



## IDEAYA Website – Print Out Version

### Home

IDEAYA is an oncology-focused biotechnology company committed to the discovery of breakthrough synthetic lethality medicines targeting DNA damage and repair for genetically defined patient populations and for enhancing immunotherapy response, and immuno-oncology therapies targeting the tumor micro-environment. IDEAYA, located in South San Francisco and La Jolla, California, has assembled leading scientists and advisors with extensive knowledge and expertise in cancer biology and small molecule drug discovery.

### About Us

"At the core of a successful big biology and small molecule based drug discovery company is well understood pathobiology of the drug targets and excellent chemical matter to modulate them - one without the other ultimately equals failure. With its seasoned leadership and exceptional scientific staff and advisors, IDEAYA is well positioned to deliver on both fronts to discover important new cancer therapies."

Jeffrey Hager, Ph.D., Co-Founder and Senior Vice President, Head of Biology, Biosciences IDEAYA

IDEAYA is an oncology-focused biotechnology company committed to the discovery of personalized synthetic lethality medicines targeting DNA damage and repair for genetically defined patient populations and immuno-oncology therapies targeting the tumor microenvironment. Founded in 2015, the Company has assembled a world-class drug discovery team and Scientific Advisory Board (SAB) that is represented by three Members of the National Academy of Sciences. IDEAYA is located in South San Francisco and La Jolla, California.

A major focus of IDEAYA is to exploit the concept of synthetic lethality, a phenomenon whereby the independent loss-of-function of two different genes have no significant effects on cell growth and viability, but when combined results in robust cell death. Synthetic lethality while a longstanding concept in genetic model systems and cancer biology has only recently been translated into a therapeutic reality with the approval of a PARP-inhibitor, olaparib, in BRCA deficient ovarian cancer. IDEAYA will focus on novel synthetic lethal interactions for genetically defined patient populations, exploiting inherent tumor susceptibilities en-route to discovery and development of small-molecule agents to treat major human cancers. Another area of focus for IDEAYA will be to exploit the potential of modulating DNA repair to augment response to immunotherapy. In addition, drug discovery programs will target pathways known to produce an immune suppressed tumor microenvironment, enabling tumors to escape recognition by the host immune system.



## Our Science

"The emergence of highly efficient genome editing tools allows us to leverage decades of genetic interaction data from model organisms such as yeast to identify synthetic lethal combinations in human cancer cells. Mining those data is now highly feasible, and the potential for drug discovery and development is unprecedented. IDEAYA has assembled a team of scientific advisors and scientists with expertise ranging from basic enzymology to quantitative systems biology to yeast and mammalian genetics to clinical research. As such, we are ideally situated to realize this potential."

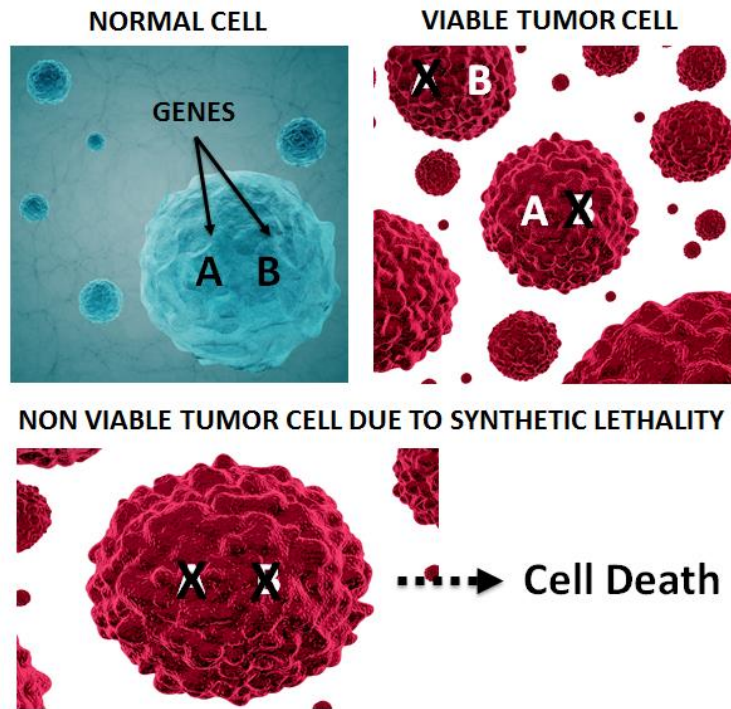
John Petrini, Ph.D., Memorial Sloan Kettering Cancer Center, IDEAYA SAB Member

