Second Quarter 2022 Financial Results & Clinical Update

August 9, 2022

Forward Looking Statements

This presentation contains forward-looking statements of Lumos Pharma, Inc. that involve substantial risks and uncertainties. All such statements contained in this presentation are forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995, a law that gives us the opportunity to share our outlook for the future without fear of litigation if it turns out our predictions were not correct.

We are passionate about our business, including LUM-201 and the potential it may have to help patients in the clinic. This passion feeds our optimism that our efforts will be successful and bring about meaningful change for patients. Please keep in mind that actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make.

We have attempted to identify forward-looking statements by using words such as “projected,” "upcoming," "will," “would,” "plan," “intend,” "anticipate," "approximate," "expect," “potential,” “imminent,” and similar references to future periods or the negative of these terms. Not all forward-looking statements contain these identifying words. Examples of forward-looking statements include, among others, statements we make regarding progress in our clinical efforts including comments concerning screening and enrollment for our trials, momentum building in our LUM-201 program for PGHD, anticipated timing of interim analyses of trials, our belief that the interim data should provide an early indication of efficacy and safety of oral LUM-201 versus standard of care daily rhGH injections in PGHD, LUM-201’s therapeutic potential when administered to pediatric subjects with idiopathic growth hormone deficiency, that the interim sample size should be adequate to provide an initial indication of LUM 201’s impact, expecting the primary outcome data readout for our trials, the potential to expand our LUM-201 platform into other indications, future financial performance, results of operations, cash position, cash use rate and sufficiency of our cash resources to fund our operating requirements through the primary outcome data readout from the OraGrowtH210 and OraGrowtH212 Trials, and any other statements other than statements of historical fact.

We wish we were able to predict the future with 100% accuracy, but that just is not possible. In addition to other considerations referenced in this paragraph, the recent conflict between Ukraine and Russia has increased the uncertainty in that region and may impact our business in the future. Our forward-looking statements are neither historical facts nor assurances of future performance. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make due to a number of important factors, including the effects of pandemics, other widespread health problems or the Ukraine-Russia conflict, the outcome of our future interactions with regulatory authorities, our ability to project future cash utilization and reserves needed for contingent future liabilities and business operations, the ability to obtain the necessary patient enrollment for our product candidate in a timely manner, the ability to successfully develop our product candidate, the timing and ability of Lumos to raise additional equity capital as needed and other risks that could cause actual results to differ materially from those matters expressed in or implied by such forward-looking statements. You should not rely on any of these forward-looking statements and, to help you make your own risk determinations, we have provided an extensive discussion of risks that could cause actual results to differ materially from our forward-looking statements in the "Risk Factors" section and elsewhere in Lumos Pharma’s Annual Report on Form 10-K for the year ended December 31, 2021, as well as other reports filed with the SEC including our Quarterly Reports on Form 10-Q. All of these documents are available on our website. Before making any decisions concerning our stock, you should read and understand those documents.

We anticipate that subsequent events and developments will cause our views to change. We may choose to update these forward-looking statements at some point in the future, however, we disclaim any obligation to do so. As a result, you should not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this presentation. 8.9.2022

Agenda

Welcome

- Lisa Miller, *Senior Director of Investor Relations*

Review of Highlights & Clinical Development Program

- Rick Hawkins, *Chief Executive Officer & Chairman*

Financial Results

- Lori Lawley, *Chief Financial Officer*

Questions & Answers

- Rick Hawkins, *Chief Executive Officer & Chairman*
- John McKew, PhD, *President & Chief Scientific Officer*
- David B. Karpf, MD, *Chief Medical Officer*
- Lori Lawley, *Chief Financial Officer*

