UCSF is a purely a health sciences university

- 4 professional schools: medicine (MD), dentistry (DDS), nursing (RN) and pharmacy (PharmD)
- Graduate Division has 20 PhD programs and 12 Master’s programs
- ~3000 faculty
- ~3000 students (professional and graduate)
- ~3000 trainees (residents and postdoctoral fellows)
- UCSF Health: 18,000 staff and physicians, 1,290 beds, admits 41,000 patients and has over 2.5 million outpatient visits per year, annual revenue of $5B
University of California San Francisco

San Francisco Campuses and Clinics

Parnassus Heights
- School of Medicine
- School of Pharmacy
- School of Dentistry
- School of Nursing

Mission Bay
Mount Zion
Zuckerberg San Francisco General
SF Veterans Affairs Medical Center
Alliance Health Project
Buchanan Dental Center
Pritzker Psychiatry Building
China Basin

Six Nobel Laureates
Innovation Ecosystem at UCSF Mission Bay

- Nobel Laureates
- $709 Million in NIH Funding
UCSF Leading Health Care AI’s Revolution

UCSF has several campus-wide AI initiatives to become THE AI-enabled academic life sciences university

Sam Hawgood, MBBS
Chancellor, Office of the Chancellor
Arthur and Toni Rembe Rock Distinguished Professor
“It’s fair to say UCSF has always been in the business of building tools that don’t exist today. It’s going to be no different for artificial intelligence.”

Atul Butte, MD, PhD
Bakar Institute Director; Priscilla Chan & Mark Zuckerberg Distinguished Prof; Chief Data Scientist for UC Health
"UCSF is a leading center of biomedical education, clinical and basic science research. We need to be thinking across all of our mission areas and schools to meet the health care challenges of our time."

Catherine Lucey, MD, MACP
Executive Vice Chancellor and Provost, UCSF
UCSF Innovation in Numbers

- 200+ startups
- $594M raised in 2023
- 191 Licensing deals (2023)
- 2970 Patents
- 2133 Active Inventions
- 100+ Products to Market
- $50M+ in Licensing Revenue
- $823M in NIH funding
Industry Contracts Division

Our experienced team provides comprehensive guidance during contract negotiation and throughout project lifecycles... allowing you to focus on what you do best.

Groundbreaking Research

Elevate your Research Collaborate with UCSF
UCSF Innovation Ventures

We help with:

- Entrepreneurial Education
- Technology Advancement
- Transformational funding
- Licensing
- Strategic Partnerships
- Startup Creation
Dedicated to helping the UCSF community navigate the complexities of translational technology development by working up-close with our research faculty, promising students, and industry partners to really understand the science and how it can be applied to healing.
Strategic Alliances at UCSF

A partner of choice

- Identify and build strategic partnerships between UCSF and industry
- Develop contractual and business models
- Incentivized with a shared risk/reward structure
- Provide alliance management expertise

Peter Kotsonis, PhD
Interim Vice Chancellor of Business Development
Strategic Alliances Team at UCSF

Jon Brown, PhD
Alliance Development Manager

Amy Gryshuk, PhD
Associate Director

Gabriela Fernández-Cuervo, PhD
Alliance Development Manager

Olivia Roberson, PhD
Senior Alliance Manager

Aleksandra Kijac, PhD
Alliance Development Manager

Aenor Sawyer, MD
Senior Alliance Development

Inder Takhar
Project Coordinator

Sean Karlin
Senior Brand and Communications
Catalyzing Innovation at UCSF

- Seed funding up to $100k through Catalyst Program
- Up to $1M per project through InVent Fund
  - Expert Industry Advisors
  - NewCo Mentorship and Guidance
  - ‘Entrepreneur in Residence’ Program

Charles Hart, PhD
Executive Director, Catalyst Program

Roopa Ramamoorthi, PhD
Director, Catalyst Program & InVent Fund

Nathaniel Prorok, MHA
Director, LaunchPad & Senior Program Manager, Catalyst

Sohela Shah
Program Director
Catalyst & Invent Fund
Technology Management and Advancement at UCSF

Todd Pazdera, PhD
Director, Business Development, EOD & Licensing

Gonzalo Barrera-Hernandez, PhD
Director, Business Affairs & Strategic Partnerships
Technology Management and Advancement at UCSF

Translating UCSF ideas into new companies and commercial products to benefit patients

- Evaluate and grow new ideas
- Assess market, develop business models
- Connect with industry and KOLs
- Build startups and pitch to investors
- Develop Intellectual Property Strategy
- Value technology
- Negotiate licensing deals