### **Synthetic Lethality and DNA Damage**

Synthetic lethality (SL) is a concept first identified in the model genetic system *Drosophila melanogaster* (fruit fly) and recapitulated in yeast and other organisms. It was first suggested as a potential cancer treatment modality nearly 20 years ago (Hartwell et al 1997) and proof of concept for the approach now exists with the 2014 approval of the PARP inhibitor, Lynparza (olaparib), as an effective treatment for patients with BRCA 1/2 mutant ovarian cancer. Importantly, this biomarker driven approach to direct therapy to a "BRCA" subset of ovarian cancer patients has resulted in superior response rates and significant progression free survival. IDEAYA is prosecuting a novel set of DNA repair-based drug targets through a unique, tripartite approach that integrates 1) robustness and conservation of SL interactions across different organisms and in human tumor cells, 2) disease relevance of drug target and prevalent loss-of-function mutation in SL partner gene, and 3) small-molecule druggability. Another area of focus for IDEAYA will be to exploit the potential of modulating DNA repair with small molecules to augment response to immunotherapy.

### SYNTHETIC LETHALITY

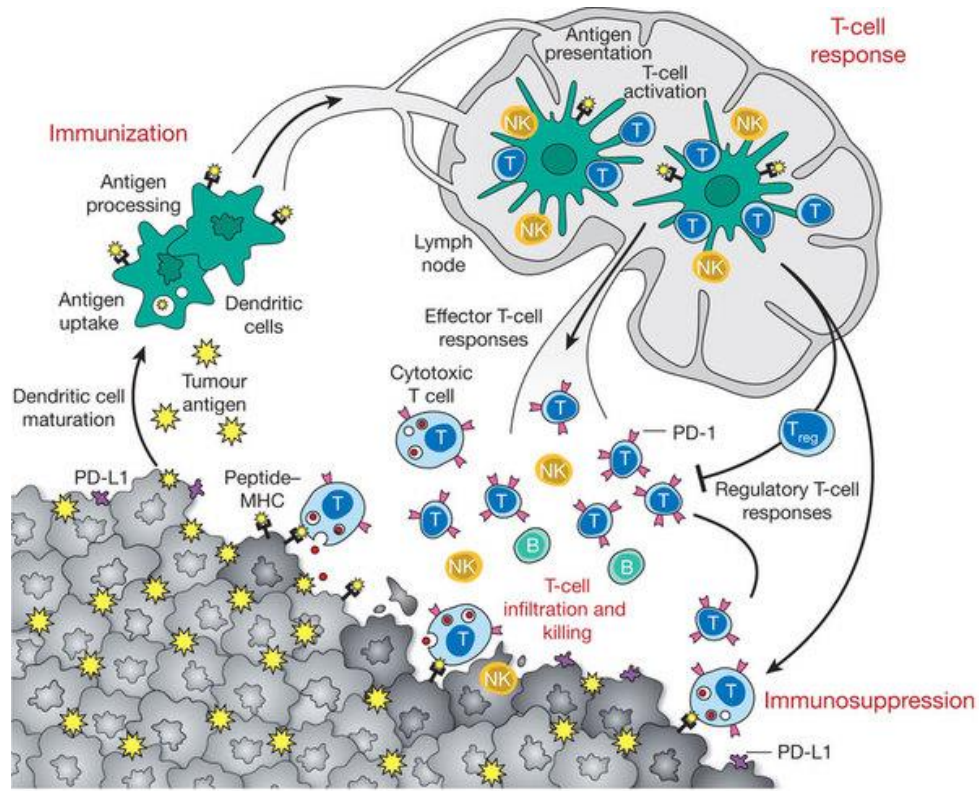
- Normal Cell: Harbors wild type genes A & B
- Viable Tumor Cell: Harbors mutated gene A or B
- Synthetic Lethality: The specific combination of inhibited/mutated gene A and B results in tumor cell death
- Treat genetic sub-populations that harbors specific mutations (e.g. BRCA1/2)



