical & biological breakthroughs*
 - AlphaFold 3 (2024) - extends beyond proteins to DNA, RNA, small molecules, and their interactions — the full drug-target interface
- *curve 3 - data availability*
 - DNA sequencing cost reduction, INSDC database, electronic health records digitized, wearables & continuous monitoring
- *The rarity of this moment - all three curves peaking simultaneously is historically unprecedented*

The Moat - What separates a Winner from Hype?

Cross-domain inevitabilities - The Technical Moat

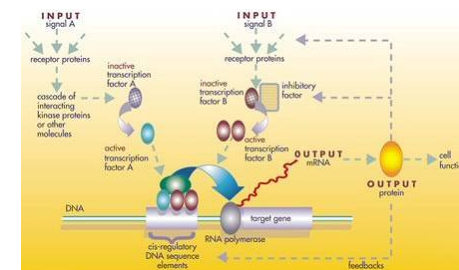
- core insight
 - *fundamental mathematical structures recur across seemingly unrelated domains*
 - recognizing these - strategic advantage - optimization → biological energy landscapes
 - protein folding is fundamentally an energy minimization problem
- information theory → cellular signaling
 - mutual information and channel capacity concepts (Shannon, 1948) map directly onto how cells encode and transmit signals through biochemical cascades
 - cellular gene regulatory networks optimize analogous information-theoretic objectives over transcription factor binding distributions
 - *researchers who understand why transformers work can transfer those architectural intuitions to biological sequence modeling*



Shannon's Theorem

$$C = B \log_2(1 + \text{SNR})$$

Channel Capacity
Channel Bandwidth
Signal to Noise Ratio



What separates Unicorn Potential from incremental progress

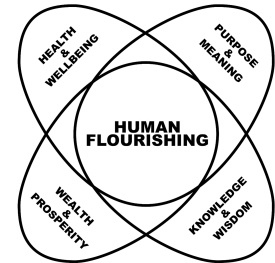
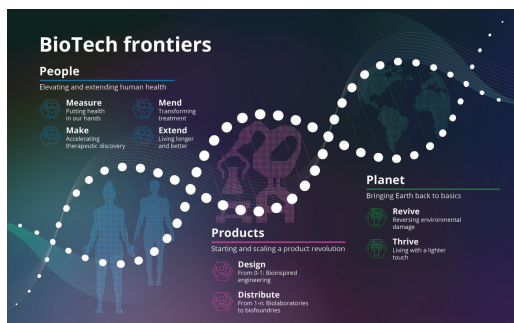
- *dimension 1 - platform vs point solution*
 - point solution - AI model predicting one biomarker for one cancer type - narrow addressable market & low defensibility
 - *platform* - technology applicable across multiple disease areas, multiple biomarker classes, multiple assay modalities — TAM compounds with each new application
 - litmus test - “Can this technology be redirected to new disease areas in a few months without rebuilding from scratch?”
- *dimension 2 - is AI load-bearing or decorative?*
 - “AI-washing” - ML used for marketing positioning, not scientific differentiation
 - *load-bearing AI* - the AI component creates a result impossible or uneconomic to achieve otherwise
 - *e.g.*, Erudio Bio’s dynamic force spectroscopy + AI detecting cancer biomarkers at concentrations below conventional immunoassay thresholds

- *dimension 3 - pathway to clinical and regulatory reality*
 - computational elegance that cannot survive contact with clinical data is worthless
 - regulatory strategy must be designed into product from day one - not retrofitted after technical development
 - FDA's 510(k) vs De Novo vs PMA pathways have entirely different clinical evidence requirements — choice of pathway is a strategic decision made at founding
 - *hospital partnerships not just validation - they are the pipeline for clinically grounded training data!*
- *dimension 4 - proprietary data moat*
 - the most durable competitive advantage in AI-biotech is *the data no one else can access or replicate*
 - *e.g.*, proprietary assay platforms generating novel measurement types, exclusive hospital partnerships, patient cohorts with longitudinal follow-up, rare disease registries
- *dimension 5 - human welfare at the center; not a constraint, but a strategic asset!*
 - mission alignment with patient outcomes unlocks - NIH/Gates/BARDA non-dilutive funding, academic medical center partnerships, favorable regulatory posture, and - increasingly - LP mandates in impact-oriented VC funds

The Maker - Who this Moment Demands?