Executive in Residence (XiR) and Entrepreneur in Residence (EiR) Programs

Selection/Criteria
- Screen Candidates and SignUp

Alignment
- XiR’s Review Opps, Provide Services and Match

Relationship Management
- Team Builds StartUp Pitch and Connect to Investors
Entrepreneurship at UCSF

Stephanie Marrus, MBA, MA
Managing Director of Entrepreneurship
Innovation Ventures

Exposing academics to entrepreneurial experience

- Exploring the commercial potential of your ideas
- Translating them into a business plan
- Connecting to accelerators and funding sources
- Global Startup Course in 36 countries
UCSF partners with Autobahn Labs

Drug Discovery Accelerator Bringing

- Expertise
- Global drug discovery technology and capabilities
- Financial capital

➢ 3 Options to license from UCSF
➢ 1 Licensed technology from UCSF

Pamela England, PhD
UCSF Professor
Want to know more?

Jon Brown, PhD
UCSF Business Development and Alliance Manager
UCSF as a founding academic collaborator of PICI

PARKER INSTITUTE FOR CANCER IMMUNOTHERAPY

Cancer research and breakthrough immune therapies accelerator

- Brings top researchers together
- Provides resources
- Eliminates barriers

Kole Roybal, PhD
Director of UCSF PICI
Want to know more?

Olivia Roberson, PhD
UCSF Sr. Alliance and Business Development Manager
UCSF partners with Bristol Myers Squibb

Industry and Academia Collaboration focused on development of next-generation, recombinant antibody-based cancer therapies
UCSF partners with Bristol Myers Squibb

Jim Wells, PhD
UCSF RAN Lead

“"This is a spectacular example of how industry and academia can work hand-in-hand to discover new medicines”

Jim Wells, PhD
UCSF RAN Lead
Gabriela Fernández-Cuervo, PhD
UCSF Alliance and Business Development Manager

Want to know more?
UCSF partners with Foundery Innovations

Max Krummel, PhD
UCSF Professor

Accelerator for transformative immunotherapies

- Immunotherapy venture studio
- Focus on company creation
- Efficient validation and translation of early drug concepts
Aleksandra Kijac, PhD
UCSF Business Development and Strategic Alliance Manager

Want to know more?
UCSF partners with Eli Lilly and Company

Max Krummel, PhD
UCSF Professor

Working toward new insights into autoimmune diseases

- Proteomic, transcriptomic, epigenomic and structural data
- Freshly collected tissue
- Matched peripheral blood samples
- Clinically well-annotated patients
HS PROGRESS

The Hidradenitis Suppurativa Prospective Observational Registry and biospecimen repository

• Multicenter
• Longitudinal

Mission to improve the lives of people living with Hidradenitis Suppurativa

Haley Naik, MD, MHSc, FAAD
UCSF Co-founder
Mission to improve the lives of people living with Hidradenitis Suppurativa

HS PROGRESS

Want to know more?

Peter Kotsonis, PhD
UCSF Interim Vice Chancellor of Business Development
The Weill Neurohub

Accelerating the development of new treatments for neurological and psychiatric disease

- Seed funding for novel research ideas
- Interdisciplinary and collaborative projects
- Focus on near-term transformational potential
The Alliance for Therapies in Neuroscience

Stephen Hauser, MD
Director of UCSF Weill Institute for Neuroscience

Weill Neurohub
Accelerating the development of new therapeutics

- Long-term research partnership
- Centered on brain diseases and disorders of the central nervous system (CNS)
Want to know more?

Jon Brown, PhD
UCSF Business Development and Alliance Manager

Genentech
A Member of the Roche Group

Weill Neurohub
Arc Institute Accelerating Research

Nonprofit research organization

- Curiosity-driven and goal-oriented research with a focus on complex diseases, including neurodegeneration, cancer and immune dysfunction.
- Operates in collaboration with Stanford University, the University of California, Berkeley, and the University of California, San Francisco.

Silvana Konermann
Executive Director and Core Investigator

Patrick Hsu
Co-Founder and Core Investigator
Amy Gryshuk, PhD
Associate Director, Strategic Alliances
UCSF Innovation Ventures

Gemma Rooney, PhD
Assistant Director, Strategic Partnerships & Licensing, UCSF Innovation Ventures

Want to know more?
Chan Zuckerberg Biohub Network
Driving Disruptive Innovation

Steve Quake, D.PHIL.
Head of Science, Chan Zuckerberg Initiative

Joe Derisi, PhD
President, CZ Biohub San Francisco

Group of nonprofit research institutes bringing together scientists, engineers, and physicians

- Goal of pursuing grand scientific challenges over a 10-15 year timeframe.
- Focuses on understanding the mysteries of the cell and how cells interact within systems as well as developing new technologies leading to diagnostics and therapies.
Want to know more?