### Immuno-oncology

The concept of stimulating the human immune system to kill tumor cells has been around since the work of Coley a century ago. Recent advances in immuno-oncology (IO), using an array of treatment modalities is transforming cancer therapy. IDEAYA's IO programs are focusing on small-molecule druggable targets that function to cause an immune-suppressed, tumor-growth permissive microenvironment. Small-molecule agents targeting these key pathways are predicted to augment immune response directed at tumor cells as monotherapy but also in combination with other immune system targeting therapies to maximize therapeutic response.

**Tumor Micro-Environment**



Reference: Mellman, Coukas and Dranoff, Cancer Immunotherapy Comes of Ages, Nature 2011



## Investors



## People

"Our greatest asset is our scientists and their passion to discover innovative new therapies for cancer patients." Yujiro S. Hata, CEO, IDEAYA Biosciences

IDEAYA was founded with the premise that attracting the industry's best scientists and focusing on areas of transformative research is a proven model for delivering game-changing medicines to patients. Our people are passionate and proven cancer biologists and drug discovery chemists. As an organization, we believe that our entrepreneurial spirit and nimbleness, and commitment to foster innovation, teamwork and excellence is what sets us apart.



## Leadership



### **Yujiro S. Hata, Co-Founder and Chief Executive Officer**

Yujiro is an entrepreneur with over 20 years of experience building companies that have delivered innovative therapies to patients. Since August 2015, he has served as co-founder and Chief Executive Officer at IDEAYA Biosciences. From 2014 to August 2015, Yujiro served as Chief Operating Officer at immuno-oncology companies Flexus Biosciences and its spinout FLX Bio, which he joined as a startup and oversaw all business operations, corporate strategy and M&A and licensing through its acquisition by Bristol-Myers Squibb in April 2015. From 2010 through the approvals of Kyprolis™ and Stivarga™ and its acquisition by Amgen in October 2013, he served as Vice President, Corporate Development and Strategy at Onyx Pharmaceuticals (NASDAQ: ONXX), where he held various leadership roles, including head of strategy and strategic asset management, and head of transactions. From 2002 to 2010, Yujiro served as Vice President, Senior Vice President, and Chief Business Officer at Enanta Pharmaceuticals (NASDAQ: ENTA), which he joined as a startup and helped build to a public company. He formed the Abbott-Enanta alliance and served on its joint steering committee that oversaw the NS3-4A protease inhibitor contained in HCV blockbuster VIEKIRA PAK™. He earlier served in roles at McKinsey, ImClone and Columbia Medical School.

Yujiro obtained his MBA at Wharton as a Henry J Kaiser recipient and did his undergraduate studies in chemistry at Oxford University and Colorado College. He serves as an Executive-in-Residence at 5AM Ventures, and on the Board of Directors of Xencor (NASDAQ: XNCR) and the Board of Visitors of the Moores Cancer Center at UCSD.



### **Jeffrey Hager, Ph.D., Co-Founder and Senior Vice President, Head of Biology**

Jeff brings over 20-years of experience in tumor biology, cancer pharmacology, & oncology discovery in both the academic and industrial sectors. Since November 2015, he has served as co-founder and Senior Vice President and Head of Biology at IDEAYA Biosciences. Prior to IDEAYA, he was VP of Biology at Seragon Pharmaceuticals, which was acquired by Roche/Genentech for up to \$1.7 billion, where he oversaw all in vitro and in vivo biology and pharmacology that led to the discovery of 2 novel clinical stage selective estrogen receptor degraders (SERDs) developed as treatment for hormone receptor positive breast cancer. Previously, Jeff was Senior Director at Aragon Pharmaceuticals which was acquired by Johnson & Johnson for up to \$1 billion. At Aragon, on top of the discovery work that led to the SERD compounds and the Seragon spinout post J&J acquisition, his team also delivered the preclinical pharmacology package in support of clinical development for the novel anti-androgen ARN-509 which is now in two Phase III studies as well as discoveries into mechanisms of acquired resistance to the 2nd generation anti-androgens enzalutamide and ARN-509. Previously, he was Associate Director of Biology at Apoptos, Inc. and before that a Principal Scientist and Head of Cancer Pharmacology at Kalypsys, Inc.