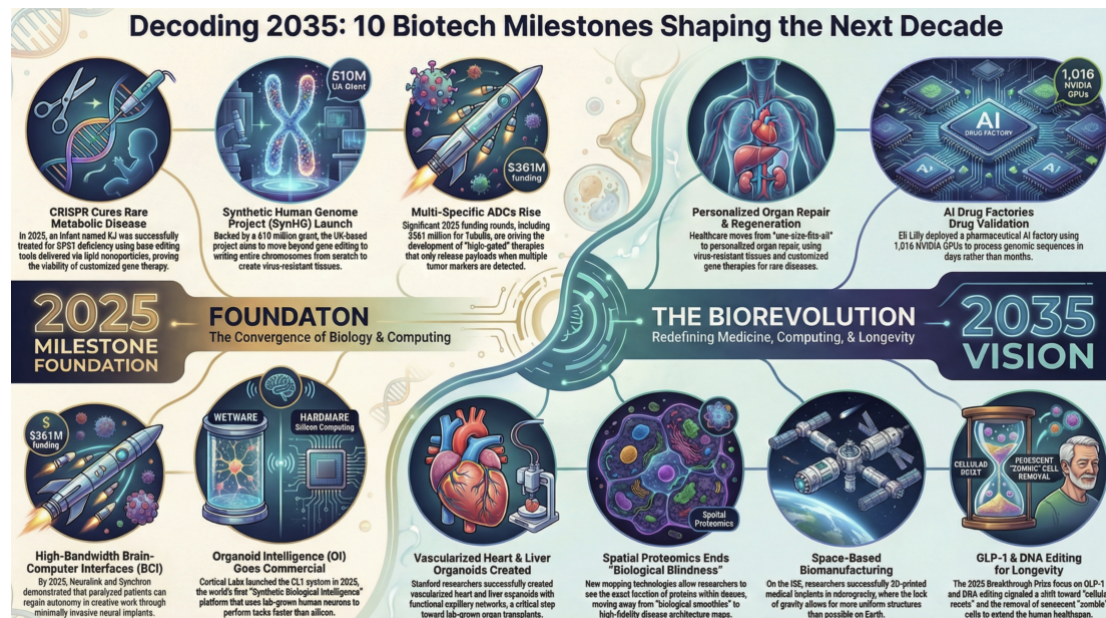
The Rare Entrepreneur This Moment Demands

- three simultaneous operating modes – all required
 - *deep technologist* - must understand inner workings well enough to know what AI can and cannot do & *spot when a competitor's technical claim is hollow*
 - *business strategist* - must navigate regulatory complexity, reimbursement strategy, partnership structuring, and capital allocation under uncertainty simultaneously
 - *advocate for human flourishing* - must hold *patient outcome as the north star* – not as marketing message, but as decision criterion resolving conflicts between speed, cost, and scientific rigor



What the audience in this room should take away

- *the convergence is real, the market is massive, and the technical foundations are now mature enough to build on*
- the scarcest resource is not capital, nor compute, nor biological data – it is *founders holding the full stack - theory, biology, engineering, clinical reality, and human purpose*
- *companies that will define human health in 2035 being founded in the next 24 months!!*