Analyses Planned for OraGrowtH210 and OraGrowtH212 Trials

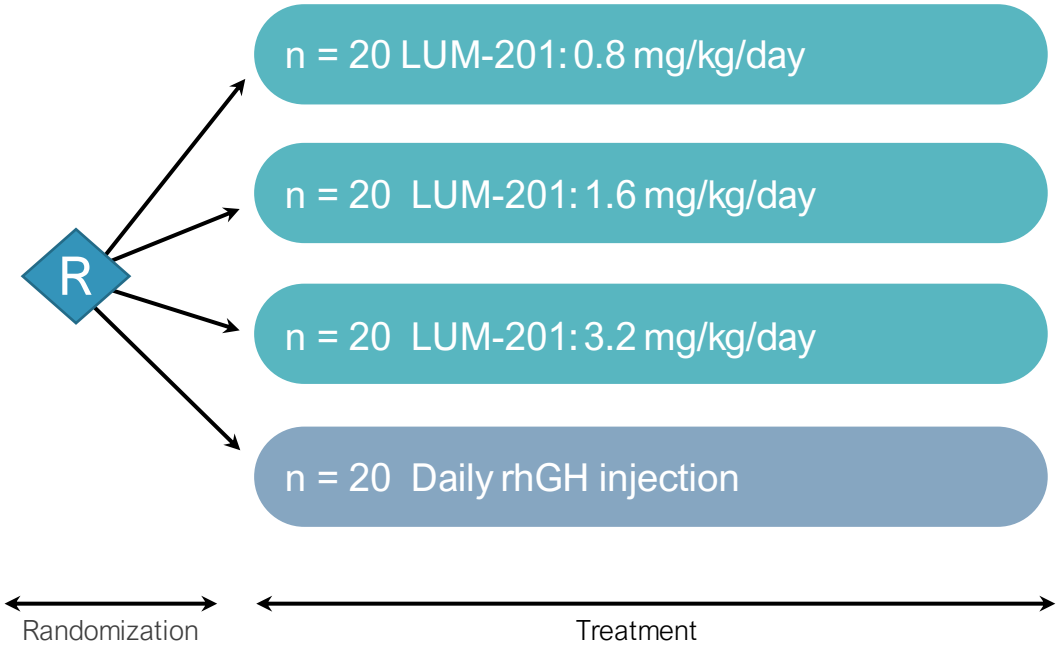
		Interim Readout	Primary Outcome Readout
OraGrowtH 210 Trial (Phase 2)	Timing	By end of 2022	Anticipated 2H 2023
	Data	AHV and Safety	AHV and Safety
	Dataset	**40** subjects	**80** subjects
		at 6 months on therapy	at 6 months on therapy
	Cohorts	~10 on **0.8** mg/kg/day **LUM-201**	~20 on **0.8** mg/kg/day **LUM-201**
		~10 on **1.6** mg/kg/day **LUM-201**	~20 on **1.6** mg/kg/day **LUM-201**
		~10 on **3.2** mg/kg/day **LUM-201**	~20 on **3.2** mg/kg/day **LUM-201**
		~10 on Standard **rhGH**	~20 on Standard **rhGH**
OraGrowtH 212 Trial (PK/PD)	Timing	By end of 2022	Anticipated 2H 2023
	Data	AHV and Safety	AHV, Safety, PK/PD, Pulsatility
	Dataset	**10** subjects	**Up to 24** subjects
		at 6 month on therapy	at 6 month on therapy
	Cohorts	~5 on **1.6** mg/kg/day **LUM-201**	**Up to 12** on **1.6** mg/kg/day **LUM-201**
		~5 on **3.2** mg/kg/day **LUM-201**	**Up to 12** on **3.2** mg/kg/day **LUM-201**

OraGrowtH210 Trial: Phase 2 Trial in PGHD

OraGrowtH210 TRIAL

- n = 80
- PEM(+) PGHD subjects
- Inclusion: stim GH ≥ 5 ng/ml and baseline IGF-1 >30 ng/ml
- rhGH treatment naïve
- ~40 trial sites US & International
- Trial opened Q4 2020

Interim Data Analysis (n = **40**) – at **6 months** on therapy
Primary Outcome Data (n = **80**) – at **6 months** on therapy
Total Study Duration – 24 months



Objectives

Primary Endpoint:

- Annualized Height Velocity (AHV)

Goals:

- Prospectively confirm utility of PEM strategy
- Determine optimal dose for Phase 3

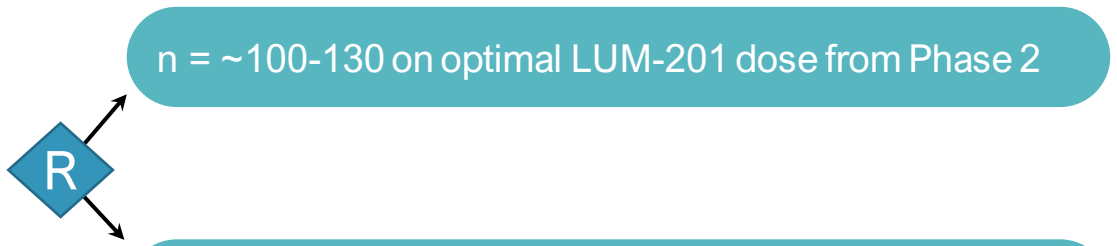
Interim AHV and safety data on 40 subjects at 6 months on therapy expected by end of 2022
Primary outcome data for OraGrowtH210 Trial on 80 subjects anticipated 2H2023

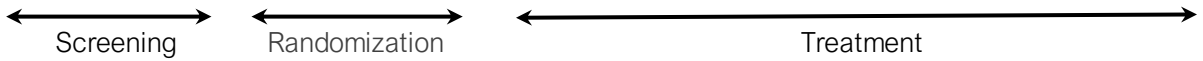
Planning for Pivotal Phase 3 Trial of LUM-201 in PGHD – Tentative Trial Design

Potential Design for Phase 3 Registrational Trial

- n = ~150-200
- PEM(+) PGHD subjects
- Inclusion: stim GH ≥ 5 ng/ml and baseline IGF-1 >30 ng/ml
- rhGH treatment naïve
- 12-month dosing
- Global multi-site trial

Registrational Phase 3 Trial
Total subjects estimated n = ~150-200
Randomized 2 LUM-201: 1 rhGH





Objectives

Primary Endpoint:

- Achieve non-inferiority of LUM-201 Annualized Height Velocity (AHV) compared to control of standard dose of rhGH

Goals:

- Support regulatory filings for FDA, EMA, other agency approvals

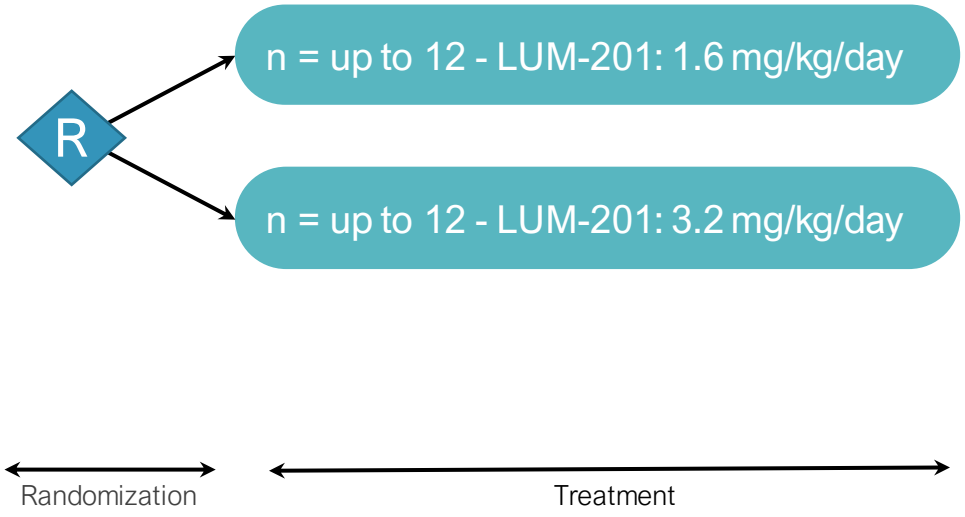
Tentative trial design based on similar prior studies by GH industry peers
Discussions with FDA will determine actual Phase 3 design

