International Stem Cell Corporation (OTCBB: ISCO, Target Price: $0.54)

We initiate coverage on International Stem Cell Corporation (ISCO) with a price target (PT) of $0.54 per share. ISCO is a development-stage biotechnology company focused on therapeutic, biomedical, and cosmetic products derived from human cell technologies. ISCO has created a proprietary technology platform for developing pluripotent human parthenogenetic stem cells ("hpSCs"). Parthenogenetic stem cells are similar to human embryonic stem cells (hESCs) in that they have the potential to differentiate into various types of cell types in the human body. However, ISCO's parthenogenetic stem cells are created by chemically stimulating unfertilized oocytes (eggs) – a process that does not require the use or destruction of viable human embryos.

Stock Details (2/12/2013)

OTCBB:	ISCO
Sector / Industry	Healthcare / Biotechnology
Price target	**$0.54**
Recent share price	$0.38
Shares o/s (mn)	105.5
Market cap (in $mn)	40.1
52-week high/low	$0.64/$0.16

Source: Thomson Reuters, SeeThruEquity Research

Key Financials ($mn unless specified)

	FY11	FY12E	FY13E
Revenues	4.5	4.8	7.6
EBITDA	(10.9)	(8.9)	(7.6)
EBIT	(11.4)	(9.4)	(8.1)
Net income	(9.6)	(10.9)	(8.1)
EPS ($)	(0.12)	(0.12)	(0.08)

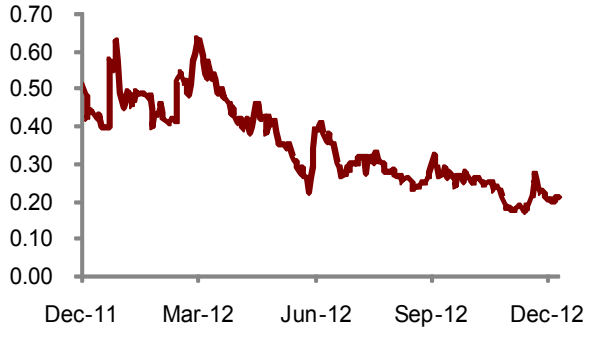
Source: SeeThruEquity Research

Key Ratios

	FY11	FY12E	FY13E
Gross margin (%)	35.7	30.0	30.0
EBITDA margin (%)	NM	NM	NM
Net margin (%)	NM	NM	NM
P/Revenue (x)	8.8	8.3	5.3
EV/EBITDA (x)	NM	NM	NM
EV/Revenue (x)	8.4	7.9	5.0

Source: SeeThruEquity Research

Share Price Performance ($, LTM)



Source: Thomson Reuters

INVESTMENT HIGHLIGHTS

Large therapeutic market opportunity

ISCO operates in a large and very competitive market with high potential for rapid growth. The company is initially targeting diseases of the brain, liver, and eye – areas where cell and tissue treatment have proven effective but where there is a short supply of safe and efficacious cells. Specifically, ISCO developing neuronal cells for use in treatment for Parkinson's disease, hepatocytes for acute and chronic liver diseases, and corneal cells to treat various degrees of corneal blindness. The company believes this represents a potential market of $4.2bn.

Proprietary parthenogenetic stem cells provide differentiation

We expect that ISCO's proprietary techniques for deriving "human parthenogenetic stem cells" (hpSCs) may provide the company a competitive differentiation versus peers. The company has a broad intellectual property portfolio with over 130 patents and licenses across 30 patent families. ISCO's proprietary stem cell platform has been shown to exhibit pluripotency and the proliferative benefits of embryonic stem cell technologies but with reduced immune rejection. Additionally, the derivation of hpSCs does not require the destruction of a human embryo, as is the case with human embryonic stem cells – mitigating some of the ethical issues with the technology. Along with the potential to become any human-body cell, each hpSC can be an immune match for millions of people, which is impractical for hESCs, where each stem cell line is unique.