He did graduate studies at both Princeton and University of California at Berkeley, the later from which he received a PhD in molecular and cell biology. He was a postdoctoral fellow and staff scientist at the University of California at San Francisco and is an author of publications in Science, Nature Genetics, Cancer Cell, Cancer Research and Cancer Discovery.









Dr. Kowalczykowski's research programs focus on the molecular mechanisms of recombinational DNA repair; the function of homologous recombination in the maintenance of genomic integrity.

**John Petrini, Ph.D.**

**Member, Sloan Kettering Institute, Memorial Sloan Kettering Cancer Center**

John Petrini, Ph.D., is a Member in the Molecular Biology Program of the Sloan Kettering Institute at the Memorial Sloan Kettering Cancer Center in New York, and the founding Director of the Functional Genomics Initiative at MSKCC. Dr. Petrini received his Ph.D. in 1988 from the University of Michigan Medical School, Ann Arbor, MI, and conducted postdoctoral work at the Dana Farber Cancer Institute at the Harvard Medical School. He began his independent research career at the University of Wisconsin in 1994, and was recruited to MSKCC in 2002. The work in Dr. Petrini's lab is focused on the DNA damage response, a network of functions comprising DNA damage signaling, DNA repair, and DNA damage dependent cell cycle regulation. His laboratory employs yeast and mice to undertake genetic, molecular biological, and biochemical analyses of the pathways in eukaryotic cells that are responsive to chromosome breaks

**Elizabeth Swisher, M.D.**

**Professor, University of Washington**

Elizabeth Swisher, M.D., is a gynecologic oncologist and Professor of Gynecologic Oncology and adjunct Professor of Medical Genetics at the University of Washington in Seattle. Dr. Swisher's research focused on understanding the role of the BRCA-Fanconi anemia pathway in ovarian cancer and how defects in DNA repair can be exploited in the therapy and prevention of ovarian carcinoma. She is co-Leader of Stand up to Cancer's first Ovarian Cancer Dream Team. She is principal investigator on several PARP inhibitor therapeutic trials and collaborates on the translational research for numerous other clinical trials in ovarian and other cancers.

## **IMMUNOLOGY**

**Lawrence Fong, M.D.**

**Co-Leader, Cancer Immunotherapy Program, and  
Efim Guzik Distinguished Professor in Cancer Biology at UCSF**

Dr. Lawrence Fong is Co-Leader, Cancer Immunotherapy Program, and Efim Guzik Distinguished Professor in Cancer Biology at the Helen Diller Cancer Center at UCSF. Dr. Fong's laboratory is focused on how the immune system interacts with cancer, investigating how immunotherapies such as immune checkpoint inhibitors and cancer vaccines can enhance anti-tumor immunity in patients. Dr. Fong is also co-director and medical director of the Parker Institute of Cancer Immunotherapy (PICI) at UCSF. He has served on National Cancer Institute (NCI) Steering Committees for Genitourinary Cancer (GUSC) and Investigational Drugs (IDSC)-Immunotherapy Task Force, and is a senior editor for Cancer Immunology Research. Dr. Fong is also the site principal investigator at UCSF for the NCI-sponsored Cancer Immunotherapy Trials Network (CITN). Dr. Fong received his B.A. degree from Columbia University and his M.D. degree from Stanford University, also completing an oncology fellowship at Stanford before joining the medical staff there in 1999. He joined UCSF in 2002.