Erudio Bio

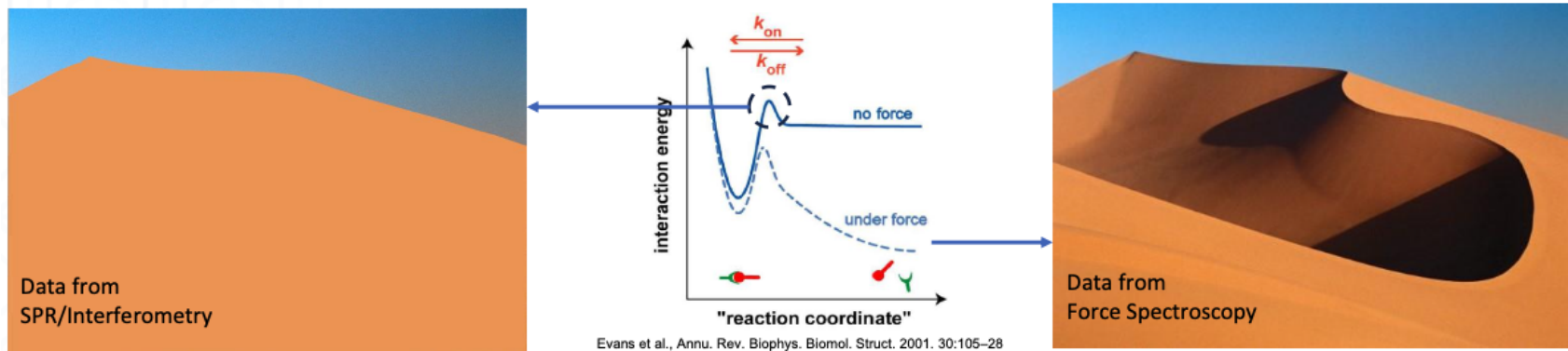
Erudio Bio Summary

- *biology's data layer is the weakest link* - current metrology not up to training AI, doing good drug dev or to do effective Dx
 - *Biosimilars* - no functional equivalency test exists; generics market for biologics never forms; *USG priority by both Parties*
 - *AI Drug & Compound Design* - public data thin, unreliable & absent in newer drug classes, so AI models hallucinate with no AI discovered drug on the market
 - *Clinical Diagnostics* - doctors decide without full data → delayed and misdiagnosis adds to cost



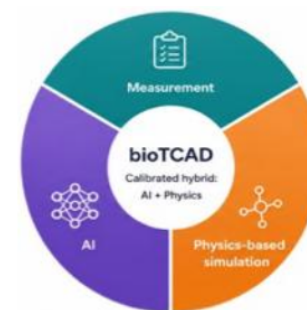
Today's Biological Testing Falls Short – Which Causes AI to Fail

- SPR and BLI compress the limited portion of an interaction into a few fitted constants
- What's needed is a more thorough functional readout
 - one that reaches past the rate-limiting outer barrier that equilibrium methods report, into the secondary and tertiary landscape they leave hidden
 - *dynamic force spectroscopy (DFS) measures there!*



Versatile Smart Assay (VSA) and bioTCAD

- VSA
 - *Stanford spin out tech* with 10 years development / *22 issued patents*
 - array-based architecture lets platform continuously scale & evolve to meet new capability needs!
 - best possible molecular interaction data with force spectroscopy
- bioTCAD
 - built under *Gates Foundation AI drug development funding*
 - *hybrid AI/Physics-based/measurement-anchored discovery engine*
 - AI hallucinates / *physical models* lack accuracy / measurement not generalize
 - *combines all three* & compensate inadequacy of others → *amplifies available data!*