Gemma Rooney, PhD
Assistant Director, Strategic Partnerships & Licensing, UCSF Innovation Ventures
The aim is to deepen our understanding of genetics, discover new targets, and create next-generation technologies at scale that will become future standard practice for the pharmaceutical industry.
UCSF partners with GSK

Next-generation CRISPR-based technologies at scale

- Develop and optimize new CRISPR technologies
- Invest in automation platforms for large-scale CRISPR screens
- Deepen our understanding of genetics and discover new targets
Want to know more?

Amy Gryshuk, PhD
UCSF LGR Alliance Manager
UCSF Associate Director, Innovation Ventures
About SOM Tech

BROAD TECHNOLOGY EXPERTISE

DEEP KNOWLEDGE OF THE UCSF ECOSYSTEM

HUMAN-CENTERED APPROACH

SOM Tech provides leadership and advocacy across the School of Medicine’s technology spectrum, from research to program incubation to data security.
The **UCSF Clinical Innovation Center** aims to accelerate innovations to solve the most critical care delivery issues.

- **Gain insight; understand the human and system factors**
- **Identify the problem to solve and metric to shift**
- **Explore directions; develop prototypes**
- **Refine, pilot and scale**

For more information
To accelerate the translation of pioneering medical devices to improve patient care by lowering the barriers for surgeon-innovators. Focusing on value-based solutions with market viability, and Educating trainees in interdisciplinary collaboration and translation.

The Programs

- Weekly Innovators Forum
- Biodevice Innovation Fellowship Program
  - Two-year mentored research experience for surgical residents
- UCSF/UCB Masters of Translational Medicine
- Project Consultation for Faculty, Trainees, and UCSF-Affiliated Companies

The Team

Hanmin Lee, MD  
Clinical Lead

Shuvo Roy, PhD  
Engineering Lead

Usha Thekkedath, MD  
Admin Director

Learn More and Contact Us Here:
MASTER OF TRANSLATIONAL MEDICINE

Translating biomedical discoveries into clinical reality.

The MTM program is a joint program between UC Berkeley and UCSF.
We empower #healthtech entrepreneurs to deliver the future of #patient care.

We make getting to market easier for entrepreneurs by offering insider knowledge, mentorship, connections and access to funding.
Join Our 8th Annual Rosenman Symposium
Innovating Healthcare Access: A New Era for the Future

Keynote speaker:
Nick Kristof
Two-time Pulitzer Prize-Winning Journalist, Author, & Opinion Columnist for The New York Times

Attend ♦

May 21-22, 2024 | Mission Bay

UCSF Rosenman Institute
AW24

UCSF ALUMNI WEEKEND | APRIL 12-13, 2024

Celebrate with us at UCSF’s Mission Bay campus

Join fellow UCSF alumni at Alumni Weekend 2024

Point your mobile device camera at the QR code to visit alumni.ucsf.edu/aw.
Completing the Circle of Innovation: Biology for Engineering

Robotics for High Throughput Science

Recording Video in DNA

Medical Implants

Living Building Materials

DNA → Bacteria → Engineering → Biology → Health → Robotics → Medical Implants → Living Materials
UCSF Center for Advanced 3D+ Technologies (CA3D+)

Virtual surgical planning

3D Printing
Advanced visualization
Augmented/Virtual/Mixed Reality

https://ca3dplus.ucsf.edu/
The Mission

To improve the health, safety, and quality of life of pediatric patients by accelerating high-value, high impact pediatric device solutions at all stages of the total product lifecycle towards commercialization.

The Team @ UCSF

Hanmin Lee, MD  
Clinical Lead

Shuvo Roy, PhD  
Engineering Lead

Usha Thekkedath, MD  
Admin Director

Learn More and Contact Us Here:
PROBLEM:
• Between 30 and 50% of COPD patients with severe and very severe COPD suffer from airway obstruction caused by mucus plugs.
• Mucus plugs reduce lung function and diminish quality of life.
• There are no drugs approved to effectively liquify mucus plugs (mucolytics) in patients with COPD.

SOLUTION:
• AER-01 is a novel inhaled best-in-class therapeutic candidate designed to improve lung health by liquifying mucus plugs.
• AER-01 is a thiol-modified carbohydrate ("thiol-saccharide") which cleaves mucine disulfide bridges to liquefy ("lyse") mucus plugs.

