Initiation
Overweight

ICEL, ICEL US
Price: $13.53
Price Target: $18.00

Cellular Dynamics

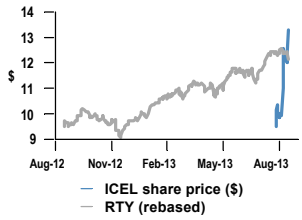
Stem Cells for Everyone: Initiating with Overweight and $18 PT

We are initiating coverage on Cellular Dynamics International (ICEL) with an Overweight rating and December 2014 price target of $18. The company is a first-mover and leader in industrialized stem cell manufacturing, including human induced pluripotent stem cells and custom products, with a focused pipeline, increasingly validated technology platform and strong competitive advantage due to scale and cost effectiveness. Despite expected net operating losses for next few years, we see significant revenue ramp and margin expansion ahead, led by higher rates of adoption from biopharmaceutical companies, as well as growth in the stem cell banking market and, ultimately, the emergence of cellular therapeutics.

- **Targeting significant markets within *in vitro* research, stem cell banking and, ultimately, therapeutics.** With a range of custom and off-the-shelf products, including four lines of human induced pluripotent stem cells (cardiomyocytes, neurons, hepatocytes, endothelial cells), CDI targets three large markets: *in vitro* research for testing the safety and efficacy of drug candidates (~$3.5B); stem cell banking (~$1.3B); and cell therapy (~$5.0B). We believe CDI is in a strong position to drive penetration in all three markets, with *in vitro* research representing the key near-term opportunity.
- **Pipeline creates multiple opportunities for additional growth.** CDI's focus is on the industrialized production of induced pluripotent stem cells, and this acute focus should allow the company to establish a steady and increasing customer base of pharmaceutical companies. Further, seven more products in the pipeline should provide multiple additional opportunities for growth.
- **CIRM and pharma agreements provide further technology validation.** CDI has >130 customers, including 18 of the top 20 pharma companies (and larger agreements with AZ, LLY, GSK) with average revenues from the top ten now >$500K. Importantly, the California Institute for Regenerative Medicine (CIRM) also awarded the company with a $16M stem cell banking grant, representing a significant win in terms of revenues and technology validation.
- **Attractive growth profile and margin opportunity should allow for valuation upside over time.** We forecast a five-year revenue CAGR of 54% (2013-2018), driven by penetration in core markets and a strong pipeline. While gross margins may improve due to mix, we expect CDI to continue investing in the business and, as such, do not expect profitability for the next several years. Our December 2014 DCF-derived price target is $18, and assumes a 2% terminal growth rate and CAPM-derived WACC discount rate of 12.5%.

Life Science Tools & Diagnostics
Tycho W. Peterson AC
(1-212) 622-6568
tycho.peterson@jpmorgan.com
Bloomberg JPMA PETERSON <GO>
Patrick Donnelly
(1-212) 622-9735
patrick.donnelly@jpmorgan.com
J.P. Morgan Securities LLC

Price Performance



Cellular Dynamics International (ICEL;ICEL US)

FYE Dec	2011A	2012A	2013E	2014E	2015E
Revenue ($ mn)					
Q1 (Mar)	1	1	3A	7	12
Q2 (Jun)	0	1	3	7	12
Q3 (Sep)	0	1	3	7	12
Q4 (Dec)	1	3	4	9	19
FY	3	7	13	31	55

Source: Company data, Bloomberg, J.P. Morgan estimates.

Company Data	
Price ($)	13.53
Date Of Price	16-Aug-13
52-week Range ($)	13.64-9.50
Market Cap ($ mn)	200.95
Fiscal Year End	Dec
Shares O/S (mn)	15
Price Target ($)	18.00
Price Target End Date	31-Dec-14

See page 29 for analyst certification and important disclosures.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

J.P.Morgan

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Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

J.P.Morgan

Investment Thesis

Cellular Dynamics (ICEL)

Overweight

Targeting significant and growing markets within *in vitro* research, stem cell banking and, ultimately, therapeutics

CDI aims to be a leader in three markets: the ~$3.5B market for *in vitro* research, ~$1.3B market for stem cell banking and ~$5.0B market for cell therapy. By way of background, CDI's products use induced pluripotent stem cells (iPSCs), a more advanced and ethically sound form of human stem cells, to displace the market for surrogate models used within *in vitro* R&D for areas such as drug development and toxicity testing, where customers have historically relied on imperfect model systems (cadavers, animal cells). As evidence of this success, CDI now has >130 customers, including 18 of the top 20 big pharma companies, while average revenue from the top ten customers has increased from $445K in 2012 to $516K as of the March quarter. Beyond research, CDI is focused on building out a stem cell banking business and received a $16M grant from the California Institute for Regenerative Medicine (CIRM), as discussed below. A third market, cell therapy, remains nascent, but potentially large, with the caveats of a stringent regulatory environment, although several trials are being run on iPSCs to determine therapeutic capabilities.

Pipeline provides multiple opportunities for additional growth

Unlike other companies in the iPSC space, CDI has an exclusive focus on iPSCs and supplying pharma companies with the means to conduct R&D with higher quality, greater quantity, and differentiable stem cells. The company currently has four iCell products, as well as a customizable product specific to individual blood samples, called MyCell. In the pipeline are seven more ideas under development – six of which are new iCell products, and one of which is a cleaner, more precise method to induce pluripotency in cells that should allow for virtually footprint-free cellular engineering. We believe this product pipeline will create the traction needed for a revenue ramp to profitability in the next few years.

CIRM and pharma agreements provide further validation of the technology

Contingent upon CIRM's $16M grant to CDI is the manufacturing of three iPSC lines each for 3,000 different individuals. Importantly, we believe the stem cell banking business will bring in significant revenue once developed, while also positioning CDI well for a cell therapy business down the road, as it will provide mass quantities of cells to conduct research and clinical trials in the future. Beyond CIRM, the company also has publicly disclosed agreements with a number of pharma companies, including AstraZeneca, Eli Lilly and GlaxoSmithKline.

Strong competitive positioning should provide high barriers to entry

CDI operates in a space that is not unexplored; however, the company has a significant first-mover advantage with respect to industrializing the manufacturing process of iPSCs, which no company has successfully done, while the quality, scale, IP, and breadth of products should provide additional competitive barriers. Stepping back, CDI has a competitive business model: creating an industrialized process for iPSCs, keeping a full and complete audit trail to ensure transparency, gaining the support of the state of California (via CIRM's grant process) and continuing to develop products to drive robust growth in the business. This is further backed by a strong and experienced management and scientific team, the latter headed by James Thomson, the first person to derive human embryonic stem cells.

Attractive growth profile and margin opportunity should allow for valuation upside over time

We forecast a five-year revenue CAGR of 54% (2013-2018) driven by increasing penetration in growing markets and a strong pipeline. While we model product gross margins to improve in the near term due to mix, we expect CDI to continue to be focused on investing in the business to grow the top line, with significant SG&A and R&D spending until 2017, and do not expect CDI to turn profitable until 2018. Our December 2014 DCF-derived price target is $18, and assumes a 2% terminal growth rate and CAPM-derived WACC discount rate of 12.5%.

Risks to Rating and Price Target

Uncertainty around revenue ramp and lumpiness with pharma customers

With 35-45% of revenues typically coming in 4Q, the business is expected to remain lumpy, while the timing of future collaborations and partnerships adds uncertainty.

Longer-term, therapeutic business will bring regulatory considerations into focus

Currently, CDI has over 700 patents and patent applications around products and technology, but other than intellectual property, CDI does not face regulatory risk and is not subject to FDA scrutiny as their products are labeled for "research use only." However, if CDI were to expand into cell therapeutics in the future, it could face FDA regulation and other regulatory risks surrounding cell therapy lines.

Competitors entering iPSC market could add pricing pressure

The average selling price for CDI's products is $1,500/unit, with ~67% of that price actually being realized. A unit consists of one 96-well plate that, when filled, will hold ~1.5M iPSCs. We do not expect the company to lower prices in the near term, however, should competitors lower prices below those of CDI, this could cause downward pressure on CDI's prices, which might lead to uncertainty.

CIRM and other public-funded future customers, including NIH, remain exposed to government funding and, therefore, bring uncertainties

CIRM and NIH currently have limited funding by the state of California, and eventually there will be a freeze of funding by the government. The implications of this are not as certain due to a potential continuance of funding; however, we believe that a freeze in the funding of these public-funded customers of CDI might significantly impact the forecasted revenue ramp we have modeled for the future.

Company Description

Since Dr. James Thomson founded the company in 2004, Cellular Dynamics has grown to become the leader in the stem cell industry. With innovations in researching and manufacturing, Cellular Dynamics has come to market with multiple products: true human cells in multiple cell types (iCell products), induced pluripotent stem cells (iPCSs), and customized versions (MyCell products) of each of the aforementioned. With just 116 employees, Cellular Dynamics has revolutionized the stem cell industry and recognized product revenues both domestically and internationally. Its headquarters are in Madison, WI, and it also has fully equipped facilities in Novato, CA. The company is listed on NASDAQ under the ticker ICEL.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

Industry Overview

The market for stem cells today is largely dominated by the ethically divisive, and controversial usage of, human embryonic stem cells for potential disease treatment purposes. While human embryonic stem cells are pluripotent and, therefore, potentially have the ability to form all cells in the body, there are many legal and ethical issues that come from using cells extracted from the lining of a four-day-old human blastocyst.

Dr. James Thomson, the initial discoverer of human embryonic stem cells in 1998 and subsequent founder of Cellular Dynamics in 2004, is at the forefront of a revised and enhanced approach: the development and industrialized manufacturing of induced pluripotent stem cells (iPSCs) from adult humans. While the approach in and of itself is revolutionary, it also has the potential to expand the use of human induced pluripotent stem cells into new markets, including research reagents, drug development support tools, tailor-made medicines, and regenerative medicine. While the time to reach full commercialization for each market increases, respectively, the size of each market in dollars also increases exponentially. Put another way, the research reagents market, which has already been commercialized, has an estimated size today of ~$100M, while the drug development support tools market, which is close to commercialization and should be fully so in ~5 years, has an estimated size of ~$1B. Looking further out, the tailor-made medicine market is expected to be commercialized in ~5-10 years, with an estimated market size of ~$10B, while the regenerative medicine market should be commercialized in ~15-20 years with an estimated size of ~$10B.

For Cellular Dynamics, in particular, the opportunities lie in developing cells for *in vitro* drug discovery, toxicity testing and chemical safety, as well as stem cell banking and *in vivo* and cell-based therapeutic research. In aggregate, the market for *in vitro* cell-based technologies is estimated to be ~$10B. Included in this are expenditures on cells alone, which were >$3B in 2011 and expected to grow to >$5B by 2020. Also part of the market is stem cell banking, a vertical of >$1B today that is projected to grow to >$4B by 2020. The third, and ultimately larger, piece is the vertical for therapeutic products, which today includes ~$5B spent on cell-based *in vivo* technologies, although this is expected to grow to >$21B by 2020. Each of these areas is discussed at length below.

