Richard D. Purcell **richard.purcell@dnahealthlink.com**
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Strategic Planning & Business Development Executive

A strategic leader with experience and vision to bring new therapies to the market, I bridge the domains of drug development, health information technology, finance, marketing, and business operations to build innovative life science companies. In addition to my entrepreneurial management skills, I have extensive experience in operations business development, management, technology search and evaluation, licensing, and mergers & acquisitions. With a focus on data-driven solutions, I am a seasoned management consultant with a proven track record in building successful businesses in the biotechnology, drug development, healthcare, software, and medical marketing sectors. My greatest strength is creating and executing strategic plans that drive corporate value and improve the lives of patients.

DNA Healthlink, Inc. (2005 - Present)
President
My consulting firm, DNA Healthlink, Inc., specializes in emerging biopharmaceutical and technology companies. I provide a range of consulting services to early-stage and turn-around biopharmaceutical companies including new business and regulatory strategy, hands-on operations management, due diligence, and facilitation of M&A and licensing deals. Through DNA Healthlink, I currently oversee the strategic planning, business development and M&A, and clinical development programs at two publically-traded companies, RespireRx Pharmaceuticals and Generex Biotechnology.

Generex Biotechnology (OTCQB:GNBT) (January 1, 2017 – Present)
Executive Vice President, Research & Development
Generex Biotechnology, Inc., is an integrated life science holding company with end-to-end healthcare solutions for patient centric care from rapid diagnosis through delivery of personalized therapies. Generex has been a publicly traded company for over 20 years (Incorporated in 1997) and continues to be traded on the OTCQB (GNBT). As part of the company's executive team, we have completed a strategic reorganization and operational transformation of the entire corporate structure, including an M&A strategy that has enabled the company to transform from and research driven biotech to a revenue generating healthcare company.

In the effort to transform and rebuild the company, I lead the technology search and acquisition process and coordinate activities for global licensing and business development, while overseeing the clinical development efforts across the organization to advance the mission of Generex. Additionally, I have worked with the CEO to define the corporate strategy and communicate to shareholders through public relations efforts.

BDM&A
Olaregen Therapeutix – CTP for wound care
Regentys Corporation – *de novo* 510k for ulcerative colitis
NuGenHealth – SaaS system for remote patient monitoring
DME-IQ – SaaS system for orthopedic inventory management & billing
ALTuCELL – Microencapsulation & cellular therapy company
Reorganization of Antigen Express to NuGenerex Immuno-Oncology for public spin out

NuGenerex Immuno-Oncology (NGIO)
Executive Vice President, Research & Development (January 1, 2017 – Present)
Chief Operating Officer (2012 – 2014)
NuGenerex Immuno-Oncology (formerly Antigen Express) ws a subsidiary of Generex Biotechnology with a patented immune system modulation technology called Ii-Key. A primary focus of my work with NGIO has been the spin out of the subsidiary as a separate public company, which has been accomplished in preparation for a listing on a major exchange. To accomplish the spin out, we signed a research agreement with Merck to conduct a Phase II trial of AE37 (Ii-Key-HER2/neu) in combination with Keytruda for the treatment of triple negative breast cancer, which is ongoing.

From 2012 to 2014, I was hired to rescue the AE37 breast cancer clinical development program,

which was successfully completed in 2016. Since 2017, I have been part of the executive management team charged with executing a turnaround, effect a corporate reorganization, and initiate a pharma partnering effort. I currently oversee the research and development, and corporate strategy for NGIO, which has been spun-out of Generex as a separate, publicly reporting company to be listed on Nasdaq. NGIO has completed a Phase II study of its lead compound AE37 immunotherapeutic vaccine for the prevention of recurrent breast cancer, the company is currently conducting a Phase II trial combining AE37 with Keytruda (Merck) for the treatment of triple negative breast cancer. Additionally, are developing a COVID-19 vaccine with the Ii-Key immunomodulating vaccine technology.