OraGrowtH212 Trial: Pharmacokinetic / Pharmacodynamic Trial in PGHD

OraGrowtH212 TRIAL

- n = up to 24
- Open-label study
- PGHD patients
- rhGH-treatment naïve
- Single, specialized clinical site
- Q10 minute GH sampling for 12 hours

Interim Data Analysis (**n =10**) – at **6 months** on therapy
Primary Outcome Data (**n = up to 24**) – at **6 months** on therapy
Total Study Duration – subjects on therapy to near adult height



Objectives

Primary Endpoints:

- Assess LUM-201 effect on endogenous GH pulsatility and Annualized Height Velocity (AHV)
- Evaluate PK/PD in children

Goals:

- Confirm prior PK/PD data in adults & subset of Merck 020 trial
- Support future regulatory filings & commercialization

Interim AHV and safety data on 10 subjects expected by end of 2022
Primary outcome data on up to 24 patients anticipated 2H 2023

LUM-201 Program Pipeline

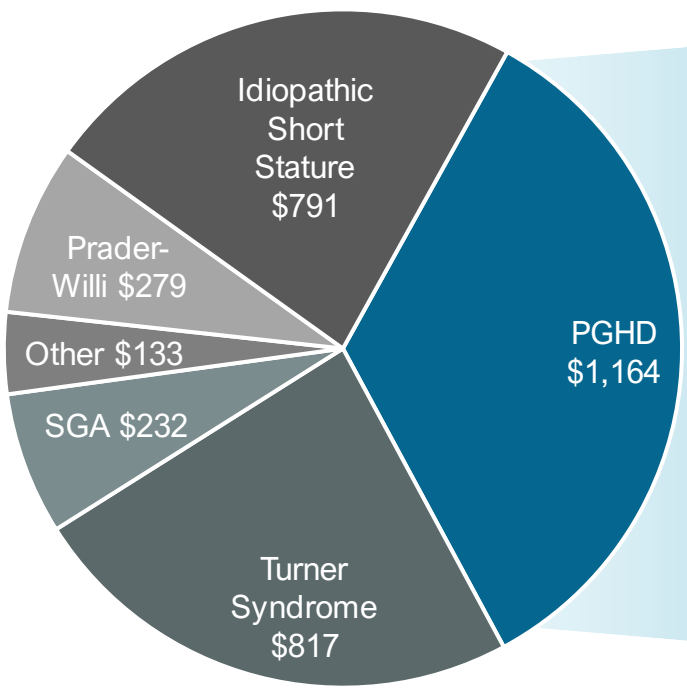
	Study	Pre-Clinical	Phase 1	Phase 2	Phase 3	Status
LUM-201 (Ibutamoren) In PGHD	Phase 2	OraGrowtH210 TRIAL				Ongoing Phase 2 trial: Interim analysis anticipated by year-end 2022 | Primary outcome data 2H2023
	Long-term extension	OraGrowtH211 TRIAL				Proposed long-term extension study for OraGrowtH Trials
	PK/PD trial	OraGrowtH212 TRIAL				PK/PD trial: Interim analysis anticipated by year-end 2022 | Primary outcome data 2H2023
	Switch trial	OraGrowtH213 TRIAL				Switch trial evaluating LUM-201 in subjects from rhGH arm of OraGrowtH210 Trial: Ongoing
LUM-201 In NAFLD	Phase 2 pilot trial	MGH pilot trial				Pilot trial initiated by Mass Gen Hospital (MGH) evaluating LUM-201 in NAFLD: Prescreening

Lumos Pharma is evaluating additional indications for LUM-201 for Phase 2 studies including
Small for Gestational Age - Prader-Willi Syndrome - Turner Syndrome - Idiopathic Short Stature