Current revenue from Lifeline Skin Care and Lifeline Cell Technology

ISCO has developed two wholly-owned subsidiaries which leverage the company's human cell culture experience and proprietary stem cell technology platform and are currently generating revenue: Lifeline Skin Care and Lifeline Cell Technology. Lifeline Skin Care manufactures and markets a line of anti-aging skin care products based on extracts derived from pluripotent human parthenogenetic cells. Lifeline Cell Technology produces and markets primary human cells and the reagents needed to culture and study human cells for therapeutic research. Over the trailing twelve months these businesses has generated $4.4mn in revenue for ISCO. Management is optimistic that over time they may be able to offset a meaningful portion of the cost of therapeutic development costs or potentially generate value on their own.

Initiate coverage with a price target of $0.54

Our analysis indicates a fair value estimate of $0.54 per share (detailed on pages 8 and 9), implying an upside of 41.0% from the recent price of $0.38. Pricing at this level suggests a P/Rev of 7.5x FY13E revenue, reflecting a discount compared to the mid-range average P/Rev multiple of peers.

SUMMARY TABLE

Figure 1. Summary Table (As of February 12, 2013)

Share data		B/S data (As on 3Q12)		Key personnel:	
Recent price:	$0.38	Total assets:	7.1mn	Chairman, CEO:	Andrey Semechkin Ph.D.
Price target:	$0.54	Total debt:	0.3mn	CFO, Secretary:	T. Linh Nguyen
52-week range:	$0.64/$0.16	Equity:	0.2mn	EVP, Business	Simon Craw Ph.D.
Average volume:*	223,463	W/C:	2.2mn	Development:	
Market cap:	40.1mn	ROE '12E:	NM	External IR:	MZ Group
Book value/share:	$0.08	ROA '12E:	NM		
Cash/share	$0.02	Current ratio:	2.1		
Dividend yield:	0.0%	Asset turnover:	0.6		
Risk profile:	High / Speculative	Debt/Cap:	0.5		

** three month average volume (number of shares)*

	Estimates			Valuation		
FY December	Rev ($mn)	EBITDA ($mn)	EPS ($)	P/Rev (x)	EV/Rev (x)	P/E (x)
2011	4.5	(10.9)	(0.12)	6.5x	8.4x	NM
1Q12A	1.1	(2.6)	(0.05)	7.3x	8.8x	NM
2Q12A	1.1	(2.3)	(0.03)	6.9x	9.0x	NM
3Q12A	1.2	(2.0)	(0.02)	7.0x	8.0x	NM
4Q12E	1.5	(2.0)	(0.02)	5.5x	6.3x	NM
2012E	4.8	(8.9)	(0.12)	6.9x	7.9x	NM
2013E	7.6	(7.6)	(0.08)	5.3x	5.0x	NM
2014E	10.6	(6.3)	(0.06)	4.3x	3.6x	NM
2015E	13.3	(5.2)	(0.04)	3.8x	2.9x	NM

Source: SeeThruEquity Research

INVESTMENT THESIS

We view International Stem Cell Corporation (ISCO) as an interesting development stage biotechnology company with high growth potential over time considering current commercial and future therapeutic applications derived from its proprietary stem cell technology platform. Stem cell technology involves developing human cells or tissues derived from a single precursor cell to replace damaged cells in humans. The company aims to use its advancements in human stem cell technology to become a leader in regenerative medicine by using cell-based therapies to treat disease.

Based in Carlsbad, CA, ISCO has developed a proprietary technology platform for creating human parthenogenetic stem cells ("hpSCs") by activating unfertilized oocytes (eggs) through chemical means. This process results in a non-viable "parthenote" from which pluripotent parthenogenetic stem cell lines can be derived. ISCO has 47 employees and maintains manufacturing facilities located in Oceanside, CA and Frederick, MD, which are specifically designed for the derivation clinical-grade parthenogenetic stem cell lines. The company intends to continue to expand its collection of parthenogenetic stem cell lines by creating and banking new clinical-grade hpSC lines at its 3,000 square-foot Oceanside facility. These lines will be used both internally and for future licensing opportunities, and will be developed according to good tissue practices (GTP) and current good manufacturing practices (cGMP).

Like human embryonic stem cells (hESCs), hpSCs are pluripotent (they have the potential to differentiate into various types of cell types in the human body); however, hpSCs have potentially less ethical risk given that they do not require the use or destruction of a viable human embryo. Additionally, ISCO's proprietary stem cell platform is distinguished by having reduced immune rejection, which, if proven effective, may position it as a more economical path for stem cell development than other stem cell options, per the following table.

