A Montgomery College Case Study: growing a $2.36 billion in revenue biotech workforce

Niall Carolan, PhD, PMP
National Symposium on 21st Century Community Colleges
March 15, 2011
CASE STUDY OVERVIEW

PART 1:
Human Genome Sciences (HGS) Company Background
HGS’ Biotech Workforce & Hiring Strategy
HGS & Montgomery College Partnership: HGS’ perspective
• Local Level
• National Level

PART 2:
Montgomery College perspective
HGS COMPANY BACKGROUND

Human Genome Sciences exists to place new therapies into the hands of those battling serious disease

Founded in 1992

Over 1000 employees

Publicly traded on NASDAQ

Mid Stage & Late stage biopharmaceutical company

Cash and investments at Sept 30, 2010: $1.0 billion
# HGS Mid-Stage & Late-Stage Drug Pipeline

<table>
<thead>
<tr>
<th>Name</th>
<th>Indication</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>BLA Filed</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENLYSTA®</td>
<td><em>Systemic Lupus</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raxibacumab</td>
<td><em>Inhalation Anthrax</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mapatumumab</td>
<td><em>Cancer</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HGS-1029</td>
<td><em>Cancer</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENLYSTA</td>
<td><em>Vasculitis</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENLYSTA</td>
<td><em>Post-Renal Transplant</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENLYSTA</td>
<td><em>Additional Autoimmune</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-CCR5 mAb</td>
<td><em>Ulcerative Colitis</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darapladib</td>
<td><em>Cardiovascular Disease</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albiglutide</td>
<td><em>Type 2 Diabetes</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LEAD

EMERGING

GSK
HGS BIOTECH WORKFORCE
HGS BIOTECH WORKFORCE

Workforce Skill set:

• Technical/ complex equipment operations
• High level of automation/ computer interaction
• GMP Procedures & Documentation (SOPs, Batch Records)
• Regulatory Agency Oversight
• Avoid Errors: Very High Batch Costs

Targeted Workforce: Manufacturing

• Approximately 20% of the company work in Manufacturing
• Close to 100 people hired in past 15 months
• Spans HGS’ 4 GMP Manufacturing Facilities
### HGS HIRING STRATEGY

**Important!** Need alignment between community college programs and local industry hiring strategy. Market Driven workforce.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Details</th>
<th>HGS Preference?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Year Degree</td>
<td>University</td>
<td>Yes</td>
</tr>
<tr>
<td>2 Year Associates Degree</td>
<td>Community College (Montgomery College)</td>
<td>Yes</td>
</tr>
<tr>
<td>High School Education</td>
<td>No biotech knowledge or job experience</td>
<td>No</td>
</tr>
</tbody>
</table>
# HGS Hiring Strategy: Shift Towards Community Colleges

<table>
<thead>
<tr>
<th>Category</th>
<th>HGS 2005</th>
<th>HGS Now</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Candidate</strong></td>
<td>• Targeted: 4 yr degrees &amp; 2-4 yr experience</td>
<td>• Preferred: community college (Blend)</td>
</tr>
<tr>
<td><strong>Education Preference</strong></td>
<td>• 4 Year Degree: “Theoretical Knowledge”</td>
<td>• Community College: More hands-on practical training</td>
</tr>
<tr>
<td><strong>Hiring Approach</strong></td>
<td>• Opportunistic: From other Biotech Companies….. not sustainable</td>
<td>• HGS provides additional new hire training</td>
</tr>
<tr>
<td></td>
<td>• Longer time to fill positions</td>
<td>• Bigger pipeline: quicker to fill positions</td>
</tr>
<tr>
<td><strong>Retention</strong></td>
<td>• After 2 yrs bored.</td>
<td>• Better Retention: The job is above what’s expected</td>
</tr>
</tbody>
</table>
TRANSITION OF BIOTECH NEW HIRES

- Candidates
  - 4 Year Degree
  - Community College As. Degree

- Orientation
  - New Hire Orientation Program (4 weeks)

- On-going Job Training
  - Technical
  - GMP
  - Safety
  - Individual & Team Development
VIDEO: COMMUNITY COLLEGE SUCCESS STORIES

Professor Collins Jones & Ritchie Vehemente
HGS & MONTGOMERY COLLEGE PARTNERSHIP: ‘LOCAL’ LEVEL

1. Biotech Program Support
   • HGS participates on Biotech Program Advisory Board
   • Equipment donations
   • Curriculum review / Curriculum sharing
   • Student Tours @ HGS
   • Teaching Assistance: 1 HGS adjunct professor & Guest lectures

2. Recruitment Assistance into the Community College
   • Present/ Participate at Teachers Workshops
   • HGS Scholarships to Montgomery College per successful hire
   • HGS take on Part Time contractors/ Internships
   • HGS Open House for Hiring Ramp ups
HGS & MONTGOMERY COLLEGE PARTNERSHIP: ‘NATIONAL’ LEVEL

Driving a nationwide approach to improving the Biotech workforce

Since 2006, both are partners in NBC2 Biotech Industry & Colleges Nationwide Collaboration (NSF funded)

NBC2 Board: 20 Industry & 14 Education Partners
• HGS & Montgomery College plus: Lonza, GSK, Pfizer, Biogen,…

Developed Skill Standards and a Global Biotech Curriculum
• Textbook
• Lab Manuals & Instructor Guides
• Computer Simulation Training
“At Human Genome Sciences our people are our most important resource and we never take them for granted”