BIOTECH BY THE LAKE 2022

INVESTOR SUMMIT

June 28, 2022

9:00 – 12:30 p.m.

Central Standard Time

Chemistry of Life Processes Institute

Oppenheimer & Co. Inc.

BioCentury, Inc.

SCHEDULE

WELCOME

9:00 a.m. Neil L. Kelleher, PhD, Walter and Mary E. Glass Professor of Molecular Biosciences; Professor of Chemistry; Professor of Medicine (Hematology & Oncology), Feinberg School of Medicine; Director, Chemistry of Life Processes Institute; Director, Northwestern Proteomics, Northwestern University

NORTHWESTERN FACULTY PRESENTATIONS

9:10 a.m. Shana Kelley, PhD, Neena B. Schwartz Professor of Chemistry and Biomedical Engineering; Member, Chemistry of Life Processes Institute, Northwestern University - *"Rare Cell Profiling for Therapeutic Discovery and Development"*

9:35 a.m. Elizabeth McNally MD, PhD, Elizabeth Ward Professor and Director, Center for Genetic Medicine, Northwestern University Feinberg School of Medicine - *"Using Genetic Signals to Develop New Protein Biologics for Muscle Disease"*

10:00 a.m. Peter Penzes, PhD, Director, Center for Autism and Neurodevelopment; Ruth and Evelyn Dunbar Professor of Psychiatry and Behavioral Sciences; Professor of Neuroscience, Pharmacology and Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine - *"Small-Molecule Kalirin Antagonists for the Treatment of Chronic Neuropathic Pain and Other Conditions"*

10:25 a.m. Samuel I. Stupp, PhD, Board of Trustees Professor of Materials Science, Chemistry, Medicine, and Biomedical Engineering; Director, Simpson Querrey Institute, Northwestern University - *"Supramolecular Peptide Medicines"*

PANEL DISCUSSION | HOT TOPICS IN PROTEIN THERAPEUTICS AND TECHNOLOGIES

10:50 a.m.

Karen Tkach Tuzman, PhD, Senior Editor, Head of Discovery and Preclinical Development, BioCentury, Inc. (Moderator)

Ginger S. Johnson, PhD, President, Commercial BioConsulting, Lumanity

Parag Mallick, PhD, Associate Professor of Radiology, Stanford University, Founder and Chief Scientist, Nautilus Biotechnology

Vini Mani, PhD, Head of Platform, ProFound Therapeutics

CORPORATE PRESENTATIONS

11:15 a.m. Arvind Rajpal, PhD, Vice President Large Molecule Drug Discovery - Antibody Engineering & Protein Chemistry, Large Molecule Drug Discovery, Genentech - *"Next-generation Antibody Therapeutics"*

11:40 a.m. Alan J. Russell, PhDM Vice President of Research, Biologic Therapeutic Discovery, Amgen Inc. – *"Solving the Grand Challenges of Protein Therapeutics"*

PANEL DISCUSSION | BIOTECH FINANCING AND INVESTING IN CHALLENGING DYNAMICS

12:05 p.m.

Jay Olson, CFA, Research Analyst, Oppenheimer & Co. (Moderator)

Margarita Chavez, JD, Managing Director, AbbVie Ventures

Stefan Loren, PhD, Managing Director, Healthcare Investment Banking, Oppenheimer & Co.

Scott Morenstein, Managing Director, BAAM - New York, Blackstone

William Slattery, Partner, Deerfield

PROGRAM

9:00 AM – WELCOME AND INTRODUCTION

Neil L. Kelleher, PhD (MODERATOR)
Walter and Mary E. Glass Professor of Molecular Biosciences; Professor of Chemistry; Professor of Medicine (Hematology & Oncology), Feinberg School of Medicine; Director, Chemistry of Life Processes Institute; Director, Northwestern Proteomics
Northwestern University

Neil L. Kelleher, PhD, is the director of the 50-person Proteomics Center of Excellence, the director of the Chemistry of Life Processes Institute, and a member of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University. His research is focused on the areas of top-down proteomics, natural product discovery, and cancer biology.