TRACTION:
• >$18M in NIH funding
• $36M Series A
PROBLEM:

• Some 1 in 6 men will be afflicted with prostate cancer during their lifetimes, 30k will die every year.
• 12M men in the US seek treatment for benign prostate hyperplasia every year.
• Current therapies mainly centered around systemic testosterone ablation.

SOLUTION:

• Implant and delivery systems for localized, sustained drug delivery without systemic side effects.
• Focused on treatment of localized prostate cancer and BPH.
• Robust pipeline of target specific organ selective strategies.

TRACTION:

• Alessa Therapeutics continues patient Enrollment in Biolen®+RT Study with National Cancer Institute
• Alessa Therapeutics Announces Research Collaboration with Janssen
• Alessa about to start clinical trial with Enolen in Q1 2024
PROBLEM:
• Solid tumors are complex and refractory to most treatment regimens.

SOLUTION:
• Deploying the combination of CITE editing, a toolkit of synthetic receptors for tumor recognition and a combination of T cell enhancements to improve therapeutic activity.

TRACTION:
• Dose escalation underway with AB-1015 in Phase 1 clinical trial in ovarian cancer. Second program in kidney cancer, AB-2100, enrolling
• Collaborations with BMS and Genentech
• >$500M in Equity Funding and Revenues
BRAYVE™: The Smartphone Technology Platform for Radiation Oncology

PROBLEM:
- Only 30% of clinics have access to surface breath-hold systems and patients have no effective way of practicing their breath-holds.
- This more than doubles the chances of cardiac toxicity during radiation treatment.

SOLUTION:
- BRAYVE is a smartphone technology platform for radiation oncology and radiology that empowers clinics to more effectively treat cancer patients undergoing breath-hold, while also giving patients access to the worlds-first at-home device that will improve their breath-hold consistency.

TRACTION:
- Provisional patent approved, full patent pending
- MVP 80% complete and technology validated against current systems

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PROBLEM:
• To build single dose therapeutics that durably control expression of human genes.

SOLUTION:
• Single-dose genomic medicines that harness epigenetics for durable and heritable gene silencing.
• A modular platform for epigenetic editing to address a wide range of complex diseases.

TRACTION:
• Chroma Medicine Presents Preclinical In Vivo Data Showing Durable Cholesterol Reduction with a PCSK9-Targeted Epigenetic Editor at the 2023 AHA Scientific Sessions
• >$250M in Funding

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PROBLEM:
- Mutation in the TERT promoter enables unlimited cell proliferation for over 50 cancer types, including glioblastoma.
- The SOC for glioblastoma has remained unchanged for decades and the average survival rate is 15 months.

SOLUTION:
- GABP degrader reduces TERT expression in tumor cells harboring the TERT promoter mutation.
- Reduced TERT causes a shortening of telomeres in cancer cells and improves survival in an orthotopic xenograft mouse model of GBM.
- Replicating retroviral delivery system only infects dividing cells and will be used for cancer specific delivery of the degrader.

TRACTION:
- Provisional patent filed. Publication under revision at Nature Genetics.
PROBLEM:
• Killing pathologic senescent cells improves many preclinical age-related disease models.
• Identifying a target that is safe for systemic administration remains a challenge.

SOLUTION:
• Deciduous eliminates senescent cells by re-activating the failed immune system’s surveillance mechanism in diseased patients.
• A single systemic dose improves endpoints in a pulmonary fibrosis preclinical model, as well as a diet-induced obesity metabolic disease model in under two weeks.

TRACTION:
• >$18M in funding
• Mechanism discovery published in *Med* titled, "Invariant natural killer T cells coordinate removal of senescent cells"
PROBLEM:
• 60% of Meningitis and Encephalitis (ME) cases are due to infection.
• 50% of ME cases are undiagnosed.
• Conventional testing is limited, targeting only a handful of suspected pathogens at a time and delaying effective treatment in critically ill patients.

Rapid Pathogen Detection by Metagenomic Next-Generation Sequencing

SOLUTION:
• Agnostic, broad-based detection of pathogens that cause neurologic infections from cerebrospinal fluid.
• Proprietary bioinformatics analysis platform.

TRACTION:
• $35M Series A funding
• Charles Chiu receives Research or Leadership in Clinical Microbiology Award from the American Society for Microbiology
• Delve partners with US CDC in a Nationwide Fungal Meningitis Outbreak Investigation

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PROBLEM:
• 30% of patients with a kidney transplant go back on dialysis after transplant.
• Thousands of marginal donor kidneys are discarded each year.
• Warming injury to the kidney during sew-in drives these poor outcomes, and the standard of care (ice and gauze) is ineffective.