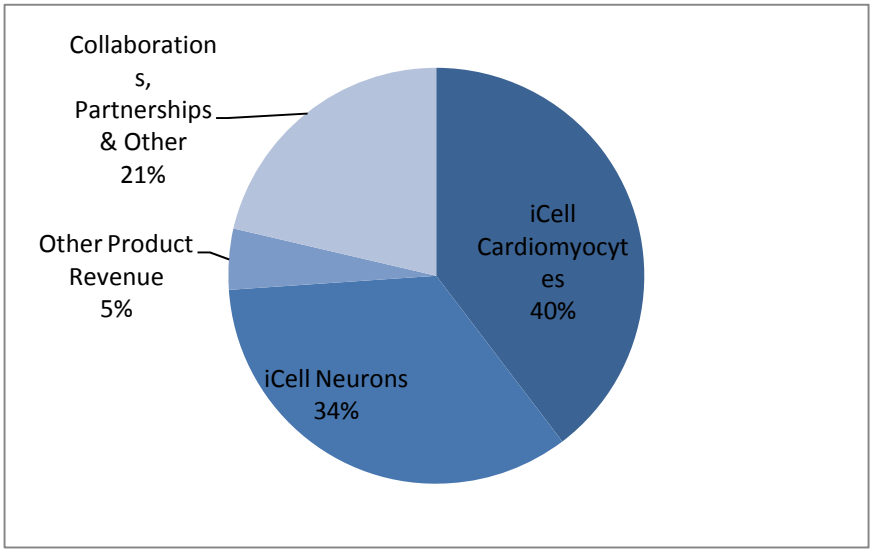
Corporate Overview

Cellular Dynamics International Inc. (CDI), first incorporated in 2004 and re-incorporated in 2007 under the same name, was founded by Drs. James Thomson, Craig January, Timothy Kamp and Igor Slukvin. Today, CDI is a leading developer and manufacturer of stem cell technologies used for *in vitro* and *in vivo* purposes, as well as stem cell banking. Differentiated tissue cells are produced in industrial quality, mass quantity, and high degrees of purity. The company is headquartered in Madison, WI with a second facility in Novato, CA and currently has 116 employees, including 56 in R&D. Cellular Dynamics listed on the NASDAQ exchange under the ticker ICEL in an IPO (3.8M shares, 24% of shares outstanding) for which J.P. Morgan was lead book-runner.

Over the past decade, Cellular Dynamics has researched, manufactured, and marketed induced pluripotent stem cells to allow for public access to the human cell through manufacturing stem cells, with the ability to both replicate indefinitely and transform into *any* cell type in the human body. The human cell is the smallest fully functioning operating unit of human biology, and Cellular Dynamics focuses on disease research, drug screening, and toxicity testing uses of these cells for the scientific world.

Looking at the broader market opportunity, there are a few large addressable markets for Cellular Dynamics. The addressable market for CDI is a ~$9.8B total market for cell-based technologies. This total market is made up of *in vitro* R&D, stem cell banking, and in vivo therapeutics. Specifically, ~$3.5B is spent on laboratory research and development. This market is projected to grow to ~$5.6B by 2020. The addressable market for stem cell banking is ~$1.3B currently and projected to grow to ~$4.4B by 2020. The addressable market for therapeutic iCell products is ~$5.0B for cell-based *in vivo* therapeutics, which is expected to grow to ~$21.4B by 2020.

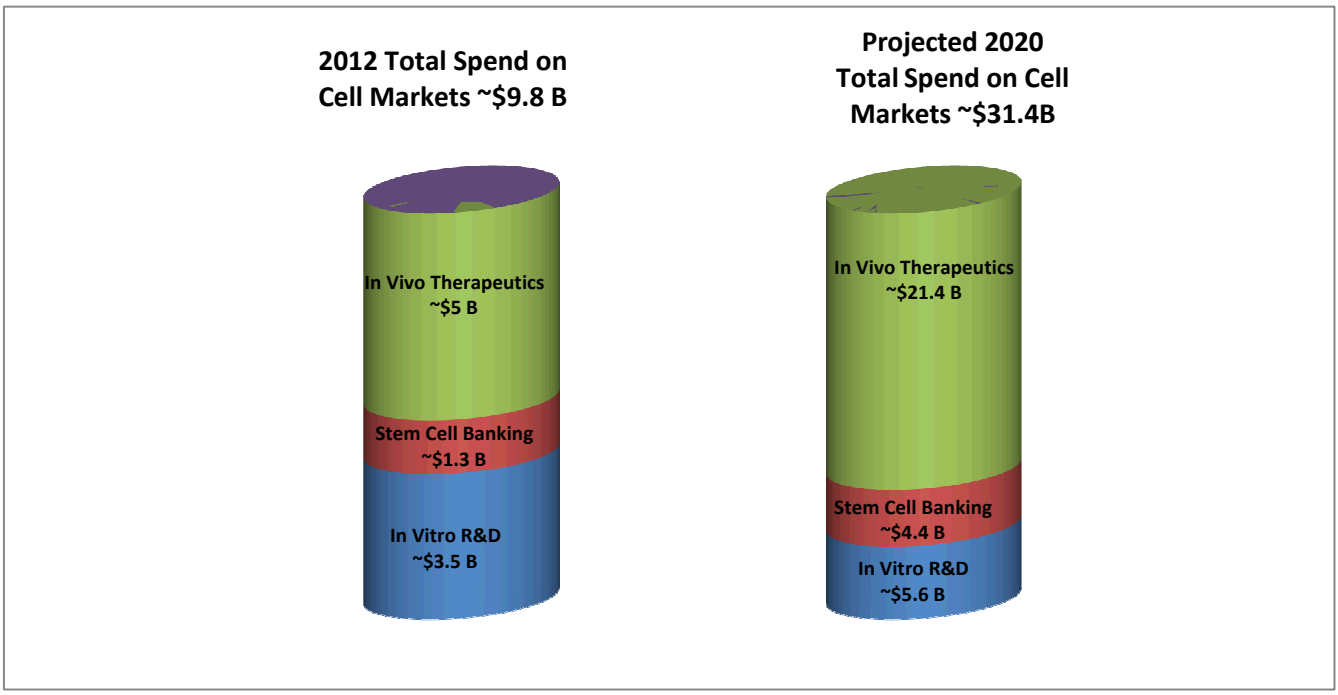
Figure 1: Share of 2012 Revenue by Segment



Source: Company data and J.P. Morgan estimates.

In 2012, iCell Cardiomyocytes contributed ~40% of sales while iCell Neurons contributed ~34% and sales of other products contributed ~5%. Revenues from Collaborations, Partnerships and Other contributed ~21% to total revenues for 2012.

Figure 2: Total Spend on *In Vitro* R&D, Stem Cell Banking, and *In Vivo* Therapeutics Should Increase from ~$9.8B in 2012 to ~$31.4B in 2020



Source: Company data.

In Vitro Research & Development

The current market for *in vitro* R&D with respect to cell-based methods has a significant issue of opportunity costs. Currently, there is over $3.5B spent on *in vitro* R&D; however, there is also a failure rate of >84% for drugs developed from current surrogate models for human cells (animal cells, cadavers).

Addressing this issue head on, Cellular Dynamics' current core competency lies in the manufacturing of industrialized iPSCs for use by pharma companies within *in vitro* R&D. By way of background, iPSCs are beginning to revolutionize the way that pharma companies are able to pursue R&D, since iPSC cells can be provided in unlimited quantities, at high quality and purity (with less variation than animal model cells or cadavers) and can be either be proliferated in an unlimited capacity or differentiated into any of the 208 cell types in the human body.

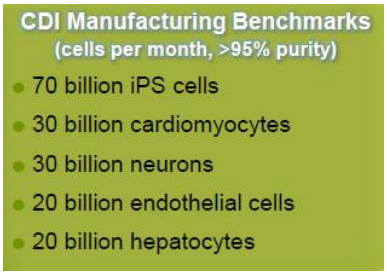
As CDI has clearly established quantity, quality, and purity reputation with respect to products, pharma companies have been able to use the iPSCs for toxicology and safety testing in drugs, as well as in drug development. The increasing rate of adoption by pharma companies has reinforced the reputation of the products and we expect to see a significant ramp in revenues over the intermediate to longer term, as CDI products pick up share and the markets further develop. As evidence of this trend, CDI now has >130 customers, including 18 of the top 20 big pharma companies, and while broader adoption by pharma is still in early stages, the company has also seen its profile rise with larger deals, including a Center of Excellence agreement with AstraZeneca, under which the two companies will collaborate to develop one or more new iCell products. Average revenue from the top

ten customers has also increased from $445K in 2012 to $516K as of the March quarter.

Stem Cell Banking

CDI's development of a stem cell banking business addresses a key problem in the market: currently, there is a limited supply of high-quality cells and tissues. The insufficient quantity constrains how much pharma R&D can begin to adopt the new technology of iPSCs.

Figure 3: To Date, CDI Has Manufactured >100B iCell Cardiomyocytes and Has the Capacity to Ramp Production to Meet Demand



Source: Company data.

However, we believe that Cellular Dynamics' industrialized manufacturing process for iPSCs is a great segue into a new area of business to store stem cell lines for eventual greater adoption by pharma R&D, as well as potential moves into cell therapy down the road. Stem cell banking has suffered in the past from either quantity or quality issues of the R&D models in storage; however, we feel that CDI's scale and quality technology will be able to address both of these key bottlenecks. By enabling big pharma companies to get supply of cells from a large storage bank, we believe CDI has the potential to become the industry leader in providing "disease in a dish" to promote and accelerate drug discovery.

In terms of capacity, CDI has now produced >100B iCell Cardiomyocytes and has the capacity to produce ~1B per day. Put another way, on a monthly basis, at >90% purity, the company can manufacture >70B iPSCs, 30B cardiomyocytes, 30B neurons, 20B endothelial cells, 20B hepatocytes and can simultaneously manufacture 2 of 4 iCell products. As part of the CIRM agreement, discussed in more detail below, the company also now has a second fully functioning facility in Novato, CA (in addition to 2K sq. ft. of manufacturing in WI) which should enhance the ability to manufacture iPSCs at an even greater rate.

Background on CIRM agreement

In 2004, the state of California approved Proposition 71 for stem cell research to give out $3B over ten years. The California Institute for Regenerative Medicine (CIRM) was created to execute this proposition. CIRM is a funder not unlike the National Institutes for Health, and is focused on spurring the growth of the market for stem cells and the field of regenerative medicine. It put together an applicant pool for those companies or individuals interested in receiving a grant to help further the induced pluripotent stem cell initiative. Some applicants were involved in stem cell banking initiatives, some were from other initiatives, or other countries, and some were individuals who just use iPSCs in their research and development work.