Figure 2. Overview of benefits to parthenogenertic stem cells

	Parthenogenetic Stem Cells	Embryonic Stem Cells	iPS Stem Cells	Adult Stem Cells
Immune Matching	Yes	Impractical – each line is unique	Individual only	Individual only
Economic Source				
Genes Manipulated	No	No	Yes	No
Use of Viruses				
Use in Genetic Diseases	Superior	Superior	Deficient	Deficient
Carries Defective Gene				

Source: Company investor materials, SeeThruEquity Research

Given the benefits of ISCO's parthenogenetic stem cells, we believe there may be an opportunity for ISCO to license its technology in the future. Currently the University of Wisconsin's Wisconsin Alumni Research Foundation (WARF) maintains a commanding hold of key embryonic stem cell intellectual property and generates significant income from licensing its broad patent portfolio through its subsidiary, the WiCell Research Institute. WiCell is a non-profit subsidiary focused on advancing progress in human embryonic stem cell research and unlocking the therapeutic potential of the field by licensing its IP to businesses and academic institutions. Since its inception, WiCell has fulfilled more than 1,543 licenses for stem cells, which have been shipped to more than 908 researchers in 39 countries and 40 states. WiCell has been criticized by private industry as being an expensive gatekeeper of seminal stem cell intellectual property. If ISCO has success with its initial parthenogenetic therapeutic applications we believe the company has the potential be in a position to provide an alternative to WARF for stem cell technology, which could generate licensing fees and potential royalty income from licensees in the future. We have not incorporated this assumption in our model, but will monitor developments in this area in the future. We would view 2015 as the earliest time that ISCO would be able to license its technology, given existing timelines for its therapeutic products.

Large opportunities available for therapeutic applications

Initially ISCO plans to focus its therapeutic research on applications for diseases of the brain, liver, and eye. These are areas in which cell and tissue therapies have been proven effective but where there is insufficient supply of safe and efficacious cells or tissue for treatment. The company's three priority areas are: Parkinson's disease, inherited / metabolic liver diseases, and corneal blindness. Collectively these applications represent a $4.2Bn opportunity, per the following table.

Figure 3. Overview of ISCO parthenogenetic therapeutic applications

Application	Medical Need	Market Potential	Stage
Parkinson's Disease	1mn sufferers / 60K diagnosed per year in the US	Approximately $2.2Bn	Pre-Clinical
Metabolic Liver Diseases	Rare diseases often fatal	Approximately $1Bn	Pre-Clinical
Cornea Tissue Implants	10mn worldwide in need of transplant	Approximately $1Bn	Basic Research

Source: Company investor materials, SeeThruEquity Research

Parkinson's disease: ISCO's initial area of focus is Parkinson's disease, a neurodegenerative disorder which affects over 5mn people worldwide. Currently, there is no cure available for Parkinson's disease, except for medications that control the symptoms of the disease. ISCO recently announced positive 12-week results its *in vivo* preclinical disease study to demonstrate the therapeutic benefits of neuronal cells derived from human parthenogenetic stem cell (hpSC) lines in a rat model of Parkinson's disease.

ISCO's stem cell therapy is a one-time application and, if successful, may replace the dead neuronal cells (70% of which are often found upon diagnoses). ISCO plans to initially target the U.S. market, which has more than 1mn people suffering from Parkinson's and represents a $2.2Bn market opportunity with no

pluripotent stem cell competition. Upcoming catalysts for this application include results from an on-going non-human primate efficacy study, which are expected to be released in 1H13, and the company's preparation for its Investigational New Drug (IND) applications, which is expected to be filed in early 2014.

