Research Models & Services

Colin Dunn, Ph.D.
Corporate Senior Vice President,
Global Research Models & Services
Research models & human cells are foundational tools spanning the research and development continuum and beyond.

~1 of 2
Small models sold in Western markets is a CRL model.

~$1.7B
RMS market sector opportunity.

#1
position in research models.

HemaCare/Cellero involved in 100% of FDA-approved cell therapies*.

>70 years of innovation and leadership in laboratory animal science.

* Excludes cell transplantation and cell-based regenerative medicine products.
Research Models & Services (RMS)

➢ Global leader in breeding and distribution of research models
  ▪ Largest selection of the most widely used research model strains in the world
  ▪ Expertise in biosecurity supports production of high-quality models, reducing risk to critical research

➢ Global footprint with facilities strategically located in close proximity to clients
  ▪ Increasing presence in high-growth China market

➢ Premier provider of services that support the use of research models in discovery/development of new molecules
  ▪ Genetically Engineered Models & Services (GEMS)
  ▪ Research Animal Diagnostic Services (RADS)
  ▪ Insourcing Solutions (IS)

➢ Acquired cell supply businesses HemaCare and Cellero in 2020
  ▪ Enhances RMS segment’s growth profile and ability to supply biomaterials to clients
  ▪ Focused on providing clients with critical research tools to support their drug research, early-stage development, and manufacturing activities

CRL 35%

Jackson 18%
Envigo 6%
Taconic 6%
Janvier 2%
Other 33%

RMS Current Addressable Market Sector: $1.7B
(including HemaCare/Cellero & IS)

Sources: CRL management estimates.
C&GT Spans the RMS Portfolio

- Humanized immunodeficient rodent models using human cellular materials are critical for C&GT development and preclinical safety assessment
  - Many cell and gene therapies are in the area of oncology (i.e. CAR T therapies)

- Strong presence in the key Cambridge and South San Francisco biohubs offering turnkey CRADL vivarium space (Charles River Accelerator and Development Labs)
  - Attracting a range of biopharma companies – small and large
  - Key cell supply clients of HemaCare/Cellero have occupancy in our CRADL facilities emphasizing the role of CRADL in supporting C&GT clients
  - Additional synergies for CRADL from growing biotech clients providing new business opportunities in the GEMS business
    - Illustrates the highly bespoke nature of the in vivo models that clients use in their R&D programs
  - Our investments in CRADL will expand to other geographies with biotech hubs
HemaCare and Cellero Join Forces with Charles River

Advancing discoveries across the cell therapy continuum by providing high quality human-derived biological products and services

A leading provider for cell supply across healthy donors, patients, research/RUO, and GMP

Cell supply market sector expected to grow at ~30% CAGR to $2B in 10 years
HemaCare and Cellero Expand Scientific Capabilities in the High-Growth Cell Therapy Sector

**ENHANCES SCIENTIFIC CAPABILITIES**
- Premier, leading providers of research, clinical, and CGMP-quality human-derived cellular products used in allogeneic (donor-derived) and autologous (patient-derived) cell therapies
- Differentiated by customizable, reliable, and recallable highly characterized donor network
- Differentiated R&D portfolio of specialty immune cells and assays, such as antigen-specific T-cells

**INCREASES EXPOSURE TO HIGH-GROWTH MARKET SECTOR**
- Addressable market sector for cell supply products expected to increase from ~$200M today to nearly $2B in 10 years
  - At least 30% CAGR
- Driven by expected rapid increase in cell therapy product approvals

**CREATES A COMPREHENSIVE CELL THERAPY SOLUTION**
- Cell therapy developers can work with one scientific partner iteratively throughout the discovery, development, and manufacturing processes
  - Enhances client retention and accelerates biopharmaceutical clients’ speed to market