SOLUTION:
• The Kidney Pod keeps the donated kidney at the optimal temperature during sew-in, eliminating warming injury.
• Gives surgeons the confidence to Say Yes to more marginal kidneys.
• Platform cooling technology applicable to cardiac surgery and all organ transplants.

TRACTION:
• $1.6M in pre-seed funding (UCSF Catalyst, UCSF PDC Stanford Medicine Catalyst)
• National Kidney Foundation Innovation Fund Investment
• FDA Breakthrough Device Designation (2022)
PROBLEM:
• Dramatic rise in the incident of chronic inflammatory diseases presents a global health burden.

SOLUTION:
• Elgia Therapeutics targets caspase-1 for hidradenitis suppurativa as initial indication.
• Our novel active-site, targeted covalent and allosteric inhibitors disrupt key cellular processes involved in metabolic, inflammatory, and fibrotic diseases.

TRACTION:
• ~$5M in seed funding to date.
PROBLEM:
- Inability to identify the healthiest embryos to transfer, leading to low success rates of IVF and need for multiple IVF cycles.

SOLUTION:
- Novel biomarkers indicative of embryonic health, laying the foundation for a safe and reliable device tailored for embryo selection.
- State-of-the-art technology that has the potential to dramatically increase IVF success rates.

STATUS:
- Spinning out
PROBLEM:
- Next generation therapies to help patients with chronic unmet clinical needs.
- Starting with endocrine disorders.

SOLUTION:
- Encapsulated Cell Replacement Therapy (EnCRT).
- Encellin’s EnCRT allows enclosed cells to function like smart molecular factories, releasing therapeutics when needed.

TRACTION:
- ~$10M in funding 2023
**PROBLEM:**
- Proteins bind target reversibly.
- Most therapeutics still suffer from low tumor retention and high off-target toxicity.

**SOLUTION:**
- New generation of covalent ‘War-Lock™’ biologics
- Proprietary unnatural amino acids.
- Protein drugs derived from the platform can be modified to incorporate various payloads, creating antibody-drug conjugates (ADCs) or radioligand therapies (RLTs) with specific target tissue delivery, without the need for half-life extension engineering.¹

**TRACTION:**
- $61M in Funding

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¹ For more information, please visit: [LEARN MORE]
PROBLEM:
• First generation protein degradation approaches target intracellular proteins only.
• 40% of the proteome is unaccounted for.
• Better targeted therapies are still needed.

SOLUTION:
• EpiTAC platform enables the development of targeted therapies.
• Targeted degradation of disease-driving membrane and extracellular proteins.
• Solution has applications in cancer, immunology and neurological diseases.

TRACTION:
• >$70M in funding 2023
PROBLEM
• 30-40% of epilepsy is caused by genetic mutation.
• Most genetic epilepsies are pharmaco-resistant, emerge early in life & are life-threatening.
• Existing antiepileptic medications were not identified using genetic epilepsy models.

SOLUTION
• ‘Aquarium-to-Bedside’ drug discovery using genetically modified zebrafish models in high-throughput phenotype-based drug screening.

TRACTION
• >$35M in seed funding
• Six drug candidates licensed from UCSF w/method-of-use and formulation IP
• Compassionate-use and OLE data
• On-going ARGUS Phase 2 Potentially Pivotal Study of EPX-100 Treatment of Dravet Syndrome
PROBLEM:
• Too often, cancer is detected too late. Liquid Biopsy holds the promise to improve cancer screening.
• Early progress has been made using DNA biomarkers in the blood, however early stage and small tumor detection remains challenging.

SOLUTION:
• Novel RNA biomarkers actively shed only by living cancer cells. Exai has amassed the largest cfRNA database.
  • Highly sophisticated AI engine reveals cancer specific patterns of RNAs in blood.
  • Exai’s platform can be used across the cancer diagnostics continuum including screening, monitoring and therapy selection.
• Highly sensitive detection of earliest stages of cancer and the smallest tumors.

TRACTION:
• Exai launched in 2021 with a $67.5M Series A funding
• Amassed the largest cfRNA dataset
• Presented data across 8 cancers

Hani Goodarzi, PhD
Co-founder & Scientific Advisor, Exai Bio
UCSF Associate Professor and Arc Institute Core Investigator
PROBLEM:
- No regenerative therapies are available to treat xerostomia, damage incurred to salivary glands in the course of radiation treatment for head and neck cancers.
- Preventative treatments show little benefit.

SOLUTION:
- An injectable neuromimetic hydrogel to regenerate radiotherapy-damaged salivary gland tissue through stimulation of resident stem cells to overcome xerostomia, or dry mouth.