Neil and his team drive both technology development and applications of very high-performance mass spectrometry in proteomics and metabolomics. For bacteria and fungi, new platforms now feed compounds from the natural world into pharmaceutical pipelines. In proteomics, Neil has emerged as a leading voice in a calling for an analog of the Human Genome Project applied to human proteins. This effort is called the Human Proteoform Project and has recently been endorsed by research consortia. Neil is a serial entrepreneur with experience in spinning out four small companies, including a software shop providing the leading search engine used in >1,500 labs for "top-down proteomics". His contributions to the fields of proteomics and natural products chemistry have been recognized by multiple awards, including the Biemann Medal from the American Society for Mass Spectrometry, the Pfizer Award in Enzyme Chemistry from the American Chemical Society, a Searle Scholar Award, a Packard Fellowship, and the Allen Distinguished Investigator Award.

Basic metrics for the Kelleher academic operation are H-factor ~75; >350 total publications; 50 Ph.D. students; >150 postdoctoral trainees.

9:10 AM - NOTHWESTERN FACULTY PRESENTATION

"Rare Cell Profiling for Therapeutic Discovery and Development"

Shana Kelley, PhD
Neena B. Schwartz Professor of Chemistry and Biomedical Engineering;
Member, Chemistry of Life Processes Institute
Northwestern University

Shana is an internationally renowned researcher that has developed innovative and translational methods for tracking molecular and cellular analytes with unprecedented sensitivity. Her novel approaches integrate nanoscience, bioanalytical science, and engineering. The Kelley Research Group works in a variety of areas spanning biophysical/bioanalytical chemistry, chemical biology, and nanotechnology. Shana joined Northwestern University in 2021 as the Neena B. Schwartz Professor of Chemistry and Biomedical Engineering in the Department of Biochemistry and Molecular Genetics at Northwestern. She is also a member of the Chemistry of Life Processes Institute, International Institute for Nanotechnology, and Robert H. Lurie Comprehensive Cancer Center. Previously, she was a University Professor at the University of Toronto. Shana received her PhD from the California Institute of Technology and was an NIH postdoctoral fellow at the Scripps Research Institute.

Shana's work has been recognized with a variety of distinctions, including being named one of "Canada's Top 40 under 40", a NSERC E.W.R. Steacie Fellow, the 2011 Steacie Prize, and the 2016 NSERC Brockhouse Prize. She has also been recognized with a Gugglenheim Fellowship, the ACS Inorganic Nanoscience Award, the Pittsburgh Conference Achievement Award, an Alfred P. Sloan Research Fellowship, a Camille Dreyfus Teacher-Scholar award, an NSF CAREER Award, a Dreyfus New Faculty Award, and was also named a "Top 100 Innovator" by MIT's Technology Review.

Shana is an inventor of over 50 patents issued worldwide. She is a founder of four life sciences companies, GeneOhm Sciences (acquired by Becton Dickinson in 2005), Xagenic Inc. (acquired by General Atomics in 2017), Arma Biosciences, and CTRL Therapeutics. She serves as a Board Director for the Fight Against Cancer Innovation Trust (FACIT). She is an Associate Editor for ACS Sensors and an Editorial Advisory Board Member for the Journal of the American Chemical Society and ACS Chemical Biology.

Audience Q&A to follow the presentation.

9:35 AM - NOTHWESTERN FACULTY PRESENTATION

"Using Genetic Signals to Develop New Protein Biologics for Muscle Disease"

Elizabeth McNally MD, PhD
Elizabeth Ward Professor and Director
Center for Genetic Medicine
Northwestern University Feinberg School of Medicine

Elizabeth directs the Center for Genetic Medicine at Northwestern University's Feinberg School of Medicine in Chicago and is the Elizabeth J. Ward Professor of Genetic Medicine. She is a practicing cardiologist with expertise in cardiovascular genetics. As a clinician, she developed one of the first cardiovascular genetics clinics in the nation, integrating genetic information into cardiovascular care for patients and families with inherited forms of heart disease.

Her research team at Northwestern discovers genetic causes of cardiac disorders and then defines the mechanisms of how these genetic variants cause disease. By developing a deeper understanding of how these genetic mutations exert their effects, she is using these genetic signals to drive the development of new treatments for cardiovascular disease. She has a special interest in neuromuscular genetic diseases like muscular dystrophy since these disorders often have accompanying cardiovascular complications.

