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Ligand: Operational Excellence; Superior Growth Potential

We are a biotech company focused on financial growth driven by licensing drug-enabling technologies and investing to support our partnered portfolio.

Employees
115 including 49 PhDs

Facilities
4 U.S.
1 England

2019 Revenues
$120 million

Market cap today
$1.6 billion
Strong Growth In All Revenue Segments

Royalties
- 14% CAGR

Material Sales
- 17% CAGR

Contract Payments
- 17% CAGR

Note: Numbers exclude historical Promacta royalties. Contract payments in 2018 excludes one-time payment of $47M from Wuxi.
2019 Revenue: $120.3 million
Outstanding Performance, Highly Diversified

Royalties
- Significant royalties currently driven by top two products
- 11 other products contributing

Material Sales
- Over 100 distinct customer orders
- 11% growth projected in 2020

Contract Payments
- 70 distinct payments
- More than 6 times the revenue of 2015
Two Major, Best-in-Class Technologies Driving Value For Shareholders

- Partners are continuing to invest heavily in programs and make clinical progress
- Ligand has received $114 million in revenue payments related to OmniAb
- Royalties projected to come online for Ligand sooner than projected three years ago, due to quality of data and aggressive investment by our partners
- New deal flow remains strong, fueling expanded R&D investment and potential royalties on major new antibodies

- Enabling important medicines for cancer, CNS and infection; recently highlighted by Gilead for potential treatment for coronavirus
- Since acquisition in 2011 for $35 million, Ligand has booked over $350 million in revenue related to Captisol
- 2019 was highest year of Captisol revenue to date, projected to increase in 2020
Ligand’s Current Partnered Portfolio
Diverse and High Quality

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

• Over **120 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 this year

• Potential for more than **8 product approvals** over next 3 years
Financial Highlights
Strong 2019 Financial Performance
Strong Core Growth and Significant Asset Sale

Seventh Consecutive Year of Strong Earnings and Positive Cash Generation

$120 million in revenue
20% YoY Q4 royalty growth
$3.09 Adjusted EPS*

$827 million
Proceeds from sale of Promacta®

$70 million*
Cash from other operations

~$450 million
Cash returned to shareholders

$1 billion of cash
Enabling investment in platform acquisitions, portfolio acquisitions, product financings and pipeline & technology investment while returning value to shareholders

16.5 million
Basic shares outstanding

Q4 and 2019 Performance Provide Platform for the Future

Contract payments
- Wide diversity of 2019 payments across approximately 70 events
- $20+ million contribution from recurring service payments and annual license fees

Material sales
- Record year at $31.5 million
- Mix of commercial and clinical users

Royalties
- Diverse list of commercial products generating royalties
- Q1’19 included Promacta royalties of $14.2 million

[Bar chart showing contract payments, material sales, and royalties for Q4 and 2019, with details on amounts and sources.

2020 Revenue Guidance

All three revenue segments expected to generate double-digit growth in 2020

- **Royalties**: $38M (16% Growth)
- **Material Sales**: $35M (11% Growth)
- **Contract Payments**: $48M (15% Growth)

Note: Numbers exclude historical Promacta royalties. Contract payments in 2018 excludes one-time payment of $47M from Wuxi.
2020 Financial Guidance
Strong Margins and Earnings Growth

Core Business Strength Augmented by $1 Billion of Cash for M&A, Share Repurchase and Capital Return

Total Revenue
- $121 million
- 14% organic growth

Gross Margin
- 90%
- EBITDA margin 50%

Cash Expenses
- $49 to $51 million
- Flat compared to 2019

Adjusted EPS*
- $3.40
- 35% organic growth


Substantial M&A Opportunities and Clear Strategic Focus

- $350 million deployed over past 9 years; over that period, market cap has increased from $200 million to $1.6 billion
- $1 billion in cash available today for M&A investments

Focused on Four Primary Investment Strategies

<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 the tools the industry needs, investing in them to generate new deals; a Ligand strength</td>
<td>Acquiring partnered programs to drive growth; acquiring unpartnered assets to be outlicensed</td>
<td>Cash flow positive companies with Ligand-like business models; commercial stage royalty buys</td>
<td>Funding product development in exchange for royalties and milestones</td>
</tr>
</tbody>
</table>

Note: Capital deployment number excludes CVRs

Shots on Goal:
- CyDex
- Selexis 1
- Selexis 2
- OM1
- CorMatrix
- Crystal
- Vernalis
- Patella
- Novan
- Ab Initio

More M&A Anticipated in 2020
Pipeline and Operating Highlights
Biology of Antibodies

The Power of the Immune System

• Antibody therapy leverages an animal’s ability to generate proteins that bind very selectively to specific molecules

• It is possible to create an antibody that is specific to almost any cell target

Antibodies can influence the biology of target cells:

• As agonists or antagonists
• Influencing signaling
• Even facilitating the selective killing of diseased cells
Likelihood of Approval at Phase 1

Our Industry is Recognizing Higher Success Rates for Biologics

- Success rates for antibody classes is **nearly twice** the rate of small molecules
- Industry continues to make substantial investment in novel antibodies

<table>
<thead>
<tr>
<th></th>
<th>Likelihood of Approval at Phase 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small molecules</td>
<td>6.2%</td>
</tr>
<tr>
<td>Biologics/Antibodies</td>
<td>11.5%</td>
</tr>
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</table>

“Over the past 15 years, it has become clear that antibody therapeutics are both versatile and successful. The industry continues to be very interested in antibody-based therapeutics development, because they work.”

