

Session	Start	End	Talk time	Q&A time	Title	Speaker
Tuesday, Nov 8th						
Welcome	08:15	08:30			Welcome	Melissa Moore
Session 1 (8:30 - 10:00 am) - An introduction to mRNA Medicines						
Session 1	08:30	08:48	12	6	mRNA Biology and Engineering	Melissa Moore
Session 1	08:48	09:06	12	6	Formulation and Delivery	Daniel Siegwart
Session 1	09:06	09:24	12	6	mRNA Vaccine Mechanisms	Norbert Pardi
Session 1	09:24	09:42	12	6	GMP Manufacturing and Quality Control	Scott Nickerson
Session 1	09:42	10:00	12	6	Regulatory Process and Considerations	Charbel Haber
10:00 - 10:30 am - Break						
Session 2 (10:30 am -12:30 pm) - Advances in Prophylactic Vaccines (Chair: Norbert Pardi)						
Session 2	10:30	10:48	12	6	Systems vaccinology of COVID-19 mRNA vaccines	Bali Pulendran
Session 2	10:48	11:06	12	6	Validation of Self-Amplified mRNA for COVID-19 in Phase III Efficacy Trials	Kelly Lindert
Session 2	11:06	11:24	12	6	Self-amplifying RNA: Applying clinical experience to platform improvements	Robin Shattock
Session 2	11:24	11:42	12	6	Circular RNA vaccines against SARS-CoV-2 and its emerging variants	Wensheng Wei
Session 2	11:42	11:52	7	3	An Intranasal saRNA Vaccine against SARS-CoV-2	Emily Voigt
Session 2	11:52	12:10	12	6	In vivo re-adenylation of mRNA-1273 boosts its efficacy	Andrzej Dziembowski
Session 2	12:10	12:30	12	8	An Effective mRNA-LNP Vaccine Against a Highly Lethal Bacterium	Dan Peer
12:30 -2:00 pm - Lunch						
Session 3 (2:00 - 3:30 pm) - Advances in mRNA Synthesis (Chair: Andreas Kuhn)						
Session 3	02:00	02:18	12	6	N1-methyl-pseudouridine is incorporated with higher fidelity than pseudouridine in synthetic RNAs	Bijoyita Roy
Session 3	02:18	02:36	12	6	Complete Chemical Synthesis of Minimal Messenger RNA by Efficient Chemical Capping Reaction	Hiroshi Abe
Session 3	02:36	02:46	7	3	Production of in vitro transcribed mRNA using synthetic, enzymatically produced linear DNA	Amy Walker
Session 3	02:46	02:56	7	3	Psychrophilic phage VSW-3 RNA polymerase reduces both the terminal and the full-length dsRNA byproducts in in vitro transcription	Bin Zhu
Session 3	02:56	03:12	12	4	Overcoming mRNA Process Optimization and Scalability Challenges	Evan Myers
Session 3	03:12	03:30	12	6	Making innovation reality: strategies for future manufacturing	Scott Ripley
3:30 - 4:00 pm - Break						
Session 4 (4:00 - 5:00 pm) - Flash Poster Talks/New Company Introductions (Chair: Melissa Moore)						
<u>Flash Poster Talks</u>						
Session 4			3		Poster #5: mRNA-based Therapy Proves Superior to the Standard-of-care for Treating Hereditary Tyrosinemia 1 in a Mouse Model	Maximiliano Cacicedo
Session 4			3		Poster #11: Intradermal delivery of mRNA using cryomicroneedles	Jian-dong Huang
Session 4			3		Poster #14: hRNase 4: A New Enzymatic Tool for mRNA Characterization by Mass Spectrometry	Ivan Corrêa
Session 4			3		Poster #51: Preclinical immunogenicity and protective efficacy of novel mRNA vaccines targeting rotavirus VP8*	Sandro Roier
Session 4			3		Poster #89: Discovery of translation initiation elements enabled by a parallel arrayed screen of full-length viral UTRs in synthetic circular RNA	Kristen Ott
Session 4			3		Poster #97: Enhancing CRISPR/Cas gene editing through modulating cellular mechanical properties for cancer therapy	Di Zhang
Session 4			3		Poster #101: Discovery of factorless internal ribosome entry sites using metagenomic data mining	Eric Jan
<u>New Company Introductions</u>						
Session 4			3		Poster # 25: Design and Formulation of LNP-mRNA for Clinically Relevant Applications	Christian Cobaugh
Session 4			3		Poster #99: How Can Ntensify™ Help with Your mRNA Production Scale-Up?	José Castillo
Session 4			3		Poster # 81: Novel E1 and E2 mRNA-based therapeutic vaccines to target low grade HPV infections	Kun Zhou