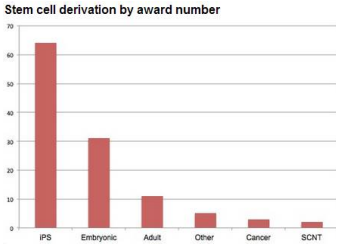
In March 2013, CIRM announced that CDI had won the competition and would be granted $16M of the $32.3M it was allocating for the induced pluripotent stem cell initiative. With this funding, CDI would be charged with producing three well-characterized iPSC lines from each of 3,000 selected donors. These donors will have express traits related to diseases and disorders, and the 9,000 total lines collected from the donors will be made widely available to stem cell researchers studying often intractable diseases.

In addition to the $16M to which CDI has sole rights, CIRM granted $10M to Coriell Institute for Medical Research to develop stem cell banking lines and CDI is the primary subcontractor for the Institute. We believe the grant to Coriell will have a

significantly positive impact on CDI's stem cell banking business and future revenues.

Contingent upon this grant from CIRM to CDI is oversight of the use of this money to monitor CDI's progress with induced pluripotent stem cells. CIRM will be doing audits of the facility and the work done with iPSCs. With this is in mind, we believe that the relationship between CDI and CIRM will be synergistic as CIRM learns more from CDI about induced pluripotent stem cells and CDI receives the financial benefits from the state of California.

Figure 4: CIRM Is a Clear Supporter of the iPSC Manufacturing Movement Given Its Hefty Financial Support of the Stem Cell Derivation Process



Source: CIRM Website.

Importantly, not only was the CIRM grant a big win in terms of an influx of cash, but it was also invaluable in terms of the publicity. One of the biggest hurdles for CDI, we believe, is getting its brand and product out to the market to become recognized as the leader in the space, and the CIRM deal clearly shows that the company has demonstrated an ability to manufacture iPSCs at a large, and cost effective, scale. Contingent upon the grant, CIRM will also closely audit and monitor Cellular Dynamics' actions in developing the stem cell bank initiative, which we believe to be a positive, as it will ensure that CDI is in compliance with general standards and it should improve public confidence, as well as pharma confidence.

In Vivo Therapeutics

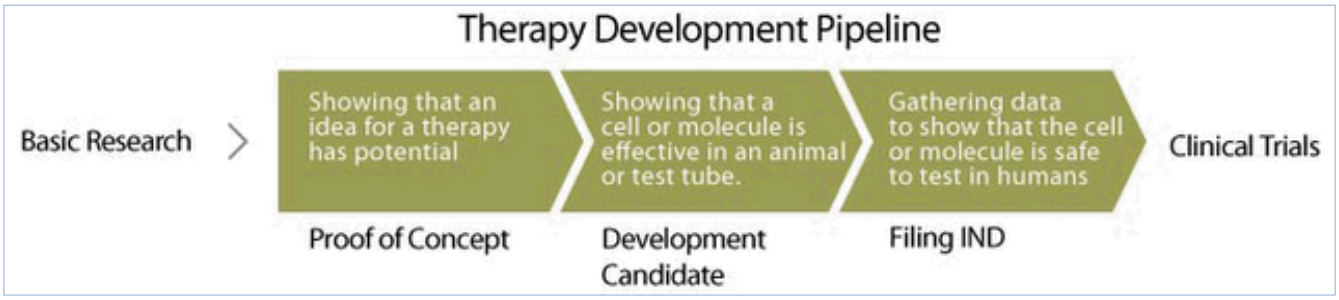
We believe the potential for industrialized iPSCs to gain traction in the market is significant enough that the opportunities for *in vivo* therapeutics are open-ended, however, there are many steps between Cellular Dynamics' current position in the business and scientific landscape, and the end-goal of widespread cell therapy practices by companies using iPSCs, not the least of which (as discussed below) is regulatory uncertainty. That said, the stem cell banking business being developed at Cellular Dynamics could be particularly significant for the prospects for cell therapy, as banking should enable the company to do research and go through pre-clinical trials in a much more efficient manner due to the ability to access mass amounts of high-quality patent-protected iPSCs.

According to Holland & Knight, a global law firm, there are many steps required to move regenerative medicine from the lab to the patient. Even the world's greatest medical idea must be churned through the process: FDA approval, health plan approval for coverage, proper billing codes assigned, and payment rates established that are acceptable to customers. In other words, FDA approval of cell therapy methods is not the end-all, be-all for iPSCs – there is still a long process of approvals and adoption that need to take place before a company, such as Cellular Dynamics, could actually begin to generate revenues from any potential *in vivo* therapeutics innovations down the road.

In addition to its already strong business model of products for specific cell-types in the body, Cellular Dynamics has a fully developed MyCell product line, customizable to donors' blood samples, which opens up the door for potential therapeutic uses of products in the future. This also opens up the door to FDA regulation if the therapeutic business is built out and attracts attention from the Administration. We do not see these plans as a risk currently as cell therapy is not a driver of near-term revenues and neither do we see it as a driver of expenses at the present time.

However, we believe Cellular Dynamics has done its basic research, entered into the proof-of-concept stage, and is now concentrated on performing pre-clinical research for the potential to be a development candidate for cell therapy. CDI has the great advantage of having own patented technology to create an industrialized iPSC line, whereas other players in the space are not nearly as prepared. It is also worth nothing that a number of academic centers have recently shown success in stem cell therapeutics, including the University of Arizona (beating heart path) and Massachusetts General Hospital & Northwestern Comprehensive Transplant Center (liver regeneration).

Figure 5: While Cellular Dynamics Is Still in the 'Basic Research' Stage, It Has a Big Leg-Up in Being Able to Take Advantage of its Industrialized Line of iPSCs Once It Reaches the 'Proof of Concept' Stage

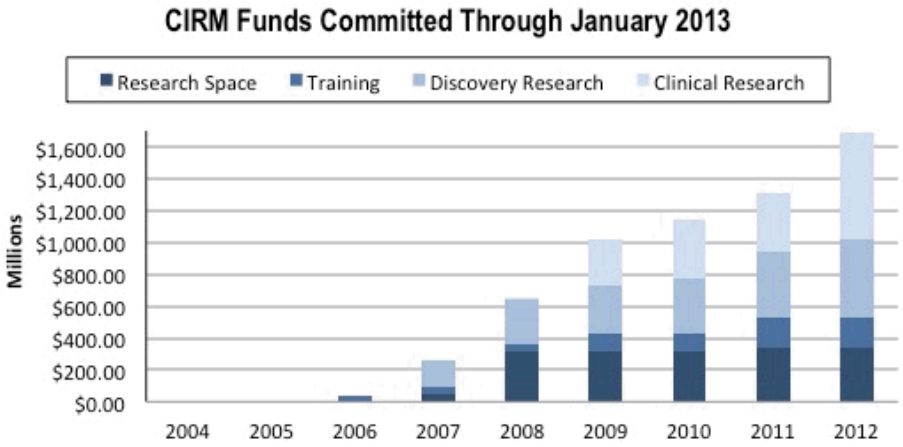


Source: CIRM Website.

Importantly, the previously discussed CIRM agreement not only affects the business model of CDI from the perspective of funding its building out of the stem cell banking segment, but it is also extensively involved in stem cell therapy development. Further down the road, when CDI begins to move from the proof-of-concept stage into the development candidate stage, we believe there look to be great funding opportunities from CIRM and other foundations dedicated to stem cells. CIRM has recognized the possibility for therapeutics growing off of the grants it gives to develop stem cell banking initiatives of iPSCs (Ethical and Policy Considerations for A Pluripotent Stem Cell Resource Center 2011 Update). The company has stated that because the possibility of cell therapy as an outgrowth of the stem cell banking initiative should not be ruled out, opportunities to comply with FDA requirements in the earliest stages should be considered as well, as discussed in the consent process when fielding for blood samples to fill the bank.

Before the therapeutics business can be built out, however, a lot of prep work needs to be done for any company looking to penetrate that potential market. According to Naomi Kleitman, Mahendra Rao, and David Owens in NIH-FDA collaboration report (published March 25, 2013) on the approval process for stem cell therapeutics, companies must make decisions at early stages that will affect the future of those companies in later stages of stem cell therapy, if they are able to get there. For CDI, the stem cell banking business, although enabled by the CIRM grant, is a great example of the company laying groundwork for when therapeutics is ultimately explored more as an industry, and gains traction with pharma companies, big and small.

Figure 6: A Large Percentage of CIRM's Allocations Are for Clinical Research and Discovery Research – Very Important Stages for the Stem Cell Therapeutics Process, Which We Believe CDI Will Become More Heavily Involved in Further Down the Road



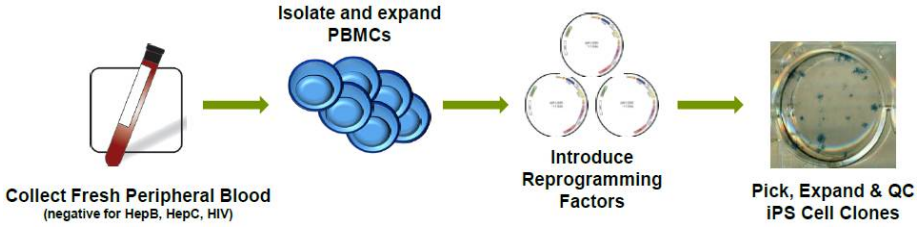
Source: CIRM Website.

Technology Overview

The process used by Cellular Dynamics contrasts quite sharply from the existing method of stem cell reprogramming in place today, and positions the company to revolutionize the uses of stem cells in the future, in our view.

The first step that Cellular Dynamics takes is to obtain a human biological sample of cells and to grow the sample under appropriate cell and laboratory conditions. Once grown, two or three plasmids that contain reprogramming genes are introduced into the cells.

Figure 7: The iPSC Derivation and Manufacturing Process

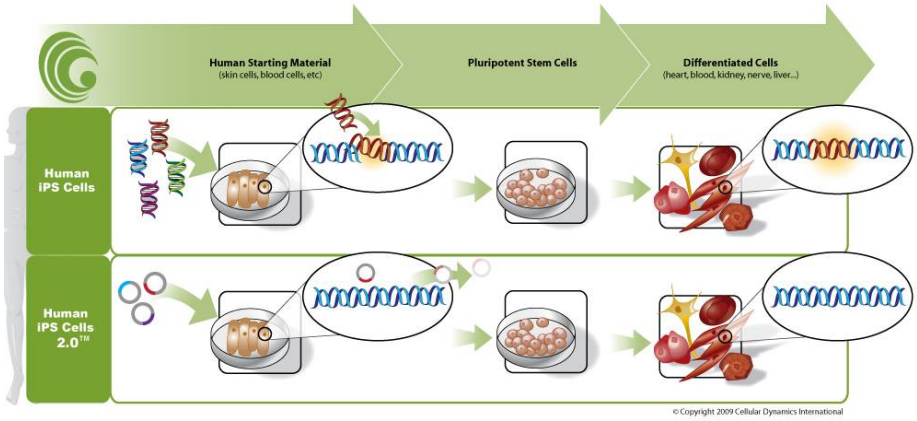


Source: Company reports.