TRACTION:
- ~$6.3M in NON-DILUTIVE funding (NIH and CIRM)
- 505(b)2 Accelerated FDA pathway
- Pre-IND Submission Completed
- U.S. & International Patent Application filed

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**PROBLEM:**

- Health Systems face overwhelming risks in adopting new Digital Health tools
  - Costs ~$80K + weeks for each vendor discovery and diligence
  - Onboarding takes forever
  - No performance monitoring

**Digital Health Contacts to Contracts – Accelerated!**

**TRACTION:**

- IP licensed from UC
- Signing up Beta customers

**SOLUTION:**

- 100s of proprietary data points for each tool with pre-recorded demos and confidential peer feedback → select tools with confidence
- Automated checklists and workflow automation → speed up onboarding
- Performance monitoring → improve outcomes

Novel platform to lower friction between health systems and digital health tool vendors, leading to faster adoption of tools with better outcomes

Andrew Auerbach, MD
Board Chair, Co-founder
Professor of Medicine
andy@kuretic.com

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PROBLEM:
- 80% of surgeons report musculoskeletal pain due to surgeries.
- Current laparoscopic surgery simulators are either too expensive, non-portable, or non-ergonomic.
- Ergonomic simulation training remains inaccessible to most residents.

SOLUTION:
- An affordable, high-fidelity and ergonomical simulator for laparoscopic surgery.
- Simulator utilizes wireless video transmission through Apple’s Continuity Camera technology that allows for real-time broadcasting as the camera captures the working surface and displays real-time video on the laptop screen.
- Cost of materials <$35 (not including laptop and iPhone).

TRACTION:
- Prototype built and currently used by residents in their skills curriculum.
**PROBLEM:**
- Biological complexity is resisted instead of embraced in biomedical research.
- Data and knowledge silos impede scientific breakthroughs.

**SOLUTION:**
- Mate’s core engine offers unparalleled data access - harmonized, normalized, & seamlessly packaged.
- Intuitive explainable AI interfaces for wet and dry lab scientists tackle months of research in minutes.

**TRACTION:**
- Supported by the NSF Convergence Accelerator
- Leveraged by NASA, academic institutions, and pharma companies of all sizes, worldwide

Charlote Nelson
Co-founder & CEO, Mate Bioservices
UCSF BMI Alum

Sergio Baranzini
Co-founder, Mate Bioservices
UCSF Professor of Neurology
PROBLEM:

• Adherence with medications is a fundamental problem in the care of glaucoma patients as 24–59% fail to receive the intended treatment.

• Non-adherence to therapy leads to irreversable loss of vision.

SOLUTION:

• Long acting zero-order drug delivery of small molecules & biologics for 6-months or longer. Office based procedure: Miniaturized Injectable Delivery System (MIDS).

• Transform treatment for glaucoma & retinal diseases with better clinical outcomes through patient compliance.

TRACTION:

• Lead Program: Glaucoma MIDS at IND Enabling Stage
• Accelerated regulatory pathway: FDA’s 505(b)(2)
• 12 Issued Patents (Domestic and International)
• Partnerships with major pharmaceutical companies
SOLUTION:
- Clinical vector with a dCas module and an engineered enhancer.
- Targeted delivery with a one-time injection in the affected system.
- Restrictions the intervention to the affected cells
- The dCas module normalizes the level of gene expression.

TRACTION:
- Raised 6M seed + BD partnership
- 3 programs under a Research Collaboration and Option Agreement with Sarepta Therapeutics
PROBLEM:

• Current methods to diagnose and manage glaucoma are inadequate and represent a significant burden on the healthcare system.
• 24-hr IOP monitoring demonstrated that nearly 80% of patients are under-treated.
• Current delays in diagnosis and under treatment yield unnecessary vision loss.

SOLUTION:

• Mounting self-sensing cantilevers in soft contact lenses unlocks accurate and automated 24-hr IOP monitoring
• Normative database and algorithms enable better diagnosis and decision-making tools for treatment selection

TRACTION:

• 3 patents filed or in process
• ~$1M raised in non-dilutive funding
• Currently in discussions on FDA 510k De Novo
PROBLEM:
• Developing live biotherapeutics that target the core drivers of disease.
• Microbial therapeutics reseeding the depleted gut microbiome to prevent and treat disease.

SOLUTION:
• Patient-centric platform.
• Microbiome data analysis, machine learning, anaerobic microbiology.
• Optimizes multi-strain live biotherapeutics to prevent/treat disease.

TRACTION:
• $50M in funding
• Awarded multiple NIH grants

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PROBLEM:
• Surgeons have difficulty translating radiology information into real world patients for preoperative planning.