Patent Application
Multi-Targeting, Multi-Functional Selective Immune-Regulatory Ii-Key Peptide Vaccines For Prophylaxis and Long-Term Protection Against SARS-CoV-2 Infection and COVID-19 Disease Without Antibody Dependent Enhancement (ADE), and Related Compositions and Methods for the Design, Construction, Formulation and Use of Anti-SARS-CoV-2 Ii-Key Hybrid Peptide Vaccines
63/130,822. 27 December 2020

RespireRx Pharmaceuticals (OTCQB:RSPI) (October 2014 – December 2020)
Senior Vice President Research & Development
RespireRx is a publicly traded pharmaceutical company developing novel drugs for the treatment of respiratory disorders. I am leading the clinical development and strategic partnering efforts for the company's cannabinoid and ampakine R&D programs. I am responsible for all facets of developing cannabinoid pharmaceuticals from manufacturing to formulation to regulatory affairs to clinical trial design and management. We have completed a Phase IIb study of dronabinol (Delta-9-THC) for the treatment of sleep apnea, and we are developing cannabinoid formulations to improve product performance. We are also developing ampakine compounds to promote improvements in spinal cord injury, pain management, and neurological disorders like ADHD, anxiety disorders, and autism.

Compositions and Methods for Treating Spinal Cord Injuries. Lippa, A., Purcell, R., USPTO Patent application #63033818. June 2020.

Oncolytic Properties of Ampakines *In Vitro*. Daniel Radin, Richard Purcell, Arnold Lippa. Anticancer Research. 2018 Jan;38(1):265-269.

Tarps Differentially Affect the Pharmacology of Ampakines. Daniel P Radin, Yong-Xin Li, Gary Rogers, Richard Purcell, Arnold Lippa. Biochem Pharmacol. 2018 Aug;154:446.

Stargazin Differentially Modulates Ampakine Gating Kinetics and Pharmacology. Daniel P Radin, Yong-Xin Li, Gary Rogers, Richard Purcell, Arnold Lippa**.** Biochem Pharmacol. 2018 Feb;148:308-314.

Ampakines Attenuate Staurosporine-induced Cell Death in Primary Cortical Neurons: Implications in the 'Chemo-Brain' Phenomenon. Daniel P Radin, Gary Rogers, Kimberley E Hewitt, Richard Purcell, Arnold Lippa. Anticancer Res. 2018 Jun;38(6):3461-3465.

Effects of Chronic Systemic Low-Impact Ampakine Treatment on Neurotrophin Expression in Rat Brain. Daniel Radin, Steven Johnson, Richard Purcell, Arnold Lippa. Pharmacother. 2018 Sep;105:540-544.

Acute Ampakine Treatment Ameliorates Age-Related Deficits in Long-Term Potentiation. Daniel Radin, Sheng Zhong, Richard Purcell, Arnold Lippa.Biomed Pharmacother. 2016 Dec;84:806-809.

***Antagonism of Remifentanil-Induced Respiratory Depression by CX1739 in Two Clinical Models of Opioid Induced Respiratory Depression (OIRD*).** Andrew Krystal, MD, John Greer, PhD, Dariusz Nasiek, MD, Eva Krusinska, PhD, Arnold Lippa, PhD, Richard Purcell. Poster presented at Sleep 2017 the Annual Meeting of the American Academy of Sleep Medicine.

Brain Vacuolation Resulting from Administration of the Type II Ampakine CX717 is an Artifact Related to Molecular Structure and Chemical Reaction with Tissue Fixative Agents. Richard Purcell, Gary Lynch, Christine Gall, Steven Johnson, Zhong Sheng, James Cook, Michael Rajesh Stephen, Robert H. Garman, Bernard Jortner, Brad Bolon, and Arnold Lippa. Toxicol Sci. 2017 Dec 15.

DNA HEALTHLINK CLIENTS

intelliSanté Corporation (2011 - 2017)
President, Director
As the President of intelliSanté Corporation, a privately held software and informatics company developing software systems and mobile Apps for healthcare, we built and implemented our HIPAA compliant, cloud-based data platform to integrate primary care and mental health services, with emphasis on patient activation & communication, collaborative care and patient self-management, and data analytics for outcomes research.