**Chris Goodnow, Ph.D.**  
**Deputy Director, The Garvan Institute of Medical Research**  
**Member, National Academy of Sciences**

Chris Goodnow, Ph.D. is The Bill and Patricia Ritchie Foundation Chair and is NHMRC Australia Fellow, Head of the Immunogenomics lab and Deputy Director at the Garvan Institute of Medical Research in Sydney, Australia. He trained in veterinary medicine and surgery, immunochemistry, and immunology at the University of Sydney and in molecular biology at Stanford University. After doctoral studies begun at the Walter and Eliza Hall Institute in Melbourne and performed at Sydney University, he joined the faculty of Stanford University Medical School and the Howard Hughes Medical Institute in 1990. To pioneer large-scale genetic analysis of the immune system, he joined the faculty at the Australian National University in 1997 as Professor and Director of the Medical Genome Centre, leading its development into a Major National Research Facility, the Australian Phenomics Facility. He is also President of the Australasian Society for Immunology 2015-2016. His research contributions have been recognized by a number of awards, including American Association of Immunologists (AAI) Pharmingen Investigator Award, AAI Distinguished Lecturer, Australasian Society for Immunology Burnet Orator, Gottschalk Medal, Health Minister's Prize, Centenary Medal, Ramaciotti Medal, GSK Award for Research Excellence, Fellow of the Australian Academy of Science, Fellow of the Royal Society, and Member of the US National Academy of Sciences.

**Richard J. Ulevitch, Ph.D.**  
**Scripps Research Institute, Chairman Emeritus, Department of Immunology**  
**Venture Partner, 5AM Ventures**

Richard J. Ulevitch, Ph.D., joined 5AM Ventures in February 2008 as a Venture Partner. Previously he was Chairman of 5AM's Scientific Advisory Board while serving as Professor and Chairman of the Department of Immunology at The Scripps Research Institute in La Jolla, California. He remains as Professor and Chairman Emeritus at The Scripps Research Institute. For nearly three decades, Dr. Ulevitch has performed research to understand the role of the immune system in human disease. He serves as a scientific advisor to Aravis Ventures, a European life science venture capital fund and previously served as an advisor to the Lombard Odier Immunology Fund, where he evaluated numerous biotechnology companies over a fifteen-year span. Dr. Ulevitch serves or has served on the Scientific Advisory Boards of Arvinas, Biodesy, Bird Rock Bio, Cidara (NASDAQ: CDTX), Cleave, Envoy (acquired by Takeda), Ideaya, Igenica, Ikaria (acquired by Mallinckrodt), Pulmatrix (NASDAQ: PULM) as well as on the Board of PhaseRx. Dr. Ulevitch received an A.B. from Washington and Jefferson College and a Ph.D. in Biochemistry from the University of Pennsylvania. Dr. Ulevitch is based in the Menlo Park, CA office.

## **DRUG DISCOVERY**

**Paul J. Reider, Ph.D.**  
**Faculty, Princeton University**

Paul J. Reider, Ph.D., joined the faculty of Princeton University in 2008 where his research is focused on new drugs for Malaria, TB and other neglected diseases.



During his 28 years in the pharmaceutical industry he has directly contributed to the discovery, identification, development or registration of 14 approved drugs. From 2002-2007 he was at Amgen as Worldwide Head of Chemistry Research & Discovery. He received his A.B. (Psychology) at New York University and his Ph.D. (Organic Chemistry) at the University of Vermont. After post-doctoral research as an NIH National Research Service Awardee at Colorado State University. Paul joined Merck as a Senior Research Chemist in Process Chemistry where he remained for 22 years. Prior to joining Amgen, he was Vice President of Process Chemistry at Merck. Paul is the winner of numerous awards, most recently, he was named the winner of the 2011 National Academy of Sciences' *Award for Chemistry in Service to Society*. He's served on the visiting committees for Harvard University, California Institute of Technology, and the University of California, Santa Barbara, and on the Editorial Advisory Boards of the Journal of the American Chemical Society, the Journal of Organic Chemistry, and Organic Letters. He is also a Senior Editor of Current Opinion in Drug Discovery & Development, and Science of Synthesis. In 2011, Paul joined the Scientific Advisory Boards of the Medicines for Malaria Venture and the TB Alliance.