SOLUTION:
• Augmented reality software to help with preoperative planning by providing patient-specific high fidelity 3D holograms.

TRACTION:
• Nearly $1M from grants, accelerators, and VC funding
• Completion of 5 pilots (presented/published)
• IP: developed proprietary software and model creation methods
• Member Microsoft Mixed Reality Partner Program
• Finalist UCSF Digital Health Award
• Recently submitted product for FDA 510k clearance
PROBLEM:
• No effective therapies for brain and eye cancers.

TRACTION:
• Awarded $4M in Grant Funding from the California Institute for Regenerative Medicine (CIRM)

SOLUTION:
• Combining AAV gene therapy and cytokine immunotherapy into a single, reimagined modality that overcomes key challenges and redefines how we destroy tumor cells and elicit anti-tumor immunity.
• The first AAV gene therapy that can be made once and used in numerous indications.
• Our universal design drastically reduces clinical development times, manufacturing timelines, and capital needs for each clinical trial.
• ‘Universal’ means countless solid tumor cancer patients regardless of tumor type or mutations may benefit from this breakthrough approach.
PROBLEM:
- There are many autoimmune diseases which together account for among the highest rate of medication expenditures in the US.
- RA alone contributes an estimated $22.3B.

SOLUTION:
- One time treatment focused on autoimmune and inflammatory diseases.
- A unique platform for engineering actual Treg cells and depletion and deactivated Teff cells at the site of disease.

TRACTION:
- >$400M in Funding
- Sonoma Biotherapeutics Presented Preclinical Data from Novel T_{reg} Therapy for Rheumatoid Arthritis at American College of Rheumatology Convergence 2023

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PROBLEM:
• The computational burden of AI is increasing exponentially, impacting Energy consumption and compute costs.
• Such computational burden could also worsen the climate crisis.

SOLUTION:
• For any given computational budget, the SparsaAI™ algorithm delivers the optimal network architecture.
• Algorithm characterizes the optimal tradeoff between budget and architecture.

STATUS:
• Spinning out Gilmer Valdes, PhD Co-Founder, Sparsa
Associate Professor, Department of Radiation Oncology and Epidemiology and Biostatistics

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Ralph Gonzales, MD  
Chief Innovation Officer  
UCSF Health  
UCSF Clinical Innovation Center

PROBLEM:
• Timely and accurate data is a must to track, explore, and forecast clinical initiatives
• Current data collection tools may be cumbersome, delayed, or unavailable

SOLUTION: A self-service “value calculator” built in partnership with tag.bio analytics start-up

Avoid waiting weeks for data requests: Point-of-care use enables users to avoid waiting for data pulls

Limitless potential to explore innovative solutions: Platform draws directly from UCSF financial data

Creative cohort comparisons: Cohort feature allows inquiry of user-defined parameters

Drive real-time decision making: Queries return in seconds, allowing for rapid inquiry and iteration

TRACTION:
• Using tag.bio platform, $3.7M inpatient costs avoided in reducing short stay admissions from ED
PROBLEM:
• Cancer therapeutics act systemically, with systemic toxicities that reduce therapeutic index and limit efficacy.

SOLUTION:
Tumor-selective activation of therapeutics based on elevated tumoral labile iron levels
• TTR Rx activated by Fenton reaction with Fe$^{2+}$
• Releases Tx molecule tailored to tumor type
• Exacerbates ROS stress and promotes ferroptosis
• Spares normal cells, increasing Tx index

TRACTION:
• $3M seed round in 2023
• In vivo active leads with differentiated PK
• Three patent families: US 11,014,955; 11,072,594; WO 2023/049829

UCSF Co-founders
Adam Renslo, PhD
TataraTherapeutics
UCSF Professor and Associate Dean for Entrepreneurship
Eric Collisson, PhD
Tatara Therapeutics
UCSF Professor and Molecular Oncologist
tEPOR: Next Generation RBCs for Hemoglobinopathy Treatment

PROBLEM:
• 20% of sickle cell disease patients have a matched donor, yet <1% of patients in U.S. receive a bone marrow transplant indicating a major unmet medical need.
• Ex vivo CRISPR-mediated editing allows every to patient to have a “donor”, however myeloablation-associated mortality is a major barrier to safe correction of disease.
• In vivo editing has low delivery & editing frequencies.

SOLUTION:
• Genome editing is used to introduce a naturally occurring truncated erythropoietin receptor (tEPOR).
• By increasing production of functional RBCs, this editing strategy may compensate for low in vivo editing frequencies in HSCs.
• This editing strategy may eliminate the need for myeloablation.