Janice Reichert, PhD
President, The Antibody Society

Clinical Development success rates 2006-2015 (Bio, Biomedtracker and Amplion); Reichert Antibody Society, 2017
The power of the science of antibodies has been developing for over 2 decades.

Given higher success rates, industry investment in antibodies has expanded and fueled an increase in new approvals.

The emergence of immuno-oncology and cell therapy are also beginning to contribute to growth.

Source: Antibodysociety.org, 2019
Antibodies: Major R&D and Sales Growth

The number of antibodies in the clinic has more than quadrupled since 2008.

Global sales of biologics estimated to approach $400 billion in 2024, more than doubling in 10 years.
Antibody-Based Research Has Created Blockbuster Medicines

<table>
<thead>
<tr>
<th>Product</th>
<th>Sales</th>
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<tbody>
<tr>
<td>Humira</td>
<td>$20.5 b</td>
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<tr>
<td>Optivo</td>
<td>$7.6 b</td>
</tr>
<tr>
<td>Enbrel</td>
<td>$7.4 b</td>
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<tr>
<td>Keytruda</td>
<td>$7.2 b</td>
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<tr>
<td>Herceptin</td>
<td>$7.0 b</td>
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<tr>
<td>Avastin</td>
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<td>Rituxin</td>
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<td>Eylea</td>
<td>$6.7 b</td>
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<td>Remicade</td>
<td>$6.4 b</td>
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<tr>
<td>Stelara</td>
<td>$5.3 b</td>
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</table>

Top 10 Antibodies all at $5 b or more in annual revenue

Source: La Merie Publishing, 2019
OmniAb: A Best-in-Class Technology
Our Animal Platforms

OmniRat
An industry-leading patented, validated human antibody rat

OmniMouse
Added species yields additional antibodies and increased epitope coverage

OmniFlic
Rat with single common light chain, designed for bispecific human antibodies

OmniChicken
3rd species with unique epitope coverage
OmniClic™ to launch in 2019

Four animal platforms & three species create one of the broadest antibody repertoires available

Additionally, common light chain OmniChicken for bispecifics (OmniClic™) launched in 2019
OmniAb Technology

• 2019 was the most productive year for new licenses in OmniAb’s history, adding 9 new partners including large multinational players

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

• Continued innovation and investment, with launch of new animals and acquisition of Ab Initio antigen technology

Since acquisition, Ligand has nearly tripled the number of partners leveraging OmniAb, and the number of programs in development is accelerating
Internal Antibody Programs

Creating Value for New Out-Licensing deals

• Programs initiated in mid-2018, leveraging our existing expertise

• Five immuno-oncology targets selected, based upon:
  
  1. Biology with broad clinical interest
  
  2. Evolutionary distance advantages of chicken
  
  3. Possibility of multiple mode use (monospecific antibody, bispecific or CAR-T) and potential for combo therapy

• Partnering package to include set of novel fully-human antibodies

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<th>Target</th>
<th>Oncology Area</th>
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<td>B7-H3</td>
<td>Melanoma, Others</td>
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<tr>
<td>CD38</td>
<td>Multiple Myeloma</td>
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<td>ICOS</td>
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<td>TIGIT</td>
<td>Advanced Metastatic</td>
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<tr>
<td>TIM-3</td>
<td>Advanced Metastatic</td>
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</table>
Captisol Technology

• 2019 was the strongest year ever for Captisol
  – Highest level of materials sales
  – Added 9 new clinical and commercial stage partnerships
  – New drug and market approvals

• Ligand continues to invest in expansion of Drug Master Files in U.S., Canada, Japan and China and into manufacturing and distribution efficiencies

Captisol projected to grow 5-10% for the next several years
# Partnered Pipeline Snapshot (January 2020)

<table>
<thead>
<tr>
<th>Partner</th>
<th>Program</th>
<th>Therapy Area</th>
<th>Technology</th>
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<th>Phase 2</th>
<th>Phase 3</th>
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<td>Pipeline includes &gt;10 additional Phase 3 or Pivotal 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
Major Potential Pipeline Events

<table>
<thead>
<tr>
<th>Program</th>
<th>Partner</th>
<th>2020</th>
<th>2021</th>
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<td>PVT-022</td>
<td>Palvella</td>
<td>Pivotal data</td>
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<td>IMVT-1401</td>
<td>Immunovant</td>
<td>Phase 2 data</td>
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<td>CS1001</td>
<td>C-Stone</td>
<td>China filing, Phase 2/3 data</td>
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<td>Sutimlimab</td>
<td>Sanofi</td>
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<td>Lasofoxifene</td>
<td>Sermonix</td>
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<td>Amgen</td>
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<td>Sparsentan</td>
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<tr>
<td>VK-2809</td>
<td>Viking</td>
<td>Phase 2b data</td>
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</table>

Most substantial calendar of events for a 12-month outlook in Ligand’s history

Based on clinicaltrials.gov or partner disclosures
LIGAND: Driving Innovation to address major medical needs