Elizabeth's translational accomplishments have been recognized through an award from the Burroughs Wellcome Foundation and as a recipient of a Distinguished Clinical Scientist Award from the Doris Duke Charitable Foundation. She serves on the Board of Directors for the Muscular Dystrophy Association and is currently the chair of the Association's Council on Basic Cardiovascular Sciences. She is a past president of the American Society for Clinical Investigation and past president of the Association of American Physicians. She received the Distinguished Scientist Award from the American Heart Association. In 2021, she was elected to the American Academy of Arts and Sciences and the National Academy of Medicine.

Audience Q&A to follow the presentation.

10:00 AM - NOTHWESTERN FACULTY PRESENTATION

“Small-Molecule Kalirin Antagonists for the Treatment of Chronic Neuropathic Pain and Other Conditions”

Peter Penzes, PhD
Director, Center for Autism and Neurodevelopment; Ruth and Evelyn Dunbar Professor of Psychiatry and Behavioral Sciences; Professor of Neuroscience, Pharmacology and Psychiatry and Behavioral Sciences
Northwestern University Feinberg School of Medicine

Peter is the Ruth and Evelyn Dunbar Professor of Neuroscience, Psychiatry and Behavioral Sciences, Pharmacology at Northwestern University Feinberg School of Medicine. He is also the founding director of Center for Autism and Neurodevelopment at NUFSM.

Peter is an expert in synapse biology and GEF/small GTPase signaling which he studied for over 25 years. He has published over peer-reviewed 100 articles on the molecular mechanisms underlying synapse dysfunction in neurological and psychiatric diseases, and discovered Kalirin, a promising therapeutic target. His research has been continuously funded by NIH. He also cofounded two biotech startups, Synaptomed and AlisBio.

Audience Q&A to follow the presentation.

10:25 AM - NOTHWESTERN FACULTY PRESENTATION

“Supramolecular Peptide Medicines"

Samuel I. Stupp, PhD
Board of Trustees Professor of Materials Science, Chemistry, Medicine, and Biomedical Engineering; Director, Simpson Querrey Institute
Northwestern University

Samuel is Board of Trustees Professor of Materials Science and Engineering, Chemistry, Medicine, and Biomedical Engineering at Northwestern University. He also directs Northwestern’s Simpson Querrey Institute for BioNanotechnology and the Center for

Bio-Inspired Energy Science, an Energy Frontiers Research Center funded by the U.S. Department of Energy.

Samuel's interdisciplinary research is focused on developing self-assembling supramolecular nanostructures and materials for functions relevant to renewable energy, regenerative medicine, and robotic soft matter. He is a member of the National Academy of Sciences, the National Academy of Engineering, the American Academy of Arts and Sciences, the Royal Spanish Academy, and the National Academy of Inventors. His awards include the Department of Energy Prize for Outstanding Achievement in Materials Chemistry, the Materials Research Society Medal Award, the International Award from The Society of Polymer Science in Japan, the Royal Society Award in Soft Matter and Biophysical Chemistry, and three national awards from the American Chemical Society: the ACS Award in Polymer Chemistry, the Ronald Breslow Award for Achievement in Biomimetic Chemistry, and the Ralph F. Hirschmann Award in Peptide Chemistry.

Audience Q&A to follow the presentation.

10:50 AM - PANEL DISCUSSION: HOT TOPICS IN PROTEIN THERAPEUTICS AND TECHNOLOGIES

Karen Tkach Tuzman, PhD (Moderator)
Senior Editor, Head of Discovery and Preclinical Development
BioCentury, Inc.

As Head of Discovery and Preclinical Research, Karen guides BioCentury's coverage of emerging biology and technologies. She has written extensively about immunology, synthetic biology and data science, covering innovative breakthroughs in industry and academia, and dissecting trends in company formation and investments around new science. She oversees BioCentury's Distillery feature, and coordinates activities and interactions with BioCentury's Scientific Advisory Board.

Karen joined BioCentury in 2015 after a postdoctoral research fellowship in Stanford University's Department of Chemical and Systems Biology. She holds a Ph.D. in Immunology from Weill Cornell Medicine and a B.A. in Molecular and Cell Biology from the University of California Berkeley. Outside of BioCentury, she is passionate about youth leadership development and land use policy.