The reprogramming genes are, as described in James Thomson's scientific paper in the May 8th copy of Science, non-integrating episomal vectors that remove the identity of the cell to allow for complete derivation into new cell types. This process of reprogramming is similar to deriving human embryonic stem cells, with the exception of being derived from adult somatic cells (human cells other than sperm or ova) rather than embryonic cells (cells taken from the inner cell mass of an early-stage embryo). The reprogramming genes work to turn genes in the cells of the blood sample on or off in order to reprogram the cells into stem cell state. The technology behind these reprogramming genes with non-integrating episomal vectors is complex. When these episomal vector genes are injected into the sample, a transient

expression of the four transcription elements occurs at a level sufficient to trigger reprogramming without those four transcription elements ever integrating into the genome of the cell. Once reprogramming concludes, the cells are then entitled induced pluripotent stem cells, or iPSCs.

Figure 8: Cellular Dynamics Has Developed a Non-Invasive Alternative to the Current Manufacturing of iPSCs



Source: Company reports.

Once these new iPSCs have been allowed to grow for approximately four weeks, although very fragile they are fit to be observed, researched, replicated indefinitely, and differentiated into specific cell lineages for which Cellular Dynamics has developed methods. According to Robin Feldman and Deborah Furth in a report on the intellectual property landscape for iPSCs (published in October 2010), the iPSCs were very similar to human embryonic stem cells in a few ways: morphology, proliferation, the expression of some embryonic stem cell marker genes (used to locate chromosomes associated with particular genes), and the formation of teratomas (an encapsulated tumor with tissue appearing to have origins in the three germ layers).

Risks to derivation of iPSCs

With any new technology to the market, there will be risks to quality. The increased exposure that Cellular Dynamics has to big pharma companies over time, the more feedback they will get on the quality of product. As noted in the competitive overview section, we feel that feedback/criticism in a market that is in its early days is likely to be constructive and not necessarily detrimental to a company's business in a space characterized by "trial and error."

An important risk that CDI must address, however, is the genetic memory of the iPSCs. The claim to fame for CDI's MyCell product is its ability to produce individualized iPSC based on the genetic makeup of the blood sample donor. However, if CDI reprograms the cells in a donor's sample and the reprogrammed cells do not have the same genome, untouched by the non-integrating episomal vectors employed by CDI, then we believe the company will have a fairly large technology issue with which to deal. Genetic memory is also a big component of the stem cell banking business that CDI is developing. If technology does not have full genetic memory, then the three lines (individualized) for each of the 3,000 people that CIRM has requested CDI to produce in return for the $16M grant will be all for naught.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

Figure 9: CDI Has Over 700 Patents and Patent Applications, but the Key Patents Surround Episomal Reprogramming Technology and License Agreements

Key Patents

Patent Type	Description
Episomal Reprogramming	– 42 US and foreign patents related to CDI's footprint free reprogramming technology – None of these patents will expire before 2029 – Includes the first filed patent application on the episomal method, which covers iPSCs from which CDI's MyCell product is made
Wisconsin Alumni Research Foundation (WARF)	– Agreement with WARF provides exclusive, worldwide license to certain patents covering episomal reprogramming using certain genetic factors – Licensed patents extend to at least 2028
Field Patent Family	– License agreement with Indiana University Research and Technology Corporation (IURTC) that provides CDI with exclusive, worldwide license to the Field patent family – Patent Family includes coverage of iPSC methods such as lineage purification technique to make pure cultures of differentiated cells – IURTC retains the right to use the licensed patent rights for noncommercial, educational, and research purposes
Yamanaka Patent Estate	– License agreement with the iPS Academia Japan (iPS AJ) provides CDI with non-exclusive, worldwide, research use only license to basic patent rights filed by Yamanaka (first-ever deriver of iPSCs) – Includes 39 US and foreign patents expiring between 2026 and 2029, most significant of which covers the Yamanka set of reprogramming factors – CDI has agreed to pay iPS AJ a license fee and royalties including a minimum annual maintenance fee
Trade Secrets	– In addition to its portfolio of patents, CDI also maintains many of its techniques, protocols, and procedures as trade secrets

Source: Company reports.

Competitive Analysis

The standard for *in vitro* research as well as therapeutic work is based around the surrogate model that has cells derived either from human cadavers or sacrificed or live animals. These models, though only proxies, are imprecise and inaccurate for the purposes of studying human biology. Animal and cadaver cells have poor predictive ability for safety toxicology and are not available in consistent volumes and standardized specifications. These surrogate models have >84% failure rate for *in vitro* research and drug development.

The limitations surrounding the stem cell banking space persist due to the lack of access to mass quantities of cells and tissue types derived from the currently available starting samples.

The market for therapeutic cell development has limited expandability given the variable quality of the harvested cells that are to be reproduced for cell and tissue therapy.

Cellular Dynamics hopes to differentiate itself from the competition through the employment of actual human blood samples to create stem cells to revolutionize the space through giving blanket access to the smallest fully functioning unit of human biology.

Currently, CDI has no serious competitors that can develop and manufacture iPSCs in such large quantities for research and drug screening. However, there are multiple home-brew manufacturers, other pluripotent cell manufacturers, and existing cell models. The home-brew competition consists of government, academic and industrial research labs that try to utilize iPSC technology to roll out own stem-cell-based products. However, given that this segment of competitors lacks the personnel, purity, scalability, as well as intellectual property, home-brew will have a tough time competing if all of the deficiencies above are efficiencies for CDI. Other pluripotent stem cell producers include companies such as Axiogenesis AG, Cellectis, General Electric Co., Life Technologies Corporation, Lonza Group Ltd. and Sigma-Aldrich.

The ambitions of pharma

Pfizer, the world's largest research-based pharma company, announced in 4Q08 that it was going to invest $100M to drive an international stem cell development program. The news on Pfizer's research effort has since dissipated and it does not appear that the company is in development of any stem cell initiative at this point in time. However, in recent December 2012 news, three drug companies, Pfizer, Roche, and Sanofi, are spending $72.7M total to develop Stembancc, a stem cell banking initiative based out of England. It is considered a project, not a company, but this five-year manufacturing process aims to generate 1,500 iPSC lines from 500 people. The goal of this project is very similar to that of CDI – to make available those cell lines to researchers. However, due to the short-term life of the project and the small scale of the manufacturing process, we do not see Pfizer's effort to feed its stem cell research business as a competitive threat to CDI's full-blown iPSC production process.

GE Healthcare, the life sciences division of GE, does market a cardiomyocyte, but it is derived from ethically and politically divisive human embryonic stem cells

(hESCs). Given the controversy around hESCs, we consider CDI much more competitive from a stem cell product standpoint.

AstraZeneca has also seen the benefits of iPSCs and has established an iPSC unit within the company to provide R&D with supply of iPSCs. However, the company states that it does not have the necessary skills or technologies in-house and therefore must bring in external partners and research institutes, essentially outsourcing means of obtaining iPSCs.

The attempts made by Pfizer, GE, Lonza, Life Technologies and AstraZeneca to develop stem cells in-house are representative, in our view, of a larger theme of pharma and others not being capable of developing sustainable or successful in-house stem cell production processes.

Lonza, the multidivisional life sciences company, does however have many of the boxes checked off for being a good competitive candidate. The company has a wide array of iPSC research done already and offers services such as cell therapy, media customization services, and bioassay services. However, according to the Lonza website, we believe it has only specific pluripotent stem cell products directed toward manufacturing motor neuron progenitors to treat neurodegenerative disease. While a significant area in human biology, Lonza is very narrow in current product offerings.

Life Technologies, despite being the sole distributor of CDI's products to third parties, is also involved with distributing other products for the episomal reprogramming of adult somatic cells. Among many other products, Life markets its Essential 6 Medium, which it manufactures and distributes, in competition with CDI's Essential 8 Medium. Essential 6 Medium uses the same base formulation as Essential 8, however it does not allow for reprogramming or differentiation like Essential 8 does, according to Life Technologies' website. It also markets multiple products for cell culture, cell engineering, and cell analysis.

In 2006, Life Technologies announced that Mahendra Rao, NIH stem cell section chief, would lead the development of a new stem cell platform based in human embryonic stem cells. They planned to form a Stem Cell and Regenerative Medicine business that would further the stem cell research movement. However, in the years after this announcement with some proprietary technology around human embryonic stem cells becoming controversial across the stem cell research platform globally, Life Technologies began to distribute the technologies of other companies.

Overall, we do not see Life Technologies as a company on a path to become competitive with CDI as the agreement to be its sole distributor does not expire until 15 years from the effective date of agreement of June 2012 or the expiration date of the license agreement with WARF for the Thomson reprogramming factors which expires in 2029, whichever is later, according to the S-1. The agreement is subject to termination should Life Technologies violate any part of the contract, so we believe that CDI does not feel threatened by any potential future Life Technologies' proprietary products or reagents.

Sigma-Aldrich, another competitive life science and technology company, also mentioned a new induced pluripotent stem cell program during its 2012 analyst day. We feel that Sigma-Aldrich labeling this program as innovative for the company in

2012 indicates that it has not developed enough as a stem cell business to compete with CDI's breadth and depth of product offerings and existing pharma contracts. It does offer the reprogramming factors for both embryonic and induced pluripotent stem cells to allow researchers and scientists to manufacture own stem cells, as well as an iPS Cell Design Studio to manufacture customized cell lines.

There are a few smaller companies that have attempted to enter the iPSC space, such as Aruna Biomedical. The end goal behind iPSCs is the same as that of CDI – research and development – but these competitors continue to use animal models as well as human embryonic stem cells to attempt it, despite also marketing a vector kit very similar to the reprogramming kit that CDI and other manufacturers of iPSCs use.

Stepping back, we believe that while there may not be any exactly comparable companies with regard to the large-scale manufacturing of iPSCs, there are certainly companies that play in the stem cell space and we believe that they should be viewed as competitors or potential competitors in a developing space such as induced pluripotent stem cells. We view a few of these companies as the closest benchmarking comparables: GenMark Diagnostics (GNMK), Fluidigm (FLDM), Abcam (ABC: London) and ReproCell (4978: Japan), a Japanese manufacturer of iPSCs that recently went public on the JASDAQ Securities Exchange.

In our view, ReproCell is the closest potential competitor to CDI; however, due to its recent IPO, the trading/operating metrics do not lend a meaningful comparison for the life science tools industry. The other companies mentioned, due to size, stage/growth profile, and customer characteristics are the most suitable companies to which CDI should be compared, in our estimation. The main risk of companies entering into the iPSC manufacturing space is capacity to commit resources to developing the business extensively. CDI is the only company that is fully dedicated solely to manufacturing iPSCs. We expect that significant capital commitments to developing, manufacturing, and marketing an iPSC line will be necessary in order to compete with CDI.