**Laura Shawver, Ph.D.**  
**CEO, Cleave Biosciences**

Laura Shawver, Ph.D., is an experienced Biotech executive with more than 25 years of experience in the development of small molecule drugs for cancer and other diseases. Prior to joining Cleave Biosciences as Chief Executive Officer and driving the \$54M Series A financing, she was an Entrepreneur in Residence for 5AM Ventures beginning October 2010. From 2002 - 2010, Dr. Shawver was the Chief Executive Officer of Phenomix Corporation where she also served on the Board of Directors. Previously, Dr. Shawver was the President of SUGEN Inc. from 2000 after holding various positions since 1992. SUGEN focused on understanding key molecular pathways of cancer cells and developed the drugs Sutent™ and Palladia™. The company was acquired by Pharmacia in 1999. Prior to SUGEN, she was employed at Berlex Biosciences.. She is an active member of the American Association for Cancer Research and also a member of American Society for Clinical Oncologists. Dr. Shawver is the Founder of The Clarity Foundation, a nonprofit organization providing access to molecular profiling for ovarian cancer patients to improve their treatment options. Shawver received her PhD in Pharmacology and a BS degree in Microbiology, both from the University of Iowa.

## Board of Directors

**John D. Diekman, Ph.D., Chairman of the Board**  
**Founding Partner, 5AM Ventures**

John D. Diekman, Ph.D. is a Founding Partner of 5AM Ventures. Previously Dr. Diekman was Chairman and CEO of Affymetrix, and Chairman and Managing Director of Affymax. Dr. Diekman currently serves as Chairman of IDEAYA as well as on the Boards of Igenica and Wildcat. He is a Charter Trustee of Princeton University and a former Trustee of The California Institute of Technology and of The Scripps Research Institute, where he served as Chairman. He serves on the Schaeffer Center for Health Policy and Economics Advisory Board at the University of Southern California. He is an Honorary Officer of the Order of Australia.



Dr. Diekman received a B.A. in Chemistry from Princeton University and a Ph.D. in Chemistry from Stanford University. Dr. Diekman holds an Honorary Degree of Doctor of Laws from Monash University.

**Timothy Shannon, M.D., Board Member**  
**General Partner, Canaan Partners**

Timothy Shannon, M.D., is a General Partner at Canaan Partners where he focuses on early stage biopharmaceutical companies. He is chairman of the board of Arvinas and Spyryx Therapeutics and is a director at NextCure, Vivace, and CytomX (CTMX, IPO 2015). Prior successful companies include Civitas Therapeutics (acquired by Acorda) and Novira Therapeutics (acquired by J&J).

Dr. Shannon previously was president and chief executive officer of CuraGen, a publically traded biopharmaceutical company. CuraGen merged with Celldex Therapeutics in 2009 where Dr. Shannon served on the board. Prior to that he was senior vice president of global medical development for Bayer's Pharmaceutical Business Group. Dr. Shannon began his career as assistant professor of the pulmonary and critical care medicine at Yale University School of Medicine, received his M.D. from the University of Connecticut and his B.A. from Amherst College.

**Terry Rosen, Ph.D., Board Member**  
**Chief Executive Officer, Arcus Biosciences**

Terry Rosen, Ph.D. is currently the CEO of Arcus Biosciences. He previously served as CEO of Flexus Biosciences, which was acquired by BMS in 2015. Prior to co-founding Flexus in October of 2013, Terry served as Vice President, Therapeutic Discovery (TD) at Amgen and as the site head for Amgen South San Francisco, having joined Amgen with the acquisition of Tularik in 2004. Terry held several executive positions at Tularik, including Executive Vice President, Operations, Vice President, Research Operations, and Vice President, Medicinal Chemistry. He has also held scientific and management positions at Pfizer and Abbott Laboratories. Terry serves on the Salk Institute Board of Trustees, the leadership committees of the University of Michigan Undergraduate Research Opportunity Program and Life Sciences Institute, the Berkeley Chemistry Advisory Board, the Caltech Biology and Biology and Biological Engineering Chair's Council and the California Life Sciences Association Board. He holds a B.S. in Chemistry from the University of Michigan and a Ph.D. in Organic Chemistry from the University of California, Berkeley.

