

ARIANE TOM, PH.D.

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Imaginative, bold, mission-driven, and resourceful solutions architect with over 14 years of technical training seeks ownership of a cross-functional and hands-on role to support strategic growth of early-stage companies. Incorporates keen awareness of macro-level influences on technology development to recognize and actively pursue novel opportunities. Orchestrates meaningful dialogue with high-level decision makers to translate business objectives into practical and future-proof patent and R&D strategy. Discovers trends and integrates advancements from disparate fields to propose innovative solutions to existing challenges. Empowers and inspires others with authenticity, integrity, and positivity.

EDUCATION

Stanford University PhD Bioengineering	2013 - 2018
Stanford University MS Bioengineering	2012 - 2014
Stanford University BS Materials Science & Engineering	2007 - 2011

Focus Areas: Brain-Machine Interfaces, Medical Devices, Robotics & AI, Sensors, Bioelectronics, Drug-Delivery Vehicles, Advanced Imaging & Spectroscopy | Materials Chemistry, Micro/Nanoscale Fabrication, Quantum Mechanics of Nanoscale Materials | Optogenetics, Molecular & Cellular Engineering | Clinical Needs & Technology, Biodesign Methodology

Professional Development: *Resident Entrepreneur, Venture Studio at Stanford Graduate School of Business*

Strategic Management of Technology & Innovation, Financial & Strategic Management of Intellectual Property, Patent Prosecution, Patent Law & Strategy for Entrepreneurs, Valuation of Public Companies in the Life Sciences

WORK EXPERIENCE

Doctoral Research Fellow | Next-Generation Neural Interfaces | Stanford Bioengineering 2013 - 2018

- Spearheaded an interdisciplinary research program focusing on flexible bioelectronic neural interfaces with applications in brain-mapping, prosthetics, and neuromodulation. Projects included: brain-polymer hybrids (CLARITY), electronic skin, and genetically-targeted polymer synthesis in living mammalian neurons.
- Initiated and facilitated a novel collaboration between neuroscientist Karl Deisseroth and chemical engineer Zhenan Bao, both renowned in their respective fields, to address strategic objectives of the NIH Brain Research Through Innovative Neurotechnologies (BRAIN) Initiative.
- Consulted by Program Manager at DARPA's Biological Technologies Office to inform and recommend specific technical goals and research funding directions for the Neural Engineering System Design (NESD) Program.

Associate/Patent Engineer | Patent Prosecution for Biotech Startups | Schox Patent Group 2018

- Directed interactions with executive and engineering leads of venture-backed technology startups to build valuable patent portfolios and develop IP strategy.
- Identified key unusual and non-obvious features of inventions to craft comprehensive and high-quality patent applications in U.S. and foreign jurisdictions.
- Motivated and fostered new client relationships sourced from broad academic networks at Stanford, UCSF, and UC Berkeley.

Investment Fellow | Early-Stage VC, Digital Health | Digital Horizon Capital (DHVC) 2016 - 2017

- Provided scientific counsel to Managing Director to evaluate venture investment opportunities across Silicon Valley and China, focusing on AI/machine learning and AR/VR applied to clinical and consumer-facing healthcare technologies.

Policy Analyst | Supply Chain Strategy for Clean Tech | U.S. Department of Energy 2010

- Delivered R&D policy recommendations to launch the first-ever Critical Materials Strategy, ensuring a sustainable supply of rare earth materials that are of both high importance to the clean energy sector and at high risk for resource disruptions.
- Engaged national and international science, engineering, business and mining experts to assemble projections and monitored international cooperation to prioritize a \$700,000 budget for the Office of Energy Efficiency & Renewable Energy.

ADDITIONAL RESEARCH PROJECTS

Research Assistant | Nanoscale Drug Delivery to Brain Tumors | UC Berkeley Materials Science 2011 - 2012

- Established a research partnership between neurosurgeon Krystof Bankiewicz at UCSF and materials engineer Ting Xu at UC Berkeley to develop ~15 nm nanoparticles to deliver a controlled dose of temozolomide to brain tumors in mice.

Research Assistant | Solar Electrification in Benin | Stanford Program on Food Security/Environment 2010 - 2011

- Evaluated health & nutritional, economic, and institutional impacts of solar-powered drip irrigation systems for growing high valued crops within rural Sub-Saharan Africa, providing crucial insight into the viability of solar electrification versus other interventions designed to minimize food/energy poverty and improve child and maternal health.
- Traveled to four villages in Kalalé, Northern Benin to administer surveys measuring comparative impact across women's agricultural groups that had and had not received solar technologies.

Research Assistant | Prosthetic Cornea | Stanford Chemical Engineering 2009 - 2011

- Devised a photolithographic method to precisely tune the curvature of interpenetrating hydrogel networks for a prosthetic cornea.
- Co-Inventor, patent application: "*Three-Dimensionally Shaped Interpenetrating Network Hydrogels*" US20100174021 A1

LEADERSHIP & COMMUNITY ACTIVITIES

Founder & Director | Project SafeBridge | Palo Alto, CA 2016 - 2018

- Conceived and developed a thoughtful digital solution to provide timely, easy to access, secure, and anonymized assistance to individuals with experiences of sexual violence seeking reflective dialogue and personalized resource navigation.
- Enlisted and inspired a team of students, engineers, social workers, medical professionals, and other allies to build an interactive chat platform tailored for trauma survivors converging techniques in cognitive behavioral therapy and cutting-edge advancements in natural language processing.
- Pitched concept at Stanford Health++ Hackathon 2016 with over 200 participants, placed Top 7/70 submitted teams.

Co-Founder & Director | Stanford iGEM | Palo Alto, CA 2009 - 2010

- Attracted, selected, and managed 8-10 Stanford engineering students from non-biology disciplines to form a competitive research team for the annual iGEM (International Genetically Engineered Machines) competition at MIT.
- Acquired lab space, equipment, and funding as well as actively built a community of interdisciplinary scholars and industry affiliates in support of synthetic biology research.
- Steered research agenda in its inaugural year of competition, winning gold medal and title of "Best Health and Medicine Application". Ten years later, the group continues to operate out of NASA AMES Research Center in collaboration with Brown University.

Founder & Director | ScienceSmart | Riverside County, CA 2005 - 2008

- At age 17, secured endorsement from the City of Riverside to realize a youth-driven community service program introducing over 2500 preschool children across Riverside County to science through hands-on activities, mini workshops, and experiments.
- Designed a 16-week program curriculum, recruited 200+ high school volunteers per year for three consecutive years, and collaborated with school administrators, students, and parents to ensure program success.
- ScienceSmart received national recognition by KABC Eyewitness News, Prudential Spirit of the Community Awards, Inland Empire Family Magazine, and Seventeen Magazine.

SELECTED AWARDS

DOD National Defense Science & Engineering Fellowship (NDSEG) 2011

- Full tuition and stipend awarded for an outstanding research proposal. A highly competitive fellowship with a 5% acceptance rate and 200 annual recipients.

NSF Graduate Research Fellowship Program (GRFP) 2011

- Full tuition and stipend awarded for significant research achievements and contributions to STEM education. A highly competitive fellowship with a 10% acceptance rate and 1000 annual recipients.