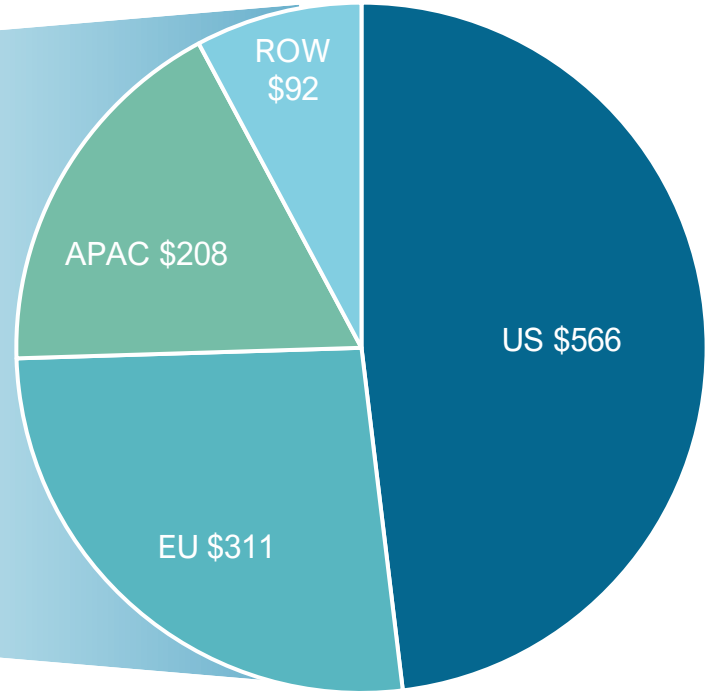
PGHD Pediatric Growth Hormone Deficiency NAFLD Non-Alcoholic Fatty Liver Disease MGH Massachusetts General Hospital

PGHD is ~35% of the $3.4B Pediatric Recombinant Growth Hormone Market

2018 Global rhGH Sales $3.4B*
(Values below in $millions)



2018 Sales of rhGH for PGHD $1.2B*
(Values below in $millions)



- Pediatric rhGH market projected to grow ~8% per year*
- Well characterized market with established reimbursement mechanisms
- Current SOC consists of daily injectables; expected to convert to weekly injectables
- **Pediatric rhGH market appears primed for conversion to oral therapy**

*Grandview Research, hGH Market, 2018, excludes Adult Growth Hormone Deficiency

Secure Cash Position

Metric	Position
Cash balance June 30, 2022	$79.5 million
Cash use through 2022	$8.5 to $9.5 million per quarter
Strong financial position	Cash runway into Q2 2024, beyond OraGrowthH210 and OraGrowthH212 primary outcome data
Shares outstanding as of June 30, 2022	8,377,567

Cash balance to support current operations into Q2 2024, beyond primary outcome data readouts for OraGrowthH210 and OraGrowthH212 Trials

Investment Highlights

Novel Oral Rare Disease Asset	• Novel **oral** therapeutic asset, **LUM-201**, for growth hormone deficiency (GHD) disorders • LUM-201 acts within natural endocrine pathway, differentiated from injectable therapies • Prior data support potential efficacy and safety of LUM-201 across multiple indications • **Potential to disrupt** significant subset of sizable **injectable market** for GHD
Pipeline in a Product	• Worldwide market for GHD disorders is **$3.4 billion*** • Market for initial oral LUM-201 indication, PGHD, is **$1.2 billion***
Late-stage Trials in PGHD	• **OraGrowtH210 Trial** (Phase 2): Interim data by year-end 2022 | Primary data 2H2023 • **OraGrowtH212 Trial** (PK/PD): Interim data by year-end 2022 | Primary data 2H2023 • **OraGrowtH213 Trial** (Switch): Ongoing
Solid Financial Position	• Cash balance of **$79.5 million** at close of Q2 2022 • Cash runway **into Q2 2024** beyond OraGrowtH210 & OraGrowtH212 primary outcome data

PGHD = Pediatric Growth Hormone Deficiency

* USA, Germany, France, Italy, Spain, UK, Japan (Grandview Research, Growth Hormone Market Forecast, 2019)