It appears from this competitive overview that Cellular Dynamics would have many companies in the space with which to compete; however, while these companies and home-brews may be able to manufacture pluripotent cells from human embryonic stem cells, the companies have not demonstrated the ability to develop iPSCs from adult human cells, as CDI has, rather than four-day-old embryonic cells. However, we have explored Reprocell further as we believe it may be an underestimated comp.

iPierian – a look at 'tauopathies'

iPierian is a player in the space that is also manufacturing iPSCs as CDI is doing, but that has end markets of and ambitions for cell therapy now rather than many years out like CDI. Through studies of Tau Proteins in iPSCs, iPierian looks to develop target molecules that will treat neurodegenerative diseases. That said, iPierian's current focus is solely on the brain, and it is not as diversified in its target market currently as CDI.

iPierian states that aberrant Tau proteins found in neurons have been proven to cause damage to the central nervous system and lead to neurodegenerative diseases, with

the idea that with a manufactured Tau Protein, one can control the contamination of neurons by unfit Tau Proteins through therapy, or 'tauopathies.'

That said, we do not believe iPierian poses strong competition to CDI, as the company is not diversified by products and not known to have a large customer base.

Reprocell – a competitor emerges from the east

In 2007, Shinya Yamanaka, in partnership with Kyoto University, developed the first-ever induced pluripotent stem cell. Reprocell is a Japanese biotech and stem-cell medical research company that recently listed on the JASDAQ exchange (June 26, 2013). It was founded in 2003 on the basis of the first human embryonic stem cell technology developed that same year in Japan, but it was developed on the basis of Yamanaka's breakthrough in stem cell manufacturing.

Reprocell has scientific founders and advisors that are closely tied to both Kyoto University as well as the University of Tokyo – universities that are large supporters of induced pluripotent stem cell development. The Japanese government, on the same day that Reprocell first traded on the JASDAQ exchange, approved the company's clinical research and use of iPSCs, making Reprocell the first company in the world to have that status. The stock traded up 472% in the first day of trading after the IPO pricing, making it the biggest jump for an IPO over $10M in Japan since 1999.

While Reprocell poses strong competition with respect to technology, one might reference the old adage: location, location, location. Reprocell's market cap is ~$1B and it already has approval on iPSC clinical research. However, its sales are largely contained with Japan. We do not see it as a small competitor, but we believe that CDI has a significant advantage with pharma companies in the U.S. even if Reprocell were to start marketing iPSCs in the states. Both Japan (especially, Tokyo) and Madison, Wisconsin – the headquarters of Reprocell and CDI, respectively – are hotspots for the stem cell industry and biomedical research industries.

CDI would be expected have a significant advantage with regard to domestic manufacturing laboratories and shipping facilities. Reprocell is likely to try to break into the US market; however, this is not to say that a competitive environment is a bad thing, in our view. A competitive environment for an industry like stem cells that is still in its early days could really spark growth in the market and provide the traction needed to cause a drastic increase in the rate of adoption by big pharma companies of the new iPSC method.

Product Overview

Cellular Dynamics currently offers a few specific cell type products, as well as a customizable iPSC line and reprogramming kit. Each cell type that CDI develops and manufactures for *in vitro* and *in vivo* use is built to precise specifications such as being >90% pure, derived in a virtually footprint-free manner that causes negligible damage, shipped cyropreserved to the customer, and unit size scaled to fit a 96-well plate. On top of this, Cellular Dynamics differentiates its products from the controversial and ethically divisive human embryonic stem cell space by taking its blood or skin samples from consenting adults rather than from the inner lining of a four-day-old human blastocyst.

Figure 10: Standardized iCell Product Solution, Tubes and 96-Well Plate

Source: Company reports.

Currently, CDI offers manufactured heart cells, neuron cells, blood vessel cells, and liver cells that will allow purchasers to commit to research projects otherwise not achievable before due to imprecise surrogate models such as cadaver or animal cells. The specific cell products allow for pre-clinical drug discovery, toxicity testing, and disease modeling. CDI also offers a line of customizable human induced pluripotent stem cells that can be reprogrammed according to the samples provided by the customer as well as differentiated into the iCell products already existing in CDI's product suite.

Below, we show each of the products that Cellular Dynamics currently offers.

Figure 11: CDI Offers a Wide Array of Products Ranging from Specific Cell Types to Customizable Cells and Reprogramming Kits

Products	Product description	Applications
iCell Cardiomyocytes	Highly purified human heart cells	Model systems for pre-clinical drug discovery, toxicity testing, disease modeling and other life science research
iCell Neurons	Highly purified human neurons	
iCell Endothelial Cells	Highly purified human blood vessel cells	
iCell Hepatocytes	Highly purified human liver cells	
MyCell	Human iPSCs reprogrammed from customer-sourced samples	Make iPSCs for stem cell banking and cell modeling of specific populations
	Human iCell products derived from MyCell iPSCs	
Media and reprogramming kit	Combination of three reagents used for reprogramming tissue into iPSCs	Making iPSCs for limited research use only

Source: Company reports.

In terms of IP, CDI has an extensive intellectual property strategy to protect its products from infringement of patent law. It has over 700 registered patents and patent applications to give its customers the freedom to operate with CDI's products without strings attached in terms of intellectual property rights.

Figure 12: Cellular Dynamics Has the Majority of Its Sales in the U.S., but from 2011 to 2012 We Can See a Trend of Revenues Getting More Diversified Globally

Geographical information—The following table provides percentage of total revenues by region, based on shipping locations:

	Year ended		Three months ended March 31,	
	2011	2012	2012	2013
			(Unaudited)	
United States of America	74%	66%	75%	57%
Europe	17%	24%	11%	34%
Japan	8%	5%	13%	8%
Other	1%	5%	1%	1%
Total	100%	100%	100%	100%

Source: Company data.

Pipeline

Cellular Dynamics currently has seven products in the pipeline that are either extensions of existing products, such as the iCell line, or new products to expand the business. CDI looks to continue to roll out lines of new cell types such as dopaminergic neurons, nociceptors, astrocytes, cardiac progenitors, blood progenitors, and skeletal muscle cells.

A new frontier that CDI is looking to break into is a virtually footprint-free method to manufacture induced pluripotent stem cells. Currently, CDI injects reprogramming genes into blood or tissue samples to reprogram the cells into stem cells; however, the genes inherently cause the risk of contaminating the sample. Thus, CDI hopes to develop a cleaner way to reprogram – namely, use an episomally derived line of iPSCs that are in full compliance with Current Good Manufacturing Practices (cGMP). This pure derivation should stifle many people's concerns over the contamination potential in manufacturing iPSCs as the process would then be virtually footprint-free and completely scalable.

Figure 13: CDI Is Currently in Development of Seven New Products

Product	Product description	Applications
Dopaminergic neurons	Brain cells that express the neurotransmitter dopamine	Dopamine production has been implicated in Parkinson's disease and other neurological disorders. Researchers are interested in how dopamine levels impact these diseases; some researchers believe that implanting pure dopaminergic neurons in Parkinson's patients would have therapeutic benefits.
Nociceptors	Pain receptor neurons	Researchers are interested in understanding how nociceptors work to gain a better understanding of the biology of pain, to quantitate it, and to find drugs to modulate it.
Astrocytes	Cells found in the brain that support neuronal function	These cells are synergistic with iCell Neurons. Customers frequently request astrocytes to build a more complete human neurological model. Astroycytes have also been implicated in multiple neurological disorders.
Cardiac progenitors	Cardiac precursor cells that, during human development, become all of the cell types in the human heart	Customers are interested in studying these cells to find compounds that may lead to cardiac repair or for use for therapeutic purposes.
Blood progenitors	Precursor cells for the human blood system	Researchers are interested in studying these cells to find compounds that will help repair the blood system or increase production of blood cells. In addition some researchers are interested in infusing or implanting these cells for therapeutic purposes.
Skeletal muscle cells	Skeletal myocytes are long, tubular cells that form the muscle fibers of the skeletal systems	Pure skeletal myocytes enable better understanding of the biology of various human diseases caused by mutations in genes critical and unique to muscle function (for example, dystrophin gene mutations that cause muscular dystrophy). In addition, the function of these cells is of interest to researchers studying general energy metabolism and metabolic disease.
Current Good Manufacturing Practices (cGMP) iPSC lines	Lines of episomally derived iPSCs manufactured under conditions compatible with full cGMP compliance	Therapeutics manufacturers and others that require cells derived to cGMP standards.

Source: Company reports.

Customer Base

Eli Lilly, Hoffmann-La Roche, and GlaxoSmithKline accounted for 10%, 18%, and 11% of CDI's total revenue in 2012, respectively. These three large biopharma customers individually accounted for more than 10% of CDI's total revenue in either 2011 or 2012, or both years. In 1Q13, Eli Lilly and AstraZeneca (recent contract signed) each accounted for 16% of the total revenue for that quarter, according to the company's S-1. There could be a significant loss in revenue if CDI were to lose any of these customers, so we believe it is imperative for the company to continue to keep good relations, but also expand its customer base, which the company has done already.

CDI's customer base increased from 60 in 2011 to 128 in 2012, and these numbers include 18 of the top 20 big pharma companies. CDI's average revenue from its top 10 customers increased ~2.5 times in 2012, from $179K to $445K, so while this may seem like a concentration of revenue at the top, growing revenue numbers and growing customer base lead us to believe that CDI is spread wide and far enough to maintain healthy customer relations.

Management

Cellular Dynamics has a strong management team and best-in-class scientific team with leaders in the stem cell space. Dr. James Thomson, founder, Chief Scientific Officer and Board Member of Cellular Dynamics International (CDI), is well recognized as an authority in the stem cell industry. He was the first person to derive human embryonic stem cells (hESCs) in 1998 and very well respected in the stem cell space. With Cellular Dynamics, he is now utilizing a similar idea to hESCs to create a much more scalable and less ethically divisive product line that could revolutionize the way that stem cells are used in pharma R&D. Among others, the CDI management team has experienced members that have served in a variety of senior roles at companies such as NimbleGen Systems (acquired by Roche), Affymetrix, and Amersham.

Financial Outlook

Over the last two years (2010-2012), Cellular Dynamics has grown revenue at +80% CAGR. Over this same timeframe, the company has seen an expansion in product gross margin of >2,200 bps. Through 2015, we expect revenue to grow at ~100% CAGR with product gross margin expansion of >150 bps. Over the next five years, we project revenue growth of ~55% CAGR and gross margin expansion of ~300 bps.

In terms of cyclicality, CDI has historically generated ~45% of its yearly revenues in the fourth quarter of the year. However, we would note there are many companies in the life science, tools and diagnostics space that also have similar revenue builds due to excess demand for products during flu season, etc.