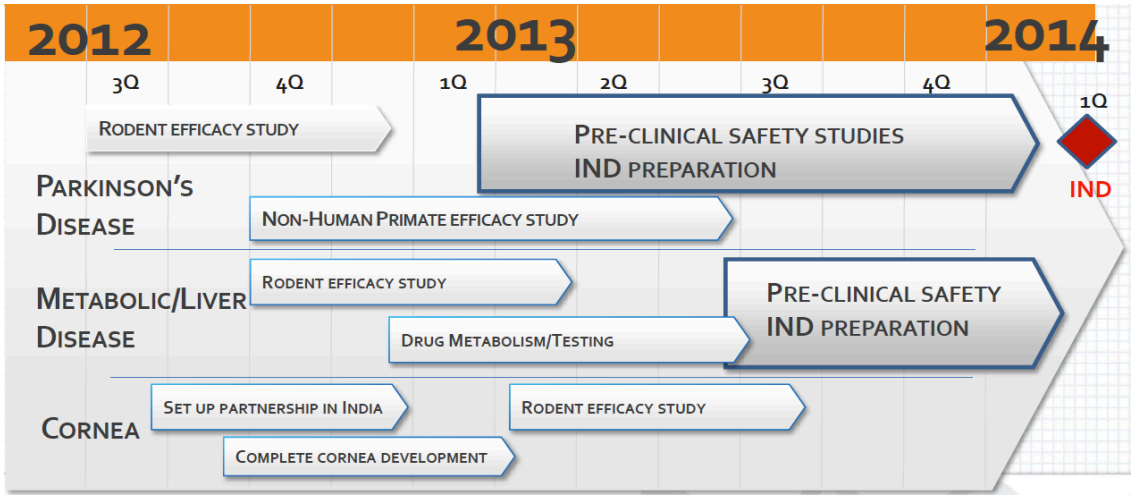
Liver Disease: ISCO is also developing parthenogenetic cells for a number of rare metabolic liver diseases. According to the American Liver Foundation, one in ten people are affected by liver disease, and the only effective treatment currently for people with liver failure is full or partial organ transplantation, expensive procedures which can cost about $0.6mn per person. Notably, the demand for liver transplants far exceeds the number of organs available. Currently there are nearly 17,000 people on the waiting list for a liver transplant in the US and only about 1/3 of the people on this list are likely to receive a liver. Considering these factors, there is a need for an alternative treatment that can be made available to a greater population. ISCO is using parthenogenetic stem cells to develop hepatocyte-like cells (HLCs). Hepatocytes are the main tissue of the liver, representing over 70% of the liver's cytoplasmic mass. ISCO, which it hopes will develop into an alternative to transplantation of primary hepatocytes. In February ISCO recently released positive animal safety and efficacy results from a pre-clinical study in which it implanted HLCs in rodents with a well-established animal model of a congenital liver disorder associated with bilirubin metabolism. The study indicated that the HLCs produced a significant initial decrease and long-term stabilization of bilirubin levels in blood serum.

Corneal Disease: Corneal disease is another application for ISCO's human parthenogenetic stem cells. Although there is a mature market for corneal transplants in the U.S., there are 10m people worldwide in need of corneal transplants. ISCO plans to focus on developing markets such as India and China where 6mn people are in need of corneal transplants. As organ donation is uncommon in developing nations, the supply of corneal tissue remains low. ISCO's ability to assemble corneal tissue in laboratory will help the company tap the potential $1bn market. The company and a leading Indian eye hospital are collaborating for pre-clinical and clinical development, and we expect the company to pursue partnership and/or licensing opportunities to commercialize a cornea product for India to address this large opportunity.

Therapeutic timeline

We believe there are several key milestones on the horizon for ISCO's development of therapeutic products for brain, liver, and cornea diseases, per the following graphic, which was provided by the company. In our opinion, successful progress developing applications for the company's human parthenogenetic stem cell platform has the potential to increase the value of the business because it demonstrates the value of ISCO's proprietary stem cell technology platform.

Figure 3. Near-term therapeutic milestones



Source: Company filings, SeeThruEquity Research

Near-term revenue from growing Lifeline subsidiaries

In addition to its therapeutic pursuits, ISCO is generating revenues through two wholly-owned operating subsidiaries, Lifeline Skin Care and Lifeline Cell Technology. Together these businesses generated $4.4mn in revenue over the last four quarters, and management has high growth expectations for both. Lifeline Skin Care manufactures a line of anti-aging skin care products based on extracts derived from pluripotent human parthenogenetic stem cells. This is currently a $2mn business which is distributed online, through international distributors, and through strategic partners such as Miraval, Marriott, and the Four Seasons. Lifeline Cell Technology is a business-to-business research products company that manufactures and markets over 120 products including human primary cells, media, and reagents.