Session	Start	End	Talk time	Q&A time	Title	Speaker
Session 5: (5:00 - 6:30 pm) - Poster Session: Odd-numbered Posters						
Session 6: (6:30 - 8:00 pm) - Dinner + Keynote 1						
Keynote 1			45-50	10-15	Design of lipid nanoparticle delivery systems that enable nucleic acid-based drugs	Pieter Cullis
Wednesday, Nov 9						
Welcome and Logistics	08:00	08:05			Welcome	Melissa Moore
Session 7 (8:05 - 9:00 am) - Keynote 2						
Keynote 2	08:05	09:00	45	10	From micro and nanotechnology delivery systems to mRNA therapies and what's to come: How overcoming skepticism and barriers led to novel cancer treatments and vaccines, and new ways to tackle global health challenges	Bob Langer
9:00 - 9:30 am - Break						
Session 8 (9:30-11:30 am) - mRNA Engineering and Translation (Chair: Melissa Moore)						
Session 8	09:30	09:50	12	8	Dynamic RNA synthetic biology: Using discoveries from nascent RNA folding to drive RNA engineering	Julius Lucks
Session 8	09:50	11:10	12	8	Dynamics of Translation	Jody Puglisi
Session 8	11:10	10:30	12	8	Uncovering novel translational control elements within 5'-UTRs	Rachel Niederer
Session 8	10:30	10:50	12	8	Consequences of mRNA modifications on translation speed and fidelity	Kristin Koutmou
Session 8	10:50	11:10	12	8	N1-methylpseudouridine found within COVID-19 mRNA vaccines produces faithful protein products	Hani S. Zaher
Session 8	11:10	11:20	7	3	Photocaged 5' cap analogues for optical control of mRNA translation in cells	Melissa Van Dülmen
Session 8	11:20	11:30	7	3	Development of a tethered mRNA Amplifier for the treatment of haploinsufficiency disorders	Jeff Collier
11:30 am -1:00 pm - Lunch						
Session 9 (1:00 - 2:15 pm) - LNP-mediated delivery (Chair: Dan Siegwart)						
Session 9	01:00	01:15	12	3	Next-generation lipid nanoparticle technology for extrahepatic mRNA	Jayesh Kulkarni
Session 9	01:15	01:30	12	3	Novel Ionizable Lipid Library for Enabling Non-Viral Delivery	Tim Leaver
Session 9	01:30	01:45	12	3	Lipid Nanoparticles for Systemic Delivery of mRNA-based	Ying Tam
Session 9	01:45	02:00	12	3	Development and screening of ionizable lipid nanoparticles for vaccine and therapeutic applications	Hyukjin Lee
Session 9	02:00	02:10	7	3	Optimization strategies to achieve high efficiency gene editing in non-human primates using lipid nanoparticle delivery of mRNA	Amy Rhoden Smith
2:15 - 2:45 pm - Break						
Session 10 (2:45 - 4:15 pm) - Cancer Vaccines and Therapies (Chair: Mustafa Diken)						
Session 10	02:45	03:00	12	3	RNA-encoded, extended half-life cytokines in combination with RNA vaccines for synergistic anti-tumor activity	Lena Kranz
Session 10	03:00	03:15	12	3	Chemically synthesized minimal mRNA for anti-cancer vaccination	Steve Pascolo
Session 10	03:15	03:30	12	3	Using mRNA to protect cancer patients from radiation side effects	James Byrne
Session 10	03:30	03:45	12	3	BNT141: An LNP-formulated mRNA encoding an anti-Claudin18.2 RiboMab for the treatment of solid tumors	Hayat Bähr-Mahmud
Session 10	03:45	03:55	7	3	Hybridizing antigen mRNA with short double-stranded RNA adjuvants for safe and efficient cancer vaccines	Satoshi Uchida
Session 10	03:55	04:15	12	8	Efficient healing of large osseous segmental defects using optimized chemically modified messenger RNA encoding BMP-2	Elizabeth Rosado Balmayor
4:15 - 4:45 - Break						
Session 11 (4:45 - 5:30 pm) - Flash Poster Talks and New Company Introductions (Chair: Patrick Baumhof)						
Flash Poster Talks						
Session 11			3		Poster #8: Development of a pro-osteogenic and pro-angiogenic mRNA-activated scaffold for bone repair	Katie McCormick
Session 11			3		Poster #20: Telomeres as an etiologic nexus of IPF, and telomerase mRNA LNPs as a treatment	John Ramunas
Session 11			3		Poster #40: Onco-selective mRNA LNPs achieve tumor regression and improve overall survival in immune checkpoint resistant tumors	Manfred Kraus
Session 11			3		Poster #104: The role of mannosylation of self-amplifying RNA lipid nanoparticles: an influenza vaccine model	Beatriz Dias Barbieri

