Q1 Results and Full Year 2020 Outlook

May 6, 2020

Nasdaq: LGND
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The following presentation contains forward-looking statements by Ligand that involve risks and uncertainties and reflect Ligand’s judgment as of the date of this presentation. Words such as “plans,” “believes,” “expects,” “projects,” “could,” “anticipates,” and “will,” and similar expressions, are intended to identify forward-looking statements. These forward-looking statements include, without limitation, financial projections, expectations regarding research and development programs, potential uses of capital, the impacts that the COVID-19 pandemic will have on Ligand and its partners and timing expectations for preclinical studies and clinical trials by Ligand and its partners. Actual events or results may differ from Ligand’s expectations due to risks and uncertainties inherit in Ligand’s business, including Ligand has wide discretion on its use of capital and may choose not, or pursue acquisitions or internal develop programs; the risk that Ligand or its partners may not perform as expected, including any failure to develop or commercialize product as expected; additional disruptions to Ligand’s or its partners’ business as a result of the COVID-19 pandemic; the possibility that Ligand may not successfully implement its strategic growth plan or achieve its guidance for 2020 or thereafter and other risks and uncertainties described in its public filings with the Securities and Exchange Commission, available at www.sec.gov.

Information regarding partnered products and programs comes from information publicly released by our partners. This presentation describes the typical roles and responsibilities of Ligand and our partners and is not intended to be a complete description in all cases. Our trademarks, trade names and service marks referenced herein include Ligand, Captisol, OmniAb and OmniChicken. Each other trademark, trade name or service mark appearing in this presentation belongs to its owner. The process for reconciliation between adjusted financial numbers presented on slides 5, 15 and 19 and the corresponding GAAP figures is shown in the Q4’19 and Q1’20 press releases available at https://investor.ligand.com/press-releases.

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Business Highlights and COVID 19 Insights

John Higgins
Chief Executive Officer
Ligand: Innovation Driving Value

**Our Business**
- Technologies
- Portfolio
- Financial Growth

**Our Focus**
- Customer Service
- Operational Excellence
- Deploying Capital

**Our Team**
- Strong Company Culture
- Diverse and Experienced Board of Directors
- Focused on ESG/Corporate Governance
Recent Developments and COVID-19 Updates

• Solid Q1 financial performance, raised outlook for 2020
• Strong business development execution, multiple important new deals signed
• Icagen acquisition completed, team fully integrated into Ligand and contributing to partner programs
• Strong balance sheet, and growing operating cash flows to support investment in the business and acquisitions
• Covid-19 impacting some sources of revenue, but we remain confident in our prospects given the diversity of the business
• Supporting multiple partners advancing COVID-19 programs, including two antibody programs and Gilead for remdesivir

* 2019 Figures exclude Q1 2019 Promacta contribution. Please see our Q419 and Q120 press releases for a reconciliation.
• Uncertain times due to pandemic
• We surveyed all of our partners, and have done extensive analysis/forecasting
• Remain confident in our business, ability to serve partners, and ability to continue expanding portfolio
• Workforce to return based on local health guidance
• COVID-19 did not materially negatively impact Q1. While mix of revenue is different, we expect full year to be higher now than when we started the year
• Royalty revenue streams should normalize by year-end with increased patient access to care
• Expectation that delayed R&D projects will resume
• Focused on Captisol supply
• We continue to monitor the business environment and impacts on our business
Ligand’s Current Partnered Portfolio
Diverse and High Quality

• Over **200** fully-funded partnered programs targeting diverse medical needs

• Over **125 different partners** representing all segments of the pharma industry

• **OmniAb** and **Captisol** technologies back two-thirds of the portfolio

• More than **40 clinical** and **regulatory** events expected this year

• Potential for more than **8 product approvals** over next 3 years
Partnered Pipeline – Bullseye Diagram

Over 200 programs with over 125 different partners

• Diagram shows distribution of partnered assets by underlying technology and stage of development

• OmniAb is largest, most valuable component of business
  – At acquisition, no OmniAb programs were clinical-stage
  – Today, a rapidly growing number are in and entering clinic

• VDP and Icagen segment is new from recent acquisitions

High-value antibody programs rapidly growing in number and continuing to progress to and through clinical trials
COVID-19 Pandemic: Partner Outreach

- Ligand has a unique position in the industry with pharma partnerships with over 125 companies funding over 200 programs

- Ligand reached out to 100% of our partners in recent weeks to obtain first-hand information about how the pandemic was influencing their business and our partnered programs

Partner Profile

- Start Up/Private: 34%
- Generics Companies: 7%
- Large Pharma/Biotech: 16%
- Small Biopharma/Biotech: 43%

Ownership Structure

- Private: 53%
- Public: 47%
COVID-19 Pandemic: Partner Outreach

**Impact on Partner Operations**

Partners surveyed generally report limited impact on operations and capitalization.