TRACTION:
• Multiple patent disclosures filed to protect IP
• Work awarded American Society of Hematology Junior Faculty Scholar Award
PROBLEM:
• Current radioligand therapy (RLT) is limited by several factors leading to decreased efficacy and increased toxicity.
• Tumor responses are often transient and/or variable among patients.
• Improved and novel strategies for targeted radiotherapy are needed.

SOLUTION:
• Catalytic & renewable activation leverages the "bystander effect" to address heterogeneity.
• Platform provides specificity and payload retention with increased efficacy and reduced toxicity.
• Broad applicability to target multiple diseases beyond oncology.

TRACTION:
• Clinical data expected in 1H 2024
• Broad IP portfolio filed
PROBLEM:
• Cancers arise from aberrant DNA packaging.
• Current therapeutics target single defective factors not the entire aberrantly packaged state.
• Approaches to target entire aberrantly packaged DNA states can broaden cancer treatment and reduce potential for resistance.

TRACTION:
• $1M in pre-seed funding from MBC Biolabs, IndieBio (SOSV), ACS BrightEdge
• Won ONO Pharma Golden Ticket & Astellas Future Innovator Award

SOLUTION:
• TippingPoint’s platform synthetically generates disease and healthy DNA packaged states
• Readily scalable for small molecule screening
• Allows for the first time, drugging of entire disease driving DNA packaged states, with high specificity
• Applications in cancer and regenerative medicine

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Pioneering a Solution for Diseases of DNA Packaging Dysfunction

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SOLVED DNA STATES
Cancer driving DNA packaging state
Healthy DNA packaging state

SPECIFICITY
Small molecule dissolves disease state
Small molecule does not affect Healthy state

LEARN MORE:
**PROBLEM:**
- Oncology clinical trial recruitment remains inefficient, with only 13% of US oncologists participating in research.
- Inequities persist and <7% eligible patients enroll on trials.

**SOLUTION:**
- Trial Library’s evidence-based, provider-facing software integrated is integrated with technology-enabled patient-centered services.

**TRACTION:**
- Provider network includes >250 providers across >100 clinics in the US and is rapidly growing.
- Trial Library supports several large global biopharma trials and has become the preferred recruitment vendor for a large global biopharma partner.
PROBLEM:
• Drug discovery efforts for hypoxia indications have been challenging because of complex underlying mechanisms.
• Current standards of care in anemia in chronic kidney disease are effective but have significant safety concerns.

SOLUTION:
• Combined AI-enabled *in vivo* and *in vitro* platform to uncover novel oxygen disease targets and therapies that fast-track adaptation.
• First clinical program: targeting anemia in CKD
• In vitro POC and pilot screen performed, and hits identified.
• Multiple promising oxygen disease targets discovered.

TRACTION:
• $14M in DARPA funding
• Published tool compound for anemia in CKD target increases EPO only during hypoxia
PROBLEM:
- 1 in 10 people have a rare/genetic disease - 50% are children, 30% of them will die before their 5th birthday.
- Takes 12-15 years to get diagnosed
- It costs $28k/year/patient more to manage an RG pt compared to an average chronic disease patient (heart disease, AD, etc).
- Lack of specialty access and knowledge of EBM care as major reasons.

SOLUTION:
- An EMR integrated and solo standing app using EMR data + existing research to reduce diagnostic delays, give EBM management recs personalized to pt and department.
- Improves patient outcomes, reduces healthcare costs.

TRACTION:
- UCSF Innovations Ventures company
- 3 patents with associated publications
- First pharma customer for $100k/year
- Acceptance to Nucleate & Equalize

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**PROBLEM:**
- AML is a common blood cancer with poor prognosis (30.5% 5-year survival).
- There is a lack of immunotherapy targets for AML that are highly cancer-specific (i.e. not also expressed on normal tissues) resulting in significant toxicity and disappointing clinical efficacy.

**SOLUTION:**
- Proteomic platform for novel conformational cancer-specific target discovery in AML and solid tumors
- First-in-Class CAR-T therapy for acute myeloid leukemia (AML) or any other cancer harboring the active Integrinβ2 targetable antigen
- Active Integrinβ2 scFv’s developed by the PIs can be used with other immunotherapy formats like ADCs, or other cells of immune system like NK cells and macrophages.
- Combination therapy with another non-toxic CART to combat AML heterogeneity.

**TRACTION:**
- Anti-active Integrinβ2 CAR-T cytotoxicity is highly specific for AML while not toxic to normal hematopoietic cells, both in vitro and in vivo, unlike other leading AML CAR-T targets (Nature Cancer, 2023)