Moving down the P&L, the company continues to have high product gross margin (67% in Q1 2013), while we model some SG&A and R&D leverage in the coming years, once revenue growth begins to deliver. However, we note that depending on when therapeutic partnerships materialize, operating expenses could increase, if the company starts to spend more on SG&A to deal with subsequent FDA regulation and approval process for products, although for now, it maintains a relatively lean operation, with only 26 people in sales and marketing. Of course, profitability is not an appropriate metric to evaluate an early-stage growth company like CDI, and near-term operating margins understate the long-term EPS growth potential in the business model, in our view.

NOLs limit tax liability through 2019

Since CDI is not currently profitable, it does not have income tax liability in the near term. As of December 2012, the company has net operating loss (NOL) carry forwards of $79M for federal and $70M for state. The federal NOLs begin to expire in 2024 and the state NOLs begin to expire in 2019.

Venture debt

CDI took on $12M of venture debt financing in 2Q13 and we model that the company will pay the debt back in increments to have it fully repaid by YE2014. We view the debt as something that should do more good than harm for the company's finances and operations and do not view it as a material risk. We forecast the revenue ramp and margin expansion to comfortably offset repayments of this $12M in

venture debt in the long run. We believe the company is well capitalized at current levels and do not assume any further equity or debt issuances before achieving profitability in 2018.

Valuation

At current levels, we believe Cellular Dynamics has favorable risk/reward, and see upside to the multiple as revenues continue to ramp, margins expand, and the product menu is broadened. Our DCF-derived December 2014 price target for ICEL is $18.

Absolute valuation

We employ a DCF approach off our base-case assumptions in order to value the company. Our December 2014 price target of $18 is derived from a 10-year discounted cash flow analysis, with a CAPM-derived WACC discount rate of 12.5% and terminal growth of 2% (see Figure 18). We also include a sensitivity analysis for the value of the company's equity relative to our WACC and terminal growth rate assumptions.

Relative valuation

For relative valuation, our preferred metric is forward EV/EBITDA, although for companies that are not yet profitable such as Cellular Dynamics, we use EV/Sales as a substitute.

As seen in Figure 15, Cellular Dynamics currently trades at a 22% premium to peers on 2014E EV/Sales. Our December 2014 price target of $18 implies a 7.7x EV/Sales multiple on our 2014 revenue estimate of ~$30.5M. We feel the premium multiple is justified given the company's significantly superior growth profile.

Figure 14: ICEL – Margin Profile

	2011A	2012A	2013E	2014E	2015E
Gross Margin	67%	72%	78%	81%	79%
SG&A	366%	189%	106%	76%	62%
R&D	526%	217%	98%	60%	50%
Operating Margin	-820%	-338%	-122%	-55%	-32%

Source: Company data and J.P. Morgan estimates.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

J.P.Morgan

Figure 15: ICEL – Relative Valuation versus Peers

Company	Ticker	Price 8/16/13	Mkt Cap $M	EV $M	EV/Sales 2012E	EV/Sales 2013E	EV/Sales 2014E	EV/Sales 2015E	Revenue Growth % 2012E	Revenue Growth % 2013E	Revenue Growth % 2014E	Revenue Growth % 2015E
Selected Peers												
TECHNE CORP	TECH	$75.01	2,763	2,494	8.0x	7.7x	7.0x	6.7x	2%	4%	10%	4%
REPROCELL INC	4978 JT	$106.10	901	882	NM	NM	NM	NM	NM	NM	NM	NM
ABCAM PLC-UNSP ADR	ABCZY US	$6.98	1,392	1,374	12.4x	NM	NM	NM	25%	NM	NM	NM
LUMINEX CORP	LMNX	$20.76	859	806	4.0x	3.6x	3.3x	2.9x	10%	9%	11%	13%
EXACT SCIENCES CORP	EXAS	$11.95	845	739	NM	NM	NM	6.7x	0%	-1%	NM	173%
STRATEC BIOMEDICAL AG	SBS GR	$30.98	364	359	2.9x	2.7x	2.4x	2.2x	5%	8%	13%	11%
GENMARK DIAGNOSTICS INC	GNMK	$10.16	410	359	NM	12.2x	11.4x	6.4x	NM	43%	7%	78%
FLUIDIGM CORP	FLDM	$19.54	498	418	8.0x	6.2x	5.1x	4.3x	22%	30%	22%	19%
MERIDIAN BIOSCIENCE INC	VIVO	$22.85	948	917	5.1x	4.8x	4.3x	4.0x	10%	8%	10%	10%
				Mean:	6.7x	6.2x	5.6x	4.7x	10%	14%	12%	44%
				Median:	6.6x	5.5x	4.7x	4.3x	10%	8%	11%	13%
Life Science Tools Comparables												
SIGMA-ALDRICH	SIAL	$84.13	10,116	10,075	3.8x	3.7x	3.6x	3.4x	5%	3%	4%	5%
ILLUMINA INC	ILMN	$77.04	9,639	9,131	8.0x	6.6x	5.9x	5.2x	9%	20%	12%	13%
QIAGEN N.V.	QGEN	$20.94	4,907	5,270	4.2x	4.0x	3.8x	3.6x	7%	6%	6%	5%
LONZA GROUP AG-REG	LONN VX	$69.60	3,683	6,069	1.5x	1.6x	1.5x	1.4x	46%	-2%	5%	6%
ORGANOVO HOLDINGS INC	ONVO	$5.87	449	434	NM	NM	NM	NM	NM	NM	NM	NM
				Mean:	4.4x	4.0x	3.7x	3.4x	17%	7%	7%	7%
				Median:	4.0x	3.9x	3.7x	3.5x	8%	4%	5%	5%
			Overall Mean:		**5.8x**	**5.3x**	**4.8x**	**4.2x**	**13%**	**12%**	**10%**	**31%**
			Overall Median:		**4.7x**	**4.4x**	**4.0x**	**4.0x**	**9%**	**8%**	**10%**	**11%**
CELLULAR DYNAMICS INTERNATIONAL	**ICEL US**	**$13.53**	**213**	**180**		**13.6x**	**5.9x**	**3.3x**	**153%**	**101%**	**130%**	**81%**
ICEL US Premium (Discount) to Peer Average:						156%	22%	(23%)	1110%	767%	1199%	166%
Using JPMorgan Dec 2014 target price of $18:						**17.7x**	**7.7x**	**4.2x**				
Premium (Discount) to Peer Average at $18:						233%	59%	(0%)				

Source: Company data and J.P. Morgan estimates.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

Appendix I: Financial Model

Figure 16: ICEL Income Statement

Income Statement USD $M	2010A	2011A	1QA Mar	2QA Jun	3QA Sep	4QA Dec	2012A	1QA Mar	2QE Jun	3QE Sep	4QE Dec	2013E	2014E	2015E	CAGR 10-15E
Product Sales	1.1	1.5	0.6	1.2	1.2	2.2	5.2	2.1	2.0	2.0	3.4	9.4	20.4	40.5	107.2%
Collaborations, Partnerships & Other	1.0	1.1	0.5	0.1	0.2	0.7	1.4	0.6	1.1	1.1	1.1	3.8	10.1	14.8	71.4%
Total Revenue	**2.1**	**2.6**	**1.1**	**1.2**	**1.3**	**2.9**	**6.6**	**2.8**	**3.0**	**3.0**	**4.4**	**13.3**	**30.5**	**55.3**	**93.1%**
Cost of Goods Sold	(1)	(1)	(0)	(0)	(0)	(1)	(2)	(1)	(1)	(1)	(1)	(3)	(6)	(12)	
Gross Profit	1	2	1	1	1	2	4	2	2	2	3	10	24	43	
SG&A	(7)	(10)	(3)	(3)	(3)	(4)	(12)	(4)	(3)	(3)	(4)	(14)	(23)	(34)	
R&D	(15)	(14)	(3)	(4)	(4)	(4)	(14)	(4)	(3)	(2)	(3)	(12)	(18)	(28)	
EBIT (Operating Income)	(21)	(21)	(5)	(6)	(5)	(6)	(22)	(5)	(4)	(3)	(4)	(17)	(17)	(19)	
EBITDA	(21)	(14)	(3)	(5)	(4)	(5)	(16)	(4)	(3)	(1)	(2)	(10)	(13)	(10)	
Pre-Tax Income	(21)	(21)	(5)	(6)	(5)	(6)	(22)	(5)	(4)	(3)	(4)	(17)	(17)	(19)	
Income Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net Income	(20.5)	(21.3)	(4.8)	(6.2)	(5.4)	(5.9)	(22.3)	(5.3)	(4.2)	(3.4)	(3.6)	(16.5)	(16.9)	(18.5)	
Diluted Shares Outstanding	7.5	8.9	9.8	10.1	10.3	10.6	10.2	11.9	15.7	15.8	16.0	14.9	16.2	16.7	
Adjusted Diluted EPS	**$0.00**	**($2.39)**	**($0.49)**	**($0.61)**	**($0.52)**	**($0.55)**	**($2.18)**	**($0.45)**	**($0.27)**	**($0.21)**	**($0.23)**	**($1.11)**	**($1.04)**	**($1.11)**	
Product Gross Margin	43%	41%	78%	64%	75%	44%	65%	67%	62%	62%	62%	63%	64%	66%	
Total Gross Margin	72%	67%	88%	66%	78%	57%	72%	76%	77%	77%	72%	75%	80%	78%	
change in gross margin (y/y, bp)	+0	+927	+1174	+1286	+1410	+663	+1080	+863	+1157	+982	+1265	+1037	+1067	+975	
SG&A	340%	366%	238%	262%	220%	123%	189%	132%	113%	107%	84%	106%	76%	62%	
R&D	728%	526%	267%	303%	269%	137%	217%	139%	102%	80%	70%	98%	60%	50%	
Operating Margin	-997%	-820%	-418%	-499%	-411%	-203%	-338%	-195%	-138%	-111%	-82%	-125%	-56%	-35%	
change in op margin (y/y, bp)	+0	+823	+523	+425	+305	+430	+412	+468	+277	+269	+404	+371	+446	+603	
EBITDA Margin	-997%	-553%	-251%	-369%	-304%	-162%	-245%	-160%	-109%	-22%	-47%	-79%	-43%	-19%	
Tax Rate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Profit Margin	-997%	-822%	-419%	-500%	-411%	-203%	-338%	-192%	-139%	-111%	-82%	-125%	-55%	-33%	
Reported Revenue Growth y/y	0%	26%	85%	162%	211%	166%	153%	141%	144%	131%	54%	101%	130%	81%	

Source: Company data and J.P. Morgan estimates.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