**Employees and Operations Status**
- No Impact: 50%
- Small Impact: 26%
- Moderate Impact: 13%
- Significant Impact: 7%
- TBD: 4%

**Capital Position**
- Potentially Need to Finance: 26%
- Strong Cash Position: 71%
- TBD: 3%

At least 3 partners with weak capital position applied for PPP loans under the CARES Act.
COVID-19 Pandemic: Partner Outreach

- Currently, a majority of Ligand-related development programs reported as having no or only a small impact, small minority reporting more significant impacts or terminations.

- Programs reporting significant impact were mostly related to new clinical trial starts, leading to delays.
Captisol Support for Remdesivir

• We are focused on Captisol supply to support remdesivir

• Captisol has a strong heritage as an enabling technology of important, global medicines
Ligand’s Independent Directors

John Kozarich, Ph.D. Chairman
Merck Former Research Executive
Former CEO, ActivX Biosciences
Alkermes, Chemistry Professor

Jason Aryeh
Life-Sciences Fund Manager
Industry Board member

Sarah Boyce
CEO, Avidity Biosciences
Past companies include: Akcea Therapeutics, Ionis, Forest Labs, Novartis

Todd Davis
Founder: RoyaltyRx Fund
Manager/board member, Biotech Companies

Nancy Gray, Ph.D.
CEO, Gordon Research Conferences
Executive at American Chemical Society and Researcher at Exxon

John LaMattina, Ph.D.
Former President and Head of Global R&D, Pfizer, Inc.
Biotech Advisor and Board Member

Sunil Patel
Public & Private Biotech Executive
Past companies include: Abgenix, Gilead, BiPar and OncoMed Protein/mAb Researcher

Stephen Sabha, MD
Institutional Investor
BioTech Research Analyst
Gastroenterologist
Outstanding Q1 2020 Performance
Diversity of Revenue supports increased 2020 outlook

| Strong Captisol Sales Drives Revenue Outperformance | $33.2 million in revenue
23% YoY Q1 royalty growth | $0.89 adjusted EPS*
40% YoY Q1 EPS growth

|   | $234 million
Convertible debt retired | $17 million
Cash from operations

|   | $31 million
Cash saved | $739 million of cash
Capital deployment focused on acquiring technology platforms, pipeline assets and royalty rights

Q1 2020 Revenue: $33.2 million
Outstanding Performance, Driven by Material Sales

Service Revenue
- Q1 performance in line with expectations
- Full year limited impact from COVID-19

Royalties
- Q1 performance solid with 23% YoY growth
- COVID-19 impact leading to lower 2020 royalty outlook

Contract Revenue
- Timing of partner events leading to lower quarter
- COVID-19 impact leading to lower 2020 contract revenue outlook

Captisol
- Significant first quarter revenue leading to increased view and guidance for 2020
Service Revenue

Breaking out Service from Other Contract Payments

Contract Revenue

- Includes upfront payments, annual license fees, clinical and commercial milestones, commercial license fee revenue and other items

- Over $3 billion of potential milestones across the 200+ partnered programs; not all will be realized but large portfolio creates growing annual stream of payments

Service Revenue

- Includes majority of revenue associated with Vernalis, OmniChicken discovery, and new Icagen team

- Addition of Icagen provides catalyst for new line; substantial and recurring portion of the contract payment line

* 2018 shown excluding $47 million one-time payment from Wuxi
Increased 2020 Revenue Outlook: Increased Total Revenue, Accounting for COVID-19 Adjustments

**Royalty**
- Lower expected patient visits and treatments, off about 15% but should recover in 2021

**Contract**
- Lower expected milestones, due to trial delays and financial disruption; Down about 40% but most could be made up in 2021

**Service**
- Steady revenue source. No change projected

**Captisol Sales**
- Higher Captisol sales expected for 2020
Raising 2020 Financial Guidance

Strong Margins and Earnings Growth

Total Revenue

$140 million

32% growth w/o Q119 Promacta

Gross Margin

85% - 90%

EBITDA margin ~50%

Cash Expenses

$55 to $58 million

Including Icagen pro forma

Adjusted EPS*

$3.65

45% growth w/o Q119 Promacta

Note: EBITDA excludes non-cash stock-based comp.

Continued Focus on Strategic M&A
Four Part Investment Strategy

- $739 million in cash available today for M&A investments

<table>
<thead>
<tr>
<th>Technologies</th>
<th>Shots on Goal</th>
<th>Revenue / Earnings</th>
<th>Product Financings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying tools the industry needs,</td>
<td>Acquiring partnered programs to drive</td>
<td>Cash-flow positive companies with Ligand-like</td>
<td>Funding product development in exchange</td>
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<td>investing in them to generate new</td>
<td>growth; acquiring unpartnered assets</td>
<td>business models; commercial stage royalty buys</td>
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<td>deals; a Ligand strength</td>
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Pipeline and Operating Highlights

Matt Foehr
President & Chief Operating Officer
# Partnered Pipeline Snapshot (May 2020)

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<tr>
<th>Partner</th>
<th>Program</th>
<th>Therapy Area</th>
<th>Technology</th>
<th>Preclinical</th>
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<th>Phase 2</th>
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<td>&gt;25 additional Phase 1 assets</td>
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Partnered pipeline also includes >100 preclinical programs

Information regarding partnered programs comes from information released by our partners and from clinicaltrials.gov
Icagen and Ligand’s Technologies

- Icagen has established deep biological expertise focused on ion channels and transporters, and has a strong track record in ion channel drug discovery from screening to lead optimization.