Erudio Bio's Voice on the FDA Docket – Operation TrialBlazer

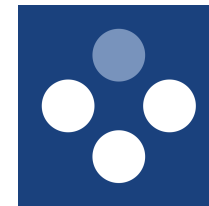
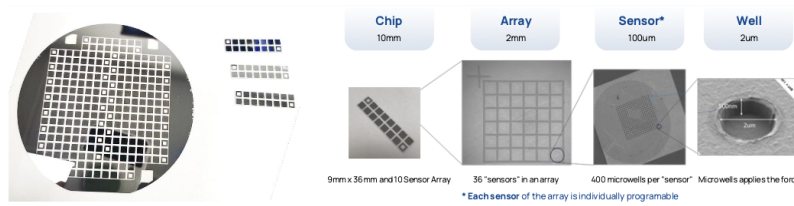
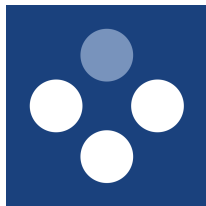
- Jul 2026 – *formal comment filed on FDA's Expedited IND Pilot Program RFI* (Docket FDA-2026-N-4699), under HHS Operation TrialBlazer to keep early clinical trials in US
- thesis – pre-FIH is the highest-leverage stage
 - *get it right, best candidates move faster*; bad ones stopped before reaching patients
- today's AI generates candidates at scale but *cannot separate winners from losers*
 - anchor AI & physics simulation to high-fidelity, high-throughput measurement
- *semiconductor lesson* – measurement tightly coupled to simulation, each sharpening the other every cycle – is how biology gets its own Moore's Law

The screenshot shows a public submission on the Regulations.gov website. The header includes the site logo and a 'SUPPORT' button. Below the header, there is a 'Back to Document Comments' link and a 'PUBLIC SUBMISSION' label. The main content area displays a comment from Erudio Bio, Inc., dated July 16, 2026. To the right of the comment is a 'Share' button. Below the comment, there is a breadcrumb trail: 'Docket / Document (FDA-2026-N-4699-0001) / Comment'. On the left side, there are two boxes: 'Comment ID' (FDA-2026-N-4699-0011) and 'Tracking Number' (mmm-ctr6-dv6). The comment text itself is visible on the right, starting with 'Erudio Bio appreciates the opportunity to submit our comment in response to Question C.4 of the Food and Drug Administration ("FDA") or the "Agency" Request for Information ("RFI") on the Expedited Investigational New Drug Pilot Program (the "Pilot"). We agree with the Pilot's proposals to accelerate the timeline to first-in-human ("FIH") studies. We commend the Agency for directing this effort at the early, pre-FIH stage of development, which we believe is where the largest impact—on speed, safety, and the odds of success—will be realized.'

Erudio Technology

Powering AI-driven medicine with ground-truth binding data

- problems we solve
 - 90% of drugs fail in clinical trials due to poor early-stage prediction
 - multiplexed diagnostics suffer from false positives and cross-reactivity
- *Erudio Bio's Innovation*
 - *VSA* platform uses patented “*dynamic force spectroscopy*” to generate 1000x more high-quality binding data from single sample ($\sim 10\mu\text{L}$)
 - measuring not just presence, but *strength* and *kinetics* of molecular interactions
- *dual business model*
 - diagnostics - *multi-cancer biomarker detection* with clinical institutions & hospitals
 - *drug development* - *bioTCADTM platform* providing ground-truth labels to train & validate pharma AI models, reducing preclinical cycles



Validated technology, proven team, clear path to market

- validated impact
 - *\$1M Gates Foundation Grant* (2025) to democratize drug development for global health
 - partnerships with top research institutions (KRIBB, KAIST)
- unique team - *Stanford-trained founders* combining
 - semiconductor TCAD expertise & force spectroscopy innovation (20+ years)
 - AI & optimization leadership (Samsung, Amazon, SK hynix, Gauss Labs)
- market entry
 - *Korea → (Asia hub &) US* strategy with 2026 regulatory milestones
 - expanding *pharma partnerships and B2G*