Figure 17: ICEL Balance Sheet and Cash Flow

Balance Sheet and Cash Flow USD $M	2010A	2011A	1QA Mar	2QA Jun	3QA Sep	4QA Dec	2012A	1QA Mar	2QE Jun	3QE Sep	4QE Dec	2013E	2014E	2015E	CAGR 10-15E
Balance Sheet															
Cash + ST Investments	27	37	32	26	20	34	34	28	38	47	56	56	44	42	
Receivables	1	1	1	1	1	3	3	2	3	3	4	4	7	12	
Inventories	2	3	3	3	3	2	2	2	3	3	3	3	5	9	
Current Assets	31	41	36	31	25	40	40	34	44	54	65	65	58	64	
PP&E	2	2	2	1	1	1	1	1	0	1	4	4	6	9	
Non-Current Assets	11	11	10	10	12	12	12	12	12	13	15	15	17	21	
Accounts Payable	1	1	1	1	3	1	1	2	2	1	1	1	2	2	
Current Liabilities	3	3	3	3	5	4	4	4	4	4	5	5	6	8	
Long-Term Debt	1	1	1	1	1	1	1	1	13	13	12	12	0	(0)	
Non-Current Liabilities	1	1	1	1	1	1	1	1	13	13	12	12	0	(0)	
Shareholders Equity	37	47	43	37	32	47	47	42	39	50	63	63	69	78	
Net Cash (Debt)	**0**	**35**	**30**	**25**	**19**	**33**	**33**	**28**	**25**	**34**	**44**	**44**	**44**	**42**	
per share	$0.00	$3.94	$3.08	$2.48	$1.84	$3.10	$3.21	$2.32	$1.57	$2.15	$2.73	$2.93	$2.68	$2.53	
Net Debt/EBITDA	0.0x	-2.5x	-2.1x	-1.6x	-1.2x	-2.0x	-2.0x	-1.6x	-1.5x	-2.6x	-4.2x	-2.6x	-3.3x	-4.0x	
Cash Conversion Cycle (days)	2295	1975	0	0	0	0	734	0	0	0	0	533	414	331	
Cash Flow															
Cash Flow from Operations	(22)	(11)	(3)	(3)	(2)	(6)	(23)	(4)	(4)	(1)	(2)	(10)	(14)	(13)	
Capex	(2)	(1)	(0)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	(4)	(4)	(4)	(7)	
Cash Flow from Investments	(2)	(3)	(1)	(2)	(2)	(1)	(3)	(0)	(0)	(0)	(4)	(5)	(5)	(7)	
Sale (Repurchase) of Equity	(2)	30	5	5	5	5	21	0	46	1	1	49	5	5	
Issuance (Reduction) of Debt	(2)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
Dividends Paid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cash Flow from Financing	(5)	30	5	5	5	5	21	(0)	46	1	1	48	4	5	
Free Cash Flow to Equity	**(24)**	**(12)**	**(3)**	**(5)**	**(3)**	**(6)**	**(23)**	**(4)**	**(4)**	**(1)**	**(6)**	**(14)**	**(19)**	**(20)**	
FCF Per Share	($3.24)	($1.30)	($0.35)	($0.47)	($0.33)	($0.53)	($2.22)	($0.35)	($0.24)	($0.08)	($0.37)	($0.97)	($1.14)	($1.19)	
Dividend per Share	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Source: Company data and J.P. Morgan estimates.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

J.P.Morgan

Figure 18: ICEL DCF Analysis

Projected FY Ending Dec	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue ($M)	3	7	13	31	55	85	105	116	129	141	156	172	190	210
growth y/y		153%	101%	130%	81%	54%	23%	10%	11%	10%	10%	10%	10%	11%
EBIT ($M)	(21)	(22)	(23)	(17)	(19)	(16)	(7)	2	12	24	34	46	50	55
EBIT margin	-820%	-338%	-170%	-56%	-34%	-19%	-7%	1%	10%	17%	22%	27%	26%	26%
Tax-affected EBIT ($M)	(21)	(22)	(23)	(17)	(19)	(16)	(7)	2	11	22	31	41	45	50
Free Cash Flow to Firm	**(15)**	**(18)**	**(23)**	**(22)**	**(23)**	**(21)**	**9**	**7**	**17**	**20**	**31**	**46**	**63**	**62**
growth y/y								-26%	149%	19%	51%	51%	37%	-2%

Discount Rate	Discounted Cash Flows ($M) 2015-2024		PV of Terminal Value ($M) at a Perpetual Growth Rate of 1.0%	1.5%	2.0%	2.5%	3.0%		Enterprise Value ($M) 1.0%	1.5%	2.0%	2.5%	3.0%
11.5%	70		203	214	226	240	255		272	283	296	310	325
12.0%	66		185	195	205	217	231		251	261	272	283	297
12.5%	63	+	169	178	**187**	197	209	=	232	240	**250**	260	272
13.0%	60		155	162	171	180	190		215	222	230	239	249
13.5%	57		142	149	156	164	173		199	206	213	221	229

	Net Debt (Cash) ($M)		Equity Value ($M) 1.0%	1.5%	2.0%	2.5%	3.0%		Equity Value per Share 1.0%	1.5%	2.0%	2.5%	3.0%
	(44)		316	327	339	353	369		$19.46	$20.15	$20.92	$21.77	$22.72
	(44)		295	304	315	327	340		$18.16	$18.76	$19.42	$20.16	$20.97
-	(44)	=	275	284	**293**	304	315	=	$16.98	$17.51	**$18.09**	$18.72	$19.43
	(44)		258	266	274	283	293		$15.91	$16.38	$16.88	$17.44	$18.05
	(44)		242	249	256	264	273		$14.94	$15.35	$15.80	$16.29	$16.82

Equivalent Terminal EBITDA Multiple (forward 12 mos) 1.0%	1.5%	2.0%	2.5%	3.0%
3.7x	3.8x	4.0x	4.2x	4.4x
3.4x	3.5x	3.7x	3.8x	4.0x
3.1x	3.2x	**3.4x**	3.5x	3.7x
2.9x	3.0x	3.1x	3.2x	3.4x
2.7x	2.8x	2.9x	3.0x	3.1x

Terminal Value as a % of Enterprise Value 1.0%	1.5%	2.0%	2.5%	3.0%
74%	75%	76%	77%	79%
74%	75%	76%	77%	78%
73%	74%	**75%**	76%	77%
72%	73%	74%	75%	76%
72%	72%	73%	74%	75%

Source: Company data and J.P. Morgan estimates.

Appendix II: Management Team

Figure 19: ICEL Management Team (Ownership Is Pre-IPO)

Name / Title	Age	Compensation ($)			Ownership		Experience
		Salary	Bonus	Equity	Shares (#)	Value (%)	
Robert J. Palay Founder, *Chairman of the Board and CEO*	57	$475,000	-	-	7,062,797	43.9%	– Chairman and CEO since 2007 – Previously served as Chairman and CEO of each of predecessors from their founding until 2008 – Co-founded NimbleGen Systems, a molecular biology tools company – Served as manager of the general partner or manager of each of the various Tactics II entities – A.B. from Harvard College, M.M. from J.L. Kellogg Graduate School of Management, J.D. from the Northwestern University School of Law
Thomas M. Palay, Ph.D. *Founder, President and Vice Chairman of the Board*	60	$475,000	-	-	7,062,797	43.9%	– Vice Chairman and President since 2007 – Previously served as Vice Chairman and President of each of predecessors from their founding until 2008 – Co-founded NimbleGen Systems – Served as manager of the general partner or manager of each of each of the Tactics II entities – Joined the faculty of the University of Wisconsin Law School – Retired as the Foley & Lardner-Bascom Professor of Law in 2010 – B.A. from Tufts University, J.D. from the University of Pennsylvania, Ph.D. from the University of Pennsylvania
Emile F. Nuwaysir, Ph.D. *Vice President – Research & Development, Manufacturing, and Quality Systems and Chief Operating Officer*	44	$350,000	$50,000	-	262,567	1.6%	– VP of R&D, Manufacturing, and Quality Systems and COO since 2008 – Founder and served as director of Invenra, a Wisconsin-based early stage company developing technology for biopharmaceutical discovery since 2011 – SVP of program management at Roche NimbleGen Systems from 2007-2008 – VP of business development at NimbleGen Systems, 2003 to 2007, various scientific and managerial roles from 2000 to 2003 – Various positions at NIH, UNC-Chapel Hill, El DuPont De Nemours Stine-Haskell Laboratory – B.A. from University of Delaware and Ph.D. in Molecular and Environmental Toxicology with a focus in Oncology from University of Wisconsin-Madison
Christopher Parker *Vice President – Sales, Marketing & Business Development, and Chief Commercial Officer*	48	$325,000	$10,000	$63,000	190,772	1.2%	– VP of Sales, Marketing and Business Development and Chief Commercial Officer since 2008 – Chief Commercial Officer of Stem Cell Products, Inc from 2007 to 2009 – VP of Affymetrix, Inc from 1998 to 2007 – Served on drug discovery services team at Amersham – Pharmacia Biotech Inc and conducted molecular and cellular biology research at the University of Wisconsin-Madison for over a decade – B.A. from University of Wisconsin-Madison
Nicholas J. Seay *Vice President and Chief Technology Officer*	62				136,648	< 1%	– VP and CTO since 2007 – Represented WARF from 1985 to 2005 – Has served on Board of Directors of Epic Systems Corporation since 1983 and BellBrook Laboratories LLC since 2001 – Advised biotechnology companies and worked on significant technologies at Quarles and Brady LLP from 1989 to 2005 – B.S. from Cornell University, J.D. from George Washington University Law School
David S. Snyder *Executive Vice President and Chief Financial Officer*	52				176,412	1.1%	– Executive VP and CFO since 2008 – Has served as Director of Invenra since 2012, Board of Trustees of Ottawa University since 2012 – Served as SVP of Finance, site VP, and CFO of Roche NimbleGen from 2007 to 2008 – Served as VP and CFO of NimbleGen Systems, Inc from 2006 to 2007 – Served as CFO of The Cobalt Group LLC, a publicly-traded internet software company, from 2000 to 2001, of Strategic Hotel Capital LLC, a real estate company, from 1997 to 2000 – B.A. from Ottawa University, MBA from Harvard Business School
Craig T. January, MD, Ph.D. *Founder and Director*	65	$64,000			126,655	< 1%	– Founded the company and served on the Board of Directors since 2008 – Served as a practicing cardiologist and, since 1995, a professor in the Division of Cardiovascular Medicine at the University of Wisconsin-Madison School of Medicine and Public Health – MD and a Ph.D. in Physiology and Biophysics from the University of Iowa
James A. Thomson, VMD, Ph.D. *Founder, Chief Scientific Officer and Director*	54	$150,000			1,156,544	7.2%	– Founded the company, and Chief Scientific Officer and member of the Board since 2007 – Derived human ES cells and featured in TIME Magazine's "Top 10 Discoveries of the Year" – Member of the National Academy of Sciences – Served as the Director of Regenerative Biology at the Morgridge Institute for Research since 2008 and as a Professor of Anatomy at the University of Wisconsin-Madison since 2003 – VMD and Ph.D. from the University of Pennsylvania

Source: Company reports.