Icagen’s medicinal chemistry, *in silico* and computational chemistry (including AI) applications and x-ray fluorescence assays can integrate into/expand the drug-discovery work at Vernalis.

Icagen’s novel reagent generation and assays can support novel OmniAb antibody discovery when targeting high-value ion channels and transporter targets.

Ion channel targets are frequently a focus of current and prospective Vernalis and OmniAb partners.
OmniAb Technology
Partners and Programs

• Growing with continued deal flow and partner expansion of use

• Viewed as a best-in-class technology for antibody discovery

• Continued innovation and investment, with launch of new animals and acquisition of bolt-on technologies

Since acquisition, Ligand has nearly tripled the number of partners leveraging OmniAb, and the number of programs in development is accelerating.
Captisol Technology

- Ligand continues to invest in expansion of Drug Master Files in U.S., Canada, Japan and China, and into manufacturing and distribution efficiencies
- Steady growth in recent years
- Significant growth projected in 2020
Captisol’s Differentiation

Key Technology Features

**Global Reach**
Captisol-enabled drugs are marketed in >70 countries
- >40 partners have Captisol-enabled drugs in development

**Intellectual Property**
Substantial know-how; Patents extend until 2033

**Drug Master Files**
Type 4 and 5 DMFs in U.S. with >20,000 pages containing manufacturing, safety data (IV, inhaled, oral, etc.)
- Also have DMFs in Japan, China and Canada

**Manufacturing, Quality & Scale**
Manufacturing is conducted in two cGMP plants via a validated process, with distribution out of five facilities
• Our Captisol supply network is served by two GMP manufacturing plants and five distribution facilities around the globe, all of which are fully operational

• Continued focus on quality, global supply chain integrity and global distribution efficiency

• Investing in capital equipment for further supply network and capacity expansion
Captisol and Formulation Ratios

- Captisol plays a critical role in the formulation of multiple approved products

- Large amount of Captisol is needed in formulations, and that increases importance of product quality and purity, especially for injectable drugs

- The Captisol-to-remdesivir weight ratios for the two formulations available via Emergency Use Authorization (EUA)* are:
  - 30:1 (Lyophilized powder)
  - 60:1 (Injection solution)

Formulation Ratios of Selected Captisol-enabled Commercial Products

<table>
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<tr>
<th>Drug / active (Approval Year)</th>
<th>Captisol to API* (weight : weight)</th>
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<tbody>
<tr>
<td>BAXDELA®/ delafloxacin (2017)</td>
<td>8:1</td>
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<tr>
<td>NEXTERONE®/ amiodarone (2010)</td>
<td>10:1</td>
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<td>NOXAFIL®/ posaconazole (2014)</td>
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<td>KYPROLIS®/ carfilzomib (2012)</td>
<td>50:1</td>
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<tr>
<td>ZULRESSO™/ brexanolone (2019)</td>
<td>50:1</td>
</tr>
<tr>
<td>EVOMELA®/ melphalan (2016)</td>
<td>54:1</td>
</tr>
</tbody>
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Captisol and Computer Modeling
Molecule dynamics simulations with remdesivir

- Computer modeling further illustrates the role of Captisol
- Cloaks molecules and enhances solubility and stability
- Molecular dynamics simulations show insertion of remdesivir is stable in the Captisol cavity

The snapshot shown is cut from molecular dynamic simulations (50 to 100 ns) using the neutral remdesivir (4b structure from Siegel et al 2017 J. Med. Chem.) with a select substitution pattern representing a species present in Captisol. The direction of insertion (trajectory) selected is with the two ethyl groups oriented to the primary face of Captisol. The preliminary results suggest that the complexes are stable for the simulated time studied. MD simulations were performed in explicit water using GROMACS 2020 and the GROMOS 54a7 forcefield.
Captisol and Solubility

Simple demonstration illustrates Captisol’s ability to dissolve remdesivir

- Remdesivir mixed in a Captisol to API ratio of 30:1
- Results in a solubilized, clear solution

Each vial contains 100 mg of remdesivir, without (left) or with (right) Captisol (3 g). Internal demonstration performed by WuXi AppTec following a procedure adapted from Example 1 in US 2019/0083525 A1 Larson; Pub. Date: Mar. 21, 2019.
Ligand’s Footprint
Locations that support our major technology platforms

San Diego, California
Corporate Headquarters

Lawrence, Kansas
Captisol Research Center

Emeryville, California
OmniAb Research Center

Cambridge, UK
VDP Research Center

RTP, North Carolina
Icagen

• 145 employees, including 63 PhDs
• Decentralized business operations to efficiently serve our technology partners
Q&A
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A great source for latest events and partnered program updates