Gates Foundation



When Erudio's VSA meets AI - Gates Foundation Grant

Erudio Bio wins \$1M Gates Foundation Grant - scaling bioTCAD

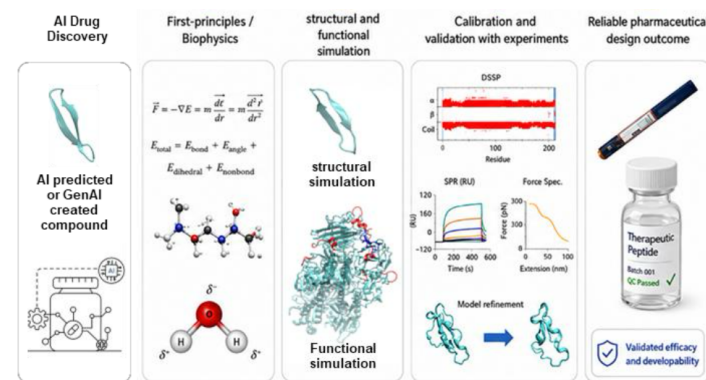
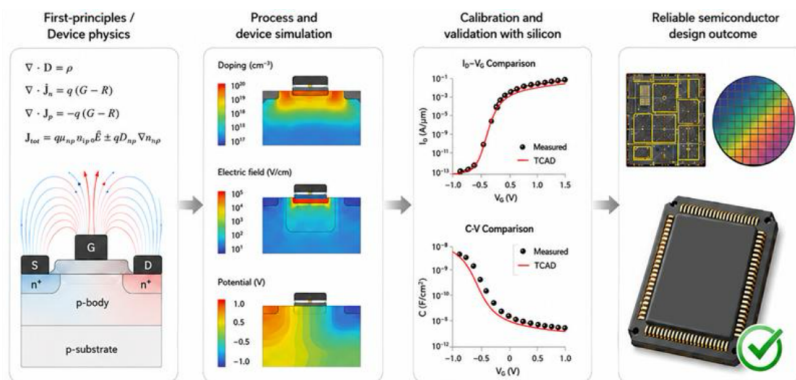
Gates Foundation



- *\$1M Grant Award (2025)*
 - Gates Foundation recognizes Erudio Bio's potential to transform drug development for global health
- mission alignment - democratizing medicine by making preclinical drug design faster, yet reliable & accessible
 - lowering development costs for diseases affecting LMICs
 - addressing the 90% clinical trial failure rate that drives up drug costs
- funded project - develop *bioTCADTM platform for lead optimization of drug development*
 - expand force spectroscopy measurements across high-burden disease targets
 - train AI models with kinetics-resolved binding data (on/off rates, unbinding forces)
 - *enable pharma/biotech to prioritize candidates earlier with higher confidence*

bioTCAD - hybrid AI & physics-based drug development

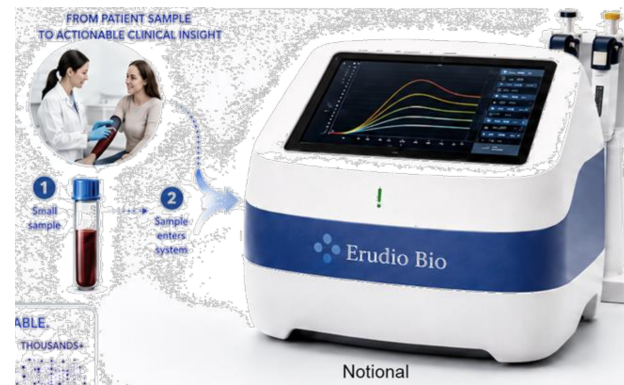
- (old school) AI/ML excels at pattern recognition across large chemical libraries
 - identifying candidate hits at scale – valuable role established and growing
- AI alone *cannot reliably explain binding physics or predict behavior in unexplored and novel chemical space* – *capability and credibility gap*
- bioTCAD combines *AI and measurement-backed, physics-grounded simulation*
- applies *the* principle that made semiconductor TCAD trustworthy
 - validate model parameters to YOUR experimental measurements to be reliably right



Erudio Bio's Business Models

Erudio Bio Products

- *Drug Development*
 - Biosimilar / AI Compound Design and Drug Discovery
- *Clinical Diagnostic*
 - medicine is already 20% of the world's economy and growing at 5% per year
- *Biodefense*
 - Global War on Terror (GWOT) to great power competition
 - flexible, efficient solution needed for Chemical, Biological, Radiological, and Nuclear Defense (CBRND) to readiness