Appendix III: Board of Directors

Figure 20: ICEL Board of Directors

Name / Title	Committees			Experience
	Audit	Govern.	Comp.	
Robert J. Palay Founder, *Chairman of the Board and CEO*				– Chairman and CEO since 2007 – Previously served as Chairman and CEO of each of predecessors from their founding until 2008 – Co-founded NimbleGen Systems, a molecular biology tools company – Served as manager of the general partner or manager of each of the various Tactics II entities – A.B. from Harvard College, M.M. from J.L. Kellogg Graduate School of Management, J.D. from the Northwestern University School of Law
Thomas M. Palay, Ph.D. *Founder, President and Vice Chairman of the Board*				– Vice Chairman and President since 2007 – Previously served as Vice Chairman and President of each of predecessors from their founding until 2008 – Co-founded NimbleGen Systems – Served as manager of the general partner or manager of each of each of the Tactics II entities – Joined the faculty of the University of Wisconsin Law School – Retired as the Foley & Lardner-Bascom Professor of Law in 2010 – B.A. from Tufts University, J.D. from the University of Pennsylvania, Ph.D. from the University of Pennsylvania
Michael E. Falk *Director*				– Board of Directors since 2010 – Served as general counsel for WARF, the patent management and licensing organization for the University of Wisconsin-Madison since 2007 – Practiced as a patent litigator with Foley & Lardner LLP – B.A. from Columbia University, J.D. MBA MS in microbiology from University of Wisconsin-Madison
Kenneth C. Hunt *Director*	x	Chairman	Chairman	– Board of Directors since 2009 – Served as SVP, general counsel and secretary of Manpower Group Inc, a world leader in the employment services industry, from 2008 to January 2013 – Shareholder at Godfrey & Kahn, S.C. from 1981 to 2007 – Degree in Aerospace Engineering from the University of Michigan, J.D. from Duke University Law School
Craig T. January, MD, Ph.D. *Founder and Director*				– Founded the company and served on the Board of Directors since 2008 – Served as a practicing cardiologist and, since 1995, a professor in the Division of Cardiovascular Medicine at the University of Wisconsin-Madison School of Medicine and Public Health – MD and a Ph.D. in Physiology and Biophysics from the University of Iowa
Leonard Loventhal *Director*		x	x	– Board of Directors since 2011 – Served as President and CIO for 1922 Investment Company LLC, an investment office for the Daniel F. Pritzker family since 2012 – Served as VP of the general partner of Sixth Floor Investors LP – B.A. in Economics from Tufts University, Masters in Management and J.D. from Northwestern University
Gregory J. Lynch *Director*				– Board of Directors since 2009 – Served as head of the venture capital practice at Michael Best & Friedrich LLP from 2005 to 2010 and head of the corporate group from 2010 to present – Over 15 years' experience advising high-growth companies on strategic financing, etc – B.S.B.A. in Finance and Economics from Creighton University, J.D. from the University of Iowa
Stanley D. Rose, Ph.D. *Director*				– Board of Directors since 2009 – Served as President of Rose Ventures Inc, a Wisconsin-based firm that provides consulting services and makes investments in life science tool companies, since 2008 – Served as President and CEO of Transplant Genomics Inc since March 2013, as a director of Inver since 2012, and as director since 2009 and Chief Commercial Officer since 2011 of Nasbys, a portfolio company of Point Judith Capital – Served in various roles at Roche NimbleGen since 2003 – Co-founded Genetic MicroSystems, a microarray instruments company, in 1997 – B.A. from Cornell University, Ph. D. in Biology from MIT
Sheli Z. Rosenberg *Director*	x		x	– Board of Directors since March 2013 – Joined Skadden, Arps, Slate, Meagher & Flom LLP as Of Counsel in 2011 – Served as a director of Equity Residential from 2008 to 2010, of CVS Caremark Corporation from 2008 to 2010, and of Avis Budget Group Inc from 2008 to 2009 – Served as Vice Chairman of Equity Group Investments LLC, an investment company, from 2000 to 2003 and its President and CEO from 1999 to 2000 – Served as President, CEO and director of Equity Group Investments Inc from 1994 to 1999 – Served as a principal in the law firm of Rosenberg & Liebentritt, P.C. from 1980 to 1997 – Currently a director of Equity Life Style Properties, Nanosphere, Inc, Strategic Hotels & Resorts Inc, and Ventas Inc – Co-founded and former President of the Center for Executive Women at the Kellogg School of Management and was an Adjunct Professor at Northwestern's J.L. Kellogg Graduate School of Business from 2003 to 2007
James A. Thomson, VMD, Ph.D. *Founder, Chief Scientific Officer and Director*				– Founded the company, and Chief Scientific Officer and member of the Board since 2007 – VMD and Ph.D. from the University of Pennsylvania – Member of the National Academy of Sciences – Served as the Director of Regenerative Biology at the Morgridge Institute for Research since 2008 and as a Professor of Anatomy at the University of Wisconsin-Madison since 2003
Michael J. Van Handel *Director*	Chairman	x		– Board of Directors since 2010 – Served on the Board of the Milwaukee Youth Symphony Orchestra since 2005, BMO Financial Corp. since 2011, and Harris Financing Corp. from 2006 to 2011 – Served as VP, since 1991, of Harris Financial Corp. from 2006 to 2011 – Served as VP since 1991, and CFO since 1998, of Manpower Group LLC – B.S. in Accounting from Marquette University, MBA in Banking and Finance from the University of Wisconsin

Source: Company reports.

Tycho W. Peterson
(1-212) 622-6568
tycho.peterson@jpmorgan.com

J.P.Morgan

Cellular Dynamics: Summary of Financials

Income Statement - Annual	FY12A	FY13E	FY14E	FY15E	Income Statement - Quarterly	1Q13A	2Q13E	3Q13E	4Q13E
Revenues	7	13	31	55	Revenues	3A	3	3	4
Cost of products sold	(2)	(3)	(6)	(12)	Cost of products sold	(1)A	(1)	(1)	(1)
Gross profit	-	-	-	-	Gross profit	-	-	-	-
SG&A	(12)	(14)	(23)	(34)	SG&A	(4)A	(3)	(3)	(4)
R&D	(14)	(12)	(18)	(28)	R&D	(4)A	(3)	(2)	(3)
Operating income	(22)	(17)	(17)	(19)	Operating income	(5)A	(4)	(3)	(4)
EBITDA	(16)	(10)	(13)	(10)	EBITDA	(4)A	(3)	(1)	(2)
Net interest (income) / expense	(0)	0	0	0	Net interest (income) / expense	0A	(0)	(0)	(0)
Other income / (expense)	0	0	0	0	Other income / (expense)	0A	0	0	0
Income taxes	0	0	0	0	Income taxes	0A	0	0	0
Net income	(22)	(17)	(17)	(19)	Net income	(5)A	(4)	(3)	(4)
Diluted shares outstanding	10	15	16	17	Diluted shares outstanding	12A	16	16	16
Diluted EPS	(2.18)	(1.11)	(1.04)	(1.11)	Diluted EPS	(0.45)A	(0.27)	(0.21)	(0.23)

Balance Sheet and Cash Flow Data	FY12A	FY13E	FY14E	FY15E	Ratio Analysis	FY12A	FY13E	FY14E	FY15E
Cash and cash equivalents	34	56	44	42	Sales growth	153.5%	101.3%	130.3%	81.2%
Accounts receivable	3	4	7	12	EBIT growth	4.4%	(25.4%)	2.6%	9.3%
Inventories	2	3	5	9	EPS growth	(8.8%)	(49.0%)	(6.4%)	6.7%
Other current assets	1	1	1	2					
Current assets	40	65	58	64	Gross margin	-	-	-	-
PP&E	1	4	6	9	EBIT margin	(337.7%)	(125.1%)	(55.8%)	(33.6%)
Total assets	51	80	75	85	EBITDA margin	(244.9%)	(79.0%)	(43.0%)	(18.9%)
					Tax rate	0.0%	0.0%	0.0%	0.0%
Total debt	1	13	0	1	Net margin	(338.3%)	(124.7%)	(55.3%)	(33.5%)
Total liabilities	5	17	6	8					
Shareholders' equity	47	63	69	78	Net Debt / EBITDA	203.6%	415.5%	331.9%	397.6%
					Net Debt / Capital (book)	(231.8%)	(228.4%)	(168.3%)	(114.4%)
Net income (including charges)	(22)	(17)	(17)	(19)					
D&A	6	6	4	8	Return on assets (ROA)	(43.2%)	(25.2%)	(21.9%)	(23.1%)
Change in working capital	(2)	(2)	(5)	(6)	Return on equity (ROE)	(47.4%)	(30.2%)	(25.6%)	(25.1%)
Other	1	1	1	1					
Cash flow from operations	(16)	(11)	(17)	(16)	Enterprise value / sales	-	-	-	-
					Enterprise value / EBITDA	-	-	-	-
Capex	(0)	(4)	(4)	(7)	Free cash flow yield	(11.9%)	(7.6%)	(9.6%)	(9.8%)
Free cash flow	(16)	(15)	(21)	(22)					
Cash flow from investing activities	(3)	(5)	(5)	(7)					
Cash flow from financing activities	21	48	4	5					
Dividends	0	0	0	0					
Dividend yield	-	-	-	-					

Source: Company reports and J.P. Morgan estimates.
Note: $ in millions (except per-share data).Fiscal year ends Dec

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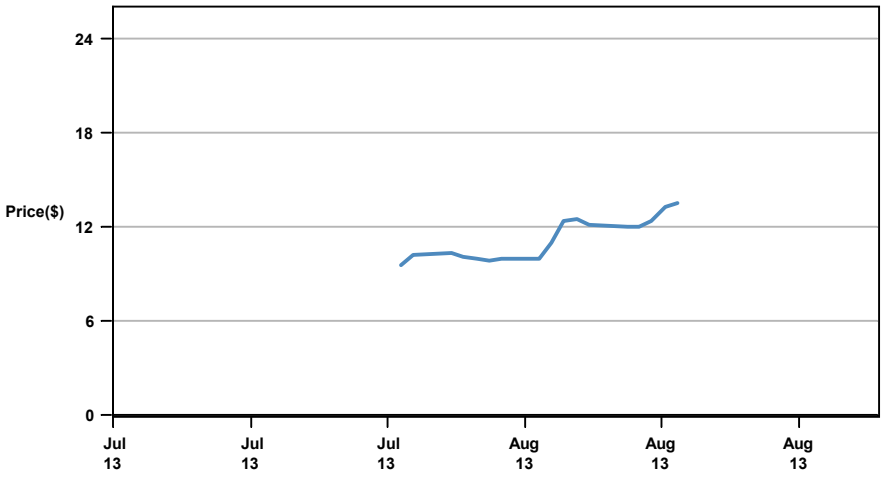
Cellular Dynamics (ICEL, ICEL US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.

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