**Jeffrey Stein, Ph.D., Board Member**  
**Chief Executive Officer, Cidara Therapeutics**

Jeffrey Stein, Ph.D., has been the President and Chief Executive Officer of Cidara Therapeutics since 2014. Prior to joining Cidara, Dr. Stein was Chief Executive Officer of Trius Therapeutics from its founding in 2007 until its acquisition by Cubist Pharmaceuticals in September of 2013. Dr. Stein was also the founding Chairman and President of the Antibiotics Working Group. Previously, Dr. Stein was a Venture Partner and Kauffman Fellow with Sofinnova Ventures and opened the firm's San Diego office in 2005. Prior to joining Sofinnova, Dr. Stein was co-founder and Chief Scientific Officer of Quorex Pharmaceuticals which was acquired by Pfizer Pharmaceuticals in 2005. He has also served as a Principal Scientist with Diversa Corporation and the Agouron Institute.



Dr. Stein conducted his postdoctoral research as an Alexander Hollaender Distinguished Postdoctoral Fellow at the California Institute of Technology and his graduate work as a NASA Graduate Student Researcher Fellow at UCSD.

**Yujiro S. Hata, M.B.A., Board Member**  
**CEO, IDEAYA Biosciences**

**Peter Worland, Ph.D., Board Observer**  
**Corporate Vice President, Integrative Research Development, Celgene**

Peter Worland, Ph.D., is currently Corporate Vice President of Integrative Research Development, at Celgene where he identifies collaborations (academic and corporate) that extend the reach of Celgene's internal research programs and development pipeline. He has been integral to creating numerous collaborations over the last 9 years at Celgene and is continually working to maximize the value of existing partnerships and identify new potential partnerships complementing the Celgene strategic plan. Prior to this, Peter had responsibility for Experimental Therapeutics within the Discovery group. Prior to joining Celgene, Peter ran the Discovery Oncology effort at Millennium, led Discovery programs at Pharmacia and managed academic collaborations at the European Institute of Oncology, Milan and built the Pharmacology group and led Discovery programs at Mitotix in Cambridge, MA. After completing his Ph.D. in the Clinical Pharmacology Unit, Department of Medicine, University of Melbourne, Australia, Peter worked as a Visiting Scientist at the NCI for a number of years before entering industry.

**Edward Hu, Ph.D., Board Observer**  
**Founding Partner, WuXi Healthcare Ventures; CFO and CIO, WuXi AppTec**

Edward Hu, Ph.D., M.B.A. is currently CFO and CIO at WuXi AppTec, Partner at WuXi Healthcare Ventures. Mr. Hu manages the company's finance, investments, mergers and acquisitions, joint ventures, and new business and capability building. In addition, Mr. Hu oversees WuXi Healthcare Ventures' investment activities and portfolio management. Mr. Hu previously served as WuXi's COO and CFO until April 2014. Prior to joining WuXi in August 2007, Mr. Hu was SVP and COO at Tanox, responsible for operations, finance, IT, project management and strategic planning, and managed the acquisition of Tanox by Genentech in 2007. He also held positions at Merck & Co., Inc. as a Senior Financial Analyst and later in Business and Financial Planning at Biogen, Inc., where he managed the business planning of Biogen's R&D and clinical operations organizations, and provided project planning and analysis support to key drug development project teams. Mr. Hu completed his Ph.D. work, all but dissertation, in Biophysics and Biochemistry at Carnegie Mellon University, where he also received his M.B.A.

**Hannah H. Chang, M.D., Ph.D. Board Observer**  
**Associate, 5AM Ventures**

Hannah H. Chang, M.D., Ph.D. is an Associate at 5AM Ventures. She currently serves as an Observer on the Boards of Biodesy, Cleave Biosciences, Crinetics Pharmaceuticals and IDEAYA Biosciences. Previously, she was a Project Leader at The Boston Consulting Group where she was a member of the



Health Care and Strategy Practices. Before joining 5AM, Dr. Chang was an M.D./Ph.D. Physician Scientist Fellow in the Harvard-MIT Health Sciences and Technology Program and an Ashford Fellow. She completed an internship in Internal Medicine at the Beth Israel Deaconess Medical Center and pursued residency in Ophthalmology at the Massachusetts Eye and Ear Infirmary. Her Ph.D. work at Harvard focused on the dynamics of mammalian stem cell differentiation and was published Nature. She holds a B.A. in Chemistry from Princeton University, a Ph.D. in Biophysics from Harvard University and an M.D. from Harvard Medical School. Dr. Chang is based in the Menlo Park, CA office.

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