Teams

Team & advisory board

- team
 - Kee-Hyun Paik, Ph.D. (CEO) - chip, microfluidics, instrumentation
 - Sunghee Yun, Ph.D. (CTO) - AI, optimization, business development, software
- advisory board
 - Michael Cola - CEO of AEVI Genomic Medicine (\$62B sales to Takeda)
 - Tim Germann - CCO of Carterra Bio
 - Karyn Eliot - retired CIA Sr. Executive
 - Phil Ferro - virologist, formerly DoD, DoS, HHS and White house
 - Bill Chen - Former hedge fund and VC professional with national security, FFRDC
 - Ronald W. Davis - Director of Stanford Genome Tech Center (\$15B+ exits)
 - Michael Snyder - Prof. Genetics, Dir. Stanford Human Genome Center
 - William J. Greenleaf - Prof. Genetics and Applied Physics, Stanford University

Stanford
ENGINEERING

USC Marshall
School of Business

Genentech

Shire

SAMSUNG
ELECTRONICS

amazon

SK hynix

Stanford
Computer Science

Appendix

Silicon Valley AI Nexus

Foundation

Silicon Valley AI Nexus (or just AI Nexus)

- next-generation Silicon Valley community *exploring AI's profound impact on technology, economy, society, ethics, and humanity*, and translating that exploration into real-world action
- evolved into *the premier Silicon Valley AI community bridging Korean and global tech ecosystems*
- our community has grown and united by a shared conviction – *AI must advance human flourishing, not diminish it!*
- comprehensive expertise across AI domains
 - biotechnology, healthcare, and medical research
 - industrial applications and data centers
 - cloud infrastructure, storage solutions, mobile technologies
 - customer service platforms, multi-agent systems

Three Core Principles (Values) we uphold!

- *Explore & Lead*
 - world-class forums, the AI & Humanity Council, and thought leadership shaping AI's most consequential questions
- *Elevate Community*
 - mentorship, startup showcases, professional connections, and leadership opportunities that amplify every voice
- *Give Back to Society*
 - policy engagement, academic partnerships, and public discourse ensuring AI's benefits reach beyond Silicon Valley

Our journey - forum history

- Nov-Dec 2024 - “The AI Strikes Back” & “Free Your Data”
 - Prof. Jung Hee Cheon (homomorphic encryption revolution)
- Jan 2025 - “The AI Knight Rises”
 - [Sunghee Yun](#) @ Erudio Bio on deep learning to flourishing societies
- Feb 2025 - “Silicon Citadel”
 - Chanik Park @ MangoBoost on AI data infrastructure
- Mar 2025 - “Blockchain Awakens”
 - Daejun Park @ a16z crypto on decentralized AI
- Apr 2025 - “Advancing Humanity”
 - Stanford Medicine team on bio/medical AI
 - co-hosting with K-BioX
- May 2025 - “The Autonomous Alliance”
 - Microsoft, GitHub, Uclone, SK Hynix on AI agents

Our journey - forum history

- Jun 2025 - “Silicon Companions”
 - Altos Ventures on robotics & smart devices
- Aug 2025 - “The Human-Centric AI Revolution”
 - address legal and ethical issues related to AI
- Nov 2025 - “The AI Silicon Race”
 - Korea-US Innovation Leadership at K-ASIC



Partnerships, Collaborations, and Community

Strategic partnerships & ecosystem

- *Perpetual Partnership with KOTRA Silicon Valley as Strategic Alliance*
- 2026 co-hosting partners
 - K-ASIC (Korea AI & IC Innovation Center)
 - K-BioX (biotech innovation)
 - KOTRA Silicon Valley (trade & investment)
 - Consulate General of the Republic of Korea at San Francisco (diplomatic support)
 - KABANC (Korean American Bar Association of Northern California - legal expertise)
- building bridges between Silicon Valley innovation and Korean institutional networks
- creating comprehensive support ecosystem: technical, legal, business, diplomatic



Community & engagement

- membership requirements
 - attend one! AI Nexus event!
- member benefits
 - networking with AI professionals across all domains
 - knowledge sharing and collaboration opportunities
 - direct access to world-class speakers and experts
- forum format - 5pm-8pm, typically Wednesdays at premier Silicon Valley venues
- venues - Stanford, KOTRA, SK Hynix, Altos Ventures, K-ASIC, and more
- active community engagement and professional development