Session	Start	End	Talk time	Q&A time	Title	Speaker
Session 11			3		Poster #30: Harnessing endogenous proteins for tissue-specific mRNA	Sean Dilliard
<u>New Company Introductions</u>						
Session 11			3		Poster #4: Antibody mediated Targeted LNP for RNA Therapeutics	Seyed Hossein
Session 11			3		Poster #10: Real-time inline size measurement of lipid-based nanoparticles using spatially resolved dynamic light scattering	Bas Evers
Session 11			3		Poster #64: mRNA sequence design for immune applications	Juan Martinez
Session 11			3		Poster #92: High throughput screening of RNA sequence elements to engineer onco-selective therapeutic mRNAs	Cafer Ozdemir
Session 11			3		Poster #106: A novel multi-antigen RNA-based vaccine against SARS-CoV-2 using RNABL delivery is protective in a hamster challenge model	Justine McPartlan

Session 12 (5:30 - 7:00 pm) - Poster Session: Odd-numbered Posters

Thursday, Nov 10

Welcome and Logistics	08:20	08:30	10	0	Welcome and Logistics	Melissa Moore
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Session 13 (8:30 - 09:50 am) - Alternative Delivery Mechanisms (Chair: Patrick Baumhof)

Session 13	08:30	08:50	12	8	Microneedles for delivery of mRNA vaccines	Ana Jaklenc
Session 13	08:50	09:00			Co-delivery of 5 mRNAs to Human PBMCs Using the Cell Squeeze® Technology Generates Enhanced Antigen Presenting Cells (SQZ® eAPC)	Emrah Ilker Ozay
			7	3	Augmenting Antigen-specific CD8+ T Cell Responses	
Session 13	09:00	09:20	12	8	Biomedical device development for gastrointestinal applications	Giovanni Traverso
Session 13	09:20	09:30	7	3	Polymeric Based Nanoparticle platform for tissue-specific delivery of functional mRNAs	Gilles Di Vita
Session 13	09:30	09:50	12	8	Transformative siRNA dianophores for extrahepatic delivery	Anastasia Khvorova
Poster Prizes	09:50	10:00	10	0	Poster prize winners announced	

10:00 - 10:30 am - Break

Session 14 (10:30 am - 12:00 pm) - Regulatory Considerations: Lessons Learned from the COVID-19 Vaccine Experience

Shaping Pandemic Preparedness and Future Regulatory Development for mRNA-based Vaccines and Therapeutics (Moderator: Charbel Haber)

Session 14	10:30	10:40	10		Regulatory perspectives obtained from COVID-19 vaccine development	Charbel Haber and Constanze Blum
Session 14	10:40	10:50	10		Future Pandemic Preparedness	Adam Hacker
Session 14	10:50	11:00	10		Q&A	
Session 14	11:00	12:00	60		Fireside chat - speakers in Boston	Charbel Haber, Constanze Blume, Ruben Rizzi, John Talian
					Fireside chat - speakers remote	Florian Neske, Adam Hacker, Marco Cavaleri, Peter Marks

12:00 - 1:00 pm - Lunch

Session 15 (1:00 - 2:15 pm) - CMC and Quality Control (Chair: Scott Nickerson or other Moderna CMC person)

Session 15	01:00	01:15	12	3	Guiding mRNA-LNP drug products from early R&D programs to the market	Andreas Wagner
Session 15	01:15	01:30	12	3	Reduction of double-stranded RNA in in vitro transcribed mRNA	Andreas Kuhn
Session 15	01:30	01:45	12	3	Novel PCR-based mRNA drug substance manufacturing enhancing our integrated mRNA CDMO offering	Julian Mochayed
Session 15	01:45	02:00	12	3	Innovations to support the next generation of mRNA vaccines and therapeutics	Tadas Trunca
Session 15	02:00	02:15	12	3	Defining Scale-Up Challenges	Elaine Peters

2:15 - 2:30 pm - Break

Session 16 (2:30 - 4:00 pm) - Therapeutics (Chair: Patrick Baumhof)

Session 16	02:30	02:45	12	3	CAR T cells produced <i>in vivo</i> to treat cardiac injury	Joel Rurik
Session 16	02:45	02:55	7	3	Myocardial Delivery of PSAT1 Modified mRNA Induces Cardiac Regeneration and Function Post-Ischemic Cardiac Injury	Ajit Magadum

Session	Start	End	Talk time	Q&A time	Title	Speaker
Session 16	02:55	03:10	12	3	SORT LNP-formulated mRNA for the treatment of primary ciliary dyskinesia	David Lockhart
Session 16	03:10	03:25	12	3	Transcription factor mRNA therapy: a potent tool in liver disease	Marion Pönisch
Session 16	03:25	03:40	12	3	Messenger RNA therapy for the treatment of rare genetic disorders	Paolo Martini
Session 16	03:40	03:50	7	3	Harnessing mobile genetic elements to write DNA sequences with	William Querbes
Session 16	03:50	04:00	7	3	Pioneering a New Class of Precision Medicine: Design and Characterization of mRNA Therapeutics as Programmable Epigenetic Medicines	Charles O'Donnell

Passing of the baton and closing (4:00 - 4:15 pm)