Winning the Healthcare Revolution with Technology for Care Coordination, Collaboration & Communication. Published on *Healthcare Intelligence Network. September 8, 2015*

Freedom to Feel Good - Patient Self-Management Through Collaborative Health Technology. **Presentation to the Annual Meeting of the NJ Health Information Management Systems Society. October 2016.** Results from a pilot program that utilized intellisanté software systems for patient self-management and collaborative care, integrating mental health, medication therapy management, metabolic monitoring, and health coaching to achieve positive health outcomes. The results demonstrated clinically significant weight loss, enhanced medication compliance, improvements in cardiovascular (blood pressure) and metabolic (glucose) measures, and overall patient satisfaction with care.

US Patent Application #62003619, Filed May 2014. *Concepts for Promoting Health & Wellness and Engagement Therein.*

Hackensack Meridian Health (2012 - 2016)
I consulted on a wide range of projects for Hackensack Meridian Health, one of the largest healthcare systems in New Jersey. Some projects include evaluation and reorganization of clinical research operations, developed department level strategic plans for clinical research, and wrote the Oncology Research Plan for Hackensack Meridian Cancer Center.

Cynvec LLC – President & COO (2004 – 2012) **Director** (2004 - 2017)
Cynvec was an Aurora Capital company. Cynvec is a development stage biotechnology company focused on the commercial development of our lead product CYN 101 for the treatment, diagnosis, and monitoring of cancer. CYN 101 is a sindbis virus-based vector that explicitly targets tumors without affecting normal cells. The company is entering human clinical trials for the treatment of metastasized tumors, especially in ovarian cancer.

Xintria Pharmaceuticals – Chief Operating Officer (2006 – 2008)
Xintria Pharmaceuticals is an Aurora Capital company. In my roles as COO, I coordinated and oversaw all aspects of pre-IND and clinical development programs for Xintria, including technology transfer, production, manufacturing, formulation, and regulatory compliance for CMC.

I also designed and managed the preclinical and clinical development programs for developing a traditional Chinese medicine to treat cardiovascular and metabolic diseases.

OTHER EXPERIENCE

ClinPro, Inc. (2000 – 2005)
President
Prior to founding DNA Healthlink, I was President of ClinPro, Inc., a mid-sized clinical research organization (CRO). ClinPro was formed through the merger of three niche, family-owned CROs. Upon joining the company, I integrated human resources, systems, and business processes, and had responsibility for the company's business development, strategic planning, sales, and IT operations. We repositioned the company as a technology solutions provider with an oncology focus and grew the business by 50%. As a result of the integration and business development efforts, the company was acquired by a private equity firm.

SCP Clinical Programs (1994 – 2000)
General Manager
Through the late 1990's, I was Corporate Vice President and General Manager of SCP Clinical Programs, a division of SCP Communications. I founded SCP Clinical Programs as a CRO specializing in Phase IIIb and Phase IV clinical research studies and built a $12 million business with a 35% EBITDA. At SCP, we designed and managed a number of clinical programs for such blockbuster drugs as Avandia, Accolate, Meridia, and Tequin. We helped launch Lipitor through design, planning, and management of the Lipid Treatment Assessment Project (L-TAP), which is included in the NCEP Guidelines for cholesterol management (Arch Intern Med. 2000;160:459-467). In addition, I worked on the start-up of our sister company, Medscape.

Kline & Company (1987 – 1993 & Present)
Business Manager International Life Science Consulting Practice
I previously headed the Life Sciences Consulting Group for Kline and Company, where we conducted market, technology and business analysis for the commercial development of pharmaceutical and biotechnology products for therapeutic and diagnostic applications. I still provide ad hoc consulting services on technical evaluation for M&A activities.