AI Nexus encourages and embraces Interest Groups

- Bio / Medical / Data Group (7) - Chanik, Insuk, Jeff, Jongmin, Minha, Mitch, Sunghee
- Karaoke Group (4) - Hayden, Jeff, Sunghee, Yeseul
- AI Hands-on Group (5) - Chanik, James, Kyoung Whan, Minha, Sunghee
- Legal Professionals Group (13) - Dayoung, Deborah, Ha Young Hayden, Hyojin, Hyung Won, Hyunjung, Jaewon, Jeff, Jiyeon, Joo Hyong, Natalie, Yeseul
- East Bay Group (7) - Daniel, Eugene, Hyunjung, Linda, MiSook, MJ, Sunghee
- App Builder (Vibe Coding) (4) - Eunkwang Jongmin Minha Sunghee



Collaboration with Institutions & Universities

- MOUs
 - SNU
 - *AI Nexus × SNU College of Engineering Silicon Valley Immersion Program*
 - *Winter Internship 2026*
 - asked by
 - KSWAN
 - KIC SV
 - SVreboot
 - Seoul National University (SNU)
 - Kyunghee University
 - KASPA
 - Korea Univ.
 - Sungkyunkwan Univ.
 - KAIST
 - Korean American Semiconductor Professional Alliance (KASPA)
 - ⋮

Collaboration with Institutions & Universities

- Co-hosting with
 - Consulate General of the Republic of Korea at San Francisco
 - K-BioX
 - KOTRA SV
 - KIC SV
 - K-ASIC
 - Korea-America Student Conference (KASC)
 - Korean American Bar Association of Northern California (KABANC)
 - ⋮

Committees

AI Nexus Committees

- Board of Directors
 - *Sunghee Yun* - Co-Founder & Leader & Chair
 - *Minha Hwang* - Co-Founder & AI Master
 - *Sue Kim* - Co-Founder & Marketing Leader
 - *Youngwook (Hayden) Song* - Co-Founder & Legal Affairs Advisor
 - *Bo Hyoung (Jeff) Lee* - Co-Founder & Legal Affairs Advisor
 - *MiSook Chung* - Co-Founder & Community Engagement Chair
- Vision & Principles Committee
- Tech & Social Media Committee
- Program & Content Committee
- the full list of committees can be found [here](#)!

San Francisco AI Summit in July, 2026

The K-AI Summit - Security Alliance becoming Tech Alliance

- *24-Jul-2026, The Midway, San Francisco* – South Korea President Lee hosted 150 leaders, in real time *turning 70-year security alliance into technology alliance*
 - Jensen Huang (NVIDIA) · Sam Altman (OpenAI) · Dario Amodei (Anthropic) · Hock Tan (Broadcom) × the Chairmen of Samsung, SK, Hyundai, and NAVER
- *“San Francisco K-AI Declaration”* – Korea as an *irreplaceable* node of the global AI supply chain; “AI for Everyone” for 50M citizens; sharing AI’s benefits with the world
- *~\$950B in initiatives, 6 MOUs signed*
 - SK × NVIDIA: \$500B+ LOI – AI factories & next-gen memory; 2GW Vera Rubin / HBM4 data center by 2027



Silicon Valley AI Nexus was in the room!

- *not* something we watched on the news – this community was there
 - *AI Nexus stewarded significant share of the invitation-only seats: founders, researchers, and investors from this community, present at historic moment for Korea-US technology relations*
- *lesson - bridges are not built by governments alone*
 - they are built by people who belong to both sides – which is exactly what you are training to become



One voice can reach the stage

- *three days after the summit, this ran in Korea's leading economic daily*
 - my op-ed on what that night meant, seen from inside Silicon Valley (*The Korea Economic Daily*, Jul 28, print B7)
 - memory bottleneck · physical AI · bio AI · the diaspora as the bridge
- *the point is not the article – it is the path*
 - community → stage → national conversation: bridges carry traffic in both directions