Ginger S. Johnson, PhD (Panelist)
President, Commercial BioConsulting
Lumanity

In addition to her responsibilities as President of Commercial BioConsulting, Ginger leads core assessment and strategic consulting engagements, with special emphasis on CNS-related categories.

Previously, Ginger was the Director of Life Science Research at Chase Capital Partners (now CCMP Capital), a multi-billion-dollar global private equity and venture capital firm, where her research and investment activities focused on high-growth opportunities in new and emerging areas within the pharmaceutical, biotechnology and medical device industries. As Associate Director of the Center for Biotechnology at Northwestern University, Ginger helped to develop an innovative graduate program that combines the science and business of biotechnology. Ginger spent eight years in basic and applied scientific research, primarily in the field of Alzheimer's disease and other neurodegenerative diseases, at the National Institute of Mental Health and a start-up biotechnology company. Ginger has published multiple peer-reviewed articles and three issued patents.

Ginger earned her Bachelor of Science degree in Molecular Biology from University of Tennessee, a Doctorate in Molecular Biology from George Washington University in Washington, DC, and has completed graduate studies at the Kellogg Graduate School of Management at Northwestern University.in Washington, DC, and has completed graduate studies at the Kellogg Graduate School of Management at Northwestern University.

Parag Mallick, PhD (Panelist)
Associate Professor of Radiology, Stanford University
Founder and Chief Scientist, Nautilus Biotechnology

Parag is an Associate Professor at Stanford University. Originally trained as an engineer and biochemist, his research spans computational and experimental systems biology, cancer biology and nanotechnology. Parag received his undergraduate degree in Computer Science from Washington University in St. Louis. He then obtained his Ph.D. from UCLA in Chemistry & Biochemistry, where he worked with Dr. David

Eisenberg. He completed Post-Doctoral studies at The Institute for Systems Biology, in Seattle, WA with Dr. Ruedi Aebersold. Beyond studying fundamental disease mechanisms, his group has been pioneering novel approaches for enabling personalized and predictive medicine. Most recently, his group has been developing model-based and physics-based approaches to machine learning that enable learning over domains that span a wide range of time and length scales.

Parag is Founder & Chief Scientist of Nautilus Biotechnology, which has designed a large-scale, single-molecule proteomic analysis technology capable of delivering extreme sensitivity and scale.

Vini Mani, PhD (Panelist)
Head of Platform
ProFound Therapeutics

Vini joined Flagship Pioneering as an associate in 2019, working across the life cycle of emerging ventures in the life sciences. In her role, she works as part of the team of entrepreneurial scientists exploring new areas of biology to create and grow Flagship's first-in-class platforms, in roles ranging from scientific development, early stage strategy, and intellectual property. At Flagship Pioneering, Vini co-founded ProFound Therapeutics, leading the genesis and growth of the ProFoundry Platform. She was also involved in the early growth of Ring Therapeutics and contributed to the origination of other endeavors still in stealth.

Prior to joining Flagship, Vini co-founded and served as Director of Product Development at Adeo Health Science, a Boston-based startup focused on the prevention of allergy development in children. From her undergraduate work, Vini co-founded Knox Medical Diagnostics (now Aluna Health), with the mission to detect the onset of asthma flares.

Vini completed her doctoral studies in Immunology at Harvard Medical School. Her graduate work shifted the paradigm of T cell differentiation, uncovering a novel stage of T cell development termed "homeostatic conditioning". Vini's graduate work resulted in several high-impact publications in journals such as Science, Cell and Nature, and earned her several honors, including the Janeway Award from the American Association of Immunologists.

Vini holds a Ph.D. in Immunology from Harvard Medical School and a B.S. in Bioengineering with a Certificate in Entrepreneurship and Technology from the University of California, Berkeley.

Audience Q&A to follow the panel discussion.