**CELL SUPPLY OPPORTUNITY**
- ~2,000 cell therapy programs in development today (Preclinical to Phase 3); ~two-thirds in preclinical stage
- ~$1.5M (2) est. spend per program on human biomaterials for autologous cell therapies (Preclinical-Phase 3)
- ~75% (1) of these cell therapy programs addressable by HemaCare/Cellero
- ~$3-$4M (2) est. spend per program on human biomaterials for allogeneic cell therapies (Preclinical-Phase 3)

(1) Based on analysis of ~900 cell therapy compounds in development excluding Asia-Pacific.
(2) Assumes $0.3-$0.5M spent per development phase for research and process development; For allogeneic cell therapies only, assumes an additional $0.5M-$1M per clinical development phase for manufacturing (does not include potential commercial manufacturing spend).
Enhancing CRL’s comprehensive solutions for cell therapies

Specialty Services:
- Coast-to-coast cell collection services ensure supply chain continuity
- Healthy and disease-state donor collections
- Patient collections for cell-based therapies
- Customized assay development
- Customized product development including antigen-specific T cells
- Contract immunology research services
# Global Cell Therapy Supply Chain Leadership

Delivering an easy-to-use, end-to-end cell therapy supply chain solution

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<tr>
<td>• Donor management</td>
<td>• Normal &amp; disease state cell collections for autologous &amp; allogeneic therapies</td>
<td>• High yield/quality</td>
<td>• Product release testing for GMP cellular materials including cell recovery, viability, sterility, endotoxin, &amp; mycoplasma</td>
<td>• Global logistics team</td>
<td>• Cleanroom access</td>
<td>• Cell banking &amp; formulation</td>
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<td>• Recallable donor pool</td>
<td>• High-quality cells</td>
<td>• Customization</td>
<td>• Best-in-class cryomedia</td>
<td>• Specialty logistics for international &amp; complex shipments</td>
<td>• GMP capabilities</td>
<td>• Integration &amp; bridging with GMP manufacturing for ease of scale-up</td>
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<td>• Donor recruitment &amp; retention</td>
<td>• Research use, clinical grade, &amp; GMP-compliant</td>
<td>• Scalable &amp; automated processes</td>
<td>• Cryostorage &amp; biorepository services</td>
<td>• Customizable cell models</td>
<td>• Critical media, buffers, &amp; reagents for stable, high-quality finished product &amp; injectables</td>
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<td>• Donor screening &amp; characterization</td>
<td>• Global footprint</td>
<td>• GMP cell isolation &amp; processing</td>
<td>• Cold chain logistics &amp; product management</td>
<td>• Exclusive antigen-specific T cell lines</td>
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<tr>
<td></td>
<td>• Global footprint</td>
<td>• Biostorage</td>
<td>• Secure supply chain management with GMP documentation</td>
<td>• Cell culture for customized selection &amp; expansion</td>
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<td></td>
<td>• Human stem cells/CD34+ mobilized cells</td>
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<td>• Stability testing</td>
<td>• Critical media, growth factors, &amp; other reagents</td>
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<td>• Cord blood access</td>
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<td>• Disease tissue access</td>
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- Highly respected products/services with strong recallable and reliable donor network
- Broad cell supply access and global footprint
- Automation & digital logistics to enhance speed, efficiency, security, and consistent supply
- Optimized “solutions” to make cell therapy “plug-and-play” with cells, media, growth factors, and other critical reagents
Key RMS Growth Drivers

1. **Continue China expansion**
   - Support double-digit growth amidst healthy funding environment

2. **Drive Insourcing Solutions and GEMS growth**
   - Expand CRADL footprint; enhance IS penetration; Expand GEMS strategic relationships

3. **Target growth in biotech and academia**
   - Targeted sales strategies aimed at growing biotech and academic markets

4. **Enhance digital enterprise**
   - Enhance client experience and productivity through innovative uses of technology

5. **Cell supply strategy**
   - Excel in customization from a deep donor pool as the trusted partner for RUO and GMP materials