그날 샌프란시스코에선 'K-AI'의 무대가 열렸다

기고 / 윤성희 애플다오바이오코리아 대표

韓, 실리콘밸리서 AI 비전 선언
메모리-전력 병목 해결 열쇠로

지난 24일 저녁 샌프란시스코의 한 행사장. 엔비디아의 잼슨 황, 오픈AI의 샘 올트먼, 엘트코프의 다리오 아모데이 최고경영자(CEO)가 한 자리에 모였다. 이재명 대통령이 우리 기업 총수들도 함께했다. 이날 인공지능(AI) 해결 경쟁의 심장부에서 한국이 비전을 선언하고, 세계가 경청했다. 필자는 스탠포드에서 전자공학 박사 학위를 마친 뒤 삼성전자와 SK하이닉스에서 반도체를, 아마존에서 전자싱커와 AI를 경험했다. 한국과 실리콘밸리를 오가며 스트리트뷰도 촬영했다. 하지만 이날의 장면은 여전히 낯설면서도 흥분했다. 세계에서 가장 바쁜 사람들이 한국이 마련한 자리에 모인 건 외교적 예우가 아니다. 한국이 AI의 핵심 국가라는 증거다.

오랫동안 실리콘밸리에서 한국은 메모리 가격을 얘기할 때 등장하는 '물류론 공급자' 정도였다. 그런데 공

기가 달라졌다. 요즘 자네 자리에서는 '메모리가 병목이고 전력이 모자란다'는 얘기가 회자다. 추론의 시대에 병목이 연산에서 메모리-에너지로 옮겨 온 것이다. 그 병목의 열쇠를 쥔 나라가 한국이며, 이는 우리 기업들이 수십 년 축적으로 배려 낸 성과다. 한국은 이제 공급망 조연이 아니라 AI 혁명의 속도를 결정하는 핵심 변수다. 남은 과제는 이 두 위를 국가의 지속적 경쟁력으로 바꾸는 일이다. 삼성전자와 SK하이닉스의 과감한 투자가 이치고 그 열에서 스타트업이 자라나도록, 정부가 인허가-인재의 토양을 다져줘야 한다.

더 중요한 것은 다음 승부처다. 챗GPT가 연 첫 말이 '말하는 AI'였다면, 실리콘밸리의 관심은 이미 퍼지컬 AI, 즉 '말하는 AI'로 옮겨 가고 있다. 이 승부는 최고의 모델을 넘어, 그것을 훈련시키고 검증할 현실의 제조 환경을 갖춰느냐에서 갈린다. 자동차-조선-배터리-로봇을 아우르는 한국의 밀집된 제조 생태계는 세계가 쉽게 복제할 수 없는 거대한 학습장이다.

바이오 AI의 잠재력도 크다. 임상에 들어간 신약 후보는 실종률 90%에 달하는데, 한국은 남다른 조건을 지녔다. 전 국민 건강보험으로 축적한 데이터가 있고, 건강검진이 일상으로 자리 잡은 덕에 국가 단위로 쌓인 건강 관련 사람들의 데이터까지 있다. 무엇이 건강관 상태인지 AI가 배울 수 있다는 뜻이다. 세계 최고 수준의 바이오 의약품 생산 능력에 이 데이터가 더해지면 '신약 발굴 엔진'의 마지막 조각이 채워진다.

샌프란시스코 AI 선언은 시작일 뿐이다. 자본의 깊이, 심사의 전문성, 실패를 용인하는 문화도 속제로 남는다. 그렇지만 그 연결은 이미 시작됐다. 실리콘밸리의 한인 전문가들이 한국의 기업-연구기관-정부와 교류하며 통로를 만들어 왔고, 이번 선언은 여기에 정부의 무게를 더했다. 앞으로 정부의 꾸준한 관심과 실리콘밸리의 뜨거운 의지가 오랫동안 지속되길 기대한다.



Selected References & Sources

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Thank You