11:15 AM - CORPORATE PRESENTER

"Next-generation Antibody Therapeutics"

Arvind Rajpal, PhD
Vice President Large Molecule Drug Discovery - Antibody Engineering & Protein Chemistry, Large Molecule Drug Discovery
Genentech

Arvind is vice president of Large Molecule Drug Discovery - Antibody Engineering and Protein Chemistry at Genentech. His research is focused on using protein engineering to modulate the biological mechanisms of diseases. In the past, it has included site-specifically conjugated ADCs, bispecific IgG, and cell therapies in oncology; conditionally activated molecules in cancer immunology and metabolic diseases; patient-derived neutralizing antibodies against infectious pathogens; and directed evolution of alternative scaffolds in neuroscience.

Arvind received his BA in Chemistry and Computer Science from Knox College and his Ph.D. in Chemistry from the University of California at Berkeley. He has worked in biotechnology startups and pharmaceutical companies like Bioren, Rinat-Pfizer and Bristol Myers Squibb. At Genentech, Arvind's group is responsible for discovery, optimization and progression of large molecules, i.e., antibodies, bispecifics, and similar modalities, into clinical development.

Audience Q&A to follow the presentation.

11:40 AM - CORPORATE PRESENTER

'Solving the Grand Challenges of Protein Therapeutics'

Alan J. Russell, PhD
Vice President of Research, Biologic Therapeutic Discovery
Amgen Inc.

Alan (Ph.D., Imperial College) is the Vice President of Research (Biologic Therapeutic Discovery) at Amgen Inc. Alan leads a global team of over 400 scientists in the discovery and development of large molecule therapeutics. Alan was the architect of Amgen's Biologics NExT strategy and is the leader of Amgen's Accelerated Digital Innovation focus on research. Alan is responsible for sustaining a robust, diverse talent pipeline and a culture of safety, teamwork, career development, inclusion and belonging. Rolling Stone Magazine has ranked Alan as #32 on the "Top 100 People Who Will Change America" list!

Previously, Alan was the Highmark Distinguished Career Professor in the Department of Chemical Engineering & the Director of the Disruptive Health Technology Institute at Carnegie Mellon University. From 2012-2016, in addition to his full-time role on the faculty of CMU, Alan served as the Executive Vice President and the Chief Innovation Officer of the Allegheny Health Network. Alan was also founder of Agentase LLC (acquired by FLIR/Teledyne), the CEO of BioHybrid Solutions, LLC, and Chairman of the Board of Directors of YouScript, Inc (acquired by Invitae) and Rheogene Inc (acquired by Invitrogen). He was the Founding Director of the McGowan Institute for Regenerative Medicine at the University of Pittsburgh, serving in that capacity from 2001-2011. Alan was the Founding President of the Tissue Engineering and Regenerative Medicine International Society and the Founding Co-Director of the Armed Forces Institute for Regenerative Medicine.

Alan served on Science Board to the Food and Drug Administration for a decade and chaired the 10-year scientific review of the Center for Devices and Radiologic Health, publishing the key "Protecting the core of CDRH regulatory science in the face of financial and strategic threats" report. Alan has served many scientific roles for the Department of Defense, including being a member of the Defense Health Board.

For the last 25 years, the Russell laboratory has been discovering what can be achieved by exploiting the rich interface of chemistry, biology and materials. Alan's work has impacted fields as diverse as chemical and polymer synthesis to tissue engineering and homeland defense. In a series of discoveries, Alan's laboratory has found how to meld the synthetic and biological worlds. Alan's work also led to a US Army "Greatest Invention" award and four technology company spin-outs.

Within the scientific community, Alan has participated on over 25 advisory boards. Since the outset of his career, he has received numerous prestigious awards for his contributions to research, teaching and public service. These awards include an R&D 100 Award – (R&D Magazine), the American Chemical Society's prestigious Pittsburgh Award, and the TERMIS Lifetime Achievement Award. Alan has given more than 500 National and International invited lectures, published over 250 peer-reviewed articles, and holds dozens of US and International patents.

Audience Q&A to follow the presentation.

12:05 PM - PANEL DISCUSSION: BIOTECH FINANCING AND INVESTING IN CHALLENGING DYNAMICS

Jay Olson, CFA (Moderator)
Research Analyst
Oppenheimer & Co.