Hoffmann-La Roche (1985 – 1987)
Research Scientist, Protein Structure/Function Laboratory
At Roche, I conducted primary research on HIV regulatory proteins and interleukin-2.

Purification and Characterization of Recombinant *rev* Protein of HIV-1. Carlo M. Nalin, Richard D. Purcell, Douglas Antelman, Dale Mueller, Lorraine Tomchak, Bogda Wegrzynski, Eileen McCarney, Voldemar Toome, Richard Kramer, and Ming-Chu Hsu. *Proceedings of the National Academy of Science. Vol. 87, October,1990*

Structural and Functional Characterization of HIV-1 *tat* Protein. Steven Ruben, Ann Perkins, Richard Purcell, Keith Joung, Rey Sia, Robert Burghoff, William A. Haseltine, AND CRAIG A. ROSEN. *Journal of Virology. January,1989, pp 1–8*

Integrated Genetics (Now Genzyme) (1983 – 1985)
Scientist, Protein Engineering Department
I started my career as a molecular biologist, where I developed and patented a second generation TPA with increased half-life.

Biochemical and In-vivo Analysis of De-glycosylated and Semi-glycosylated Tissue Plasminogen Activators
Journal of Cellular Biochemistry. Supplement 12B, 297, 1988

Patents: Semi-glycosylated Variants of TPA With Increased Half-life
US #5,344,773 European #85306957.3, Japan #1-214-13

EDUCATION

Princeton University, Bachelor of Arts in Biochemical Sciences, 1983
Thesis: Characterization of Nerve Growth Factor Receptor
Goal Keeper, Varsity Soccer (1978 - 1981)
Goalkeeper Coach, Women's Varsity Soccer (1982, NCAA Final 8, All-American Keeper)
Rutgers Graduate School of Management – Marketing & Finance

A COMMITMENT TO ADVANCING EDUCATION

For the last 10 years I have focused my interests on advancing educational paradigms to change the face of learning. As an Adjunct Professor at Monmouth University, I implemented a seminar-style class that offered an integrated, interactive, multi-disciplinary approach to help college students prepare for the real world. I am currently active in building a new network of public charter schools in Plainfield, Patterson, and Asbury Park, NJ, offering new learning opportunities, including live, remote classrooms for kids K-12 in low-performing and underserved school districts.

College Achieve Public Schools (CAPS)
Member, Board of Trustees (2017 to present) Chairman (2020 to 2023)

College Achieve Public Schools is a network of public charter schools in underserved areas of NJ with a central mission to prepare its students to excel and graduate from the top colleges and universities in the nation.

We - the Board, teachers, parents, and administrators - pledge to achieve this mission by discovering and developing each child's gifts and talents. We believe a college education is this century's passport to the American Dream, and we are determined to offer our students every opportunity to achieve it.

Monmouth University, Adjunct Professor, School of Science (2011 - 2019)

I built and taught a course, *The Business of Biotechnology from the Bench to the Market (BY360).*

Tomorrow's biotechnology leaders require a breadth of cross-functional knowledge to face the scientific, regulatory, and financial challenges for developing biotech companies in the 21st century. BY 360 provided students with a strategic overview of the business of biotechnology, exploring the integration of science, technology, the regulatory framework, financial requirements, and market forces that drive the industry. The course introduced students to the basics of molecular biology and the regulatory and financial requirements for drug development, placing emphasis on real-world application and the challenges of bringing new biotechnology drugs to market for the treatment of human disease.

In BY 360, we took a different approach to teaching and learning. We used an interactive discussion model that is relaxed and informative, encouraging students to participate in class discussions and team exercises. Rather than sitting in a lecture hall and reading from a book, we sit around a boardroom table and utilize current news, market reports, and case studies to advance learning through two-way communication. The students formed teams, imagined a treatment for a disease of their choice, and built a fictitious company that the student executives presented at a Biotech Showcase final judged by real pharmaceutical and venture capital executives from the industry in a "Shark Tank" setting. Over eight years, we educated over 150 biology and health science majors to prepare them for their post-graduate years.