Jay is Managing Director and Senior Analyst covering Biotechnology. Prior to joining Oppenheimer, Jay covered SMID-cap names and worked on the Large Cap Pharmaceuticals team at Goldman Sachs for 4 years after 4 years on the #1 II-ranked Large Cap Pharmaceuticals team at Sanford Bernstein. Prior to Wall Street, Jay spent 18 years in the pharmaceutical industry, working mostly for Pfizer in finance, marketing and business development. Jay received an MBA in Finance and an MS in Chemical Engineering both from MIT, and a BS in Chemical Engineering from Tufts University. He also holds the CFA designation.

Margarita Chavez, JD (Panelist)
Managing Director
AbbVie Ventures

Margarita is Managing Director at Abbvie Ventures. She brings over 20 years of dealmaking and company-building leadership, including over a decade of investing in early-stage biotech companies globally. Currently, Margarita serves as a director on the Boards of Carisma Therapeutics, Nitrase Biosciences, AmbAgon Therapeutics, Enthera Pharmaceuticals, Portera Therapeutics and ReAx Biosciences.

Prior to AbbVie Ventures, Margarita was a Director with Abbott Pharmaceutical Licensing & Acquisitions, and worked on the licensing of Elagolix, the acquisition of Solvay, Immuven, and the Lupron franchise. Before joining Abbott, Margarita practiced as a corporate and securities lawyer with the firm Brobeck Phleger & Harrison.

Beyond AbbVie Ventures, Margarita currently serves on the Board of P33 Chicago and the Advisory Board of Santa Clara University School of Law.

Margarita received her bachelor's degree from Santa Clara University and her law degree from Santa Clara University School of Law.

Stefan Loren, PhD (Panelist)
Managing Director, Healthcare Investment Banking
Oppenheimer & Co.

Stefan has worked with life sciences companies for over 25 years as a banker, sell and buyside analyst and fund manager. Stefan is currently a managing director, healthcare investment banking at Oppenheimer. Prior to joining Oppenheimer, he was a managing partner at Leap Day Capital. He has also held various positions at Perceptive Advisors, MTBIA, Westwicke Partners, Legg Mason and Abbott Laboratories (now AbbVie). Stefan did post-doctoral work with Nobel Laureate Barry Sharpless at the Scripps Research Institute in La Jolla, received his PhD in Organic Chemistry from UC Berkeley and an undergraduate degree in Chemistry from UC San Diego. Stefan has also served on multiple boards of public and private healthcare companies.

Scott Morenstein (Panelist)
Managing Director
BAAM - New York
Blackstone

Scott Morenstein is a Managing Director of Blackstone.

Before joining Blackstone, Scott previously served as Managing Director at CAM Capital, where he led biotechnology investing since November 2013. Prior to joining CAM Capital, Scott served as managing director at Valence Advantage Life Sciences Fund from January 2012 to November 2013. Prior to Valence Advantage Life Sciences Fund, he served as principal at Caxton Advantage Venture Partners from 2007 until 2011. Prior to that, he served as an investment banking associate and founding member of Seaview Securities from 2003 to 2005. Scott began his career at Lehman Brothers as a healthcare investment banker and equity research analyst, where he worked from 2000 to 2002.

Scott holds an M.B.A. from Harvard Business School and a B.A. from the University of Pennsylvania with a degree in the Biological Basis of Behavior.

William Slattery (Panelist)
Partner
Deerfield

Bill is a Partner on the Therapeutics team and joined the Firm in 2000. Prior to Deerfield, He was a senior healthcare analyst for 10 years at Amerindo Investment Advisors, where he oversaw biotechnology investments. He has held various positions in research including those at National Medical Enterprises, Johnson & Johnson, and HMSS.

Bill is the Chairman of Gilda's Club New York City, a non-profit organization supporting cancer patients and their families. He holds an undergraduate degree in Biology and Chemistry from State University of New York at Albany and completed coursework in Immunology at the Graduate School-New Brunswick, Rutgers University.

Audience Q&A to follow the panel discussion.

Acknowledgment

We would like to express our gratitude to the members of the Chemistry of Life Processes Institute's Executive Advisory Board (EAB) for their enthusiastic support for the Biotech by the Lake Investor Summit series. Our special thanks to EAB member Sujal Shah, President and CEO of CymaBay Therapeutics (CBAY), whose vision, guidance, and leadership made this investor series possible.