These businesses have attractive margins and over time may be able to generate enough cash to reduce the amount of external capital needed for ISCO to develop its therapeutic products. We estimate that the Lifeline subsidiaries combined would need to be generating $17-20mn in annual revenue in order to fully offset research and development investment in ISCO's therapeutic stem cell applications. Lifeline Cell Technology announced in 4Q12 that it would sell its human cell products through Fisher Scientific's online catalog as an Encompass Preferred Supplier. This has the potential to open up sales opportunities for ISCO, as the partnership will provide the company access to large pharmaceutical companies, which typically purchase R&D supplies using preferred supplier agreements. Simultaneously, ISCO's wholly owned subsidiary SkinCare, which sells anti-aging skin care products, entered into an agreement with Sinopharm Group to sell its product in China. With a market worth $8bn growing at 10% per year, leveraging upon the clinical network of Sinopharm Group will provide significant boost to the company's sales.

Equity to fund operations

ISCO has a weak balance sheet and needs to raise additional capital. The company has a burn rate of approximately $600,000 per month and only $2mn of cash on hand. ISCO management owns 29% of the company and has invested in the business to continue to fund its operations. In aggregate the management team has invested approximately $16mn in ISCO. Currently the company has filed an S-1, which could be used to raise approximately $15 in gross proceeds in common equity and warrants. Additionally, the company has a commitment with Aspire Capital to raise up to $25mn in equity, subject to price limitations, which it may use to fund operations if necessary. As of December 5, 2012, ISCO has sold Aspire Capital 9.3mn shares of common stock for aggregate proceeds of $5.9mn and may sell Aspire Capital up to an additional $19.1 of common stock in the future.

COMPETITIVE LANDSCAPE

The US is the largest market for biotechnology products with more than 1,300 firms in the biotechnology industry. Medical biotechnology is the largest component of the industry with focus on unmet medical needs in diseases such as cancer, diabetes and HIV/AIDS. According to IMS Health, medicines derived from biotechnology were valued at $67bn in 2010. Biotechnology is an evolving industry with 25% of drugs in either trial phases or awaiting FDA approval.

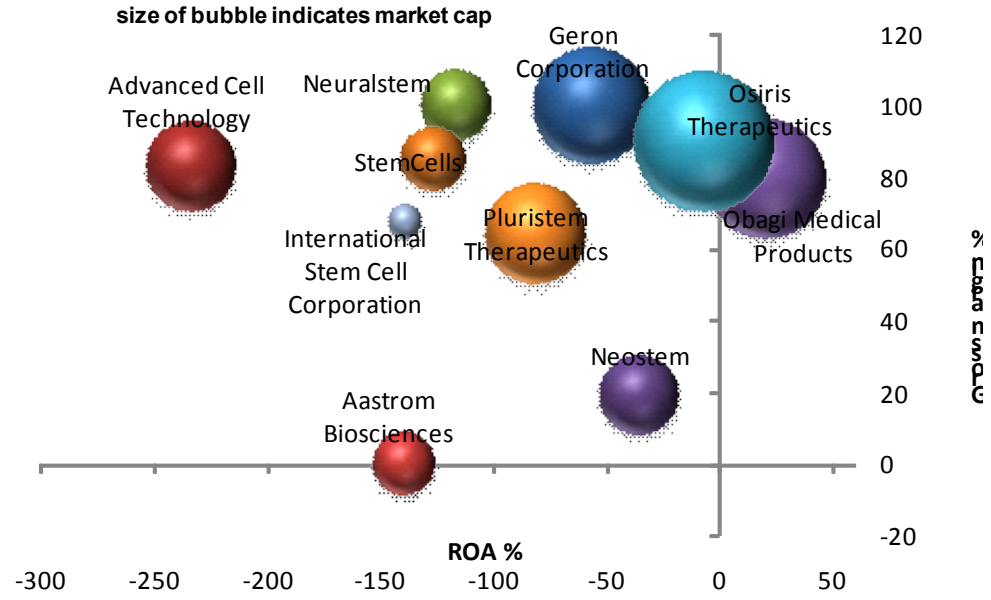
Stem cell technology is an important area of innovation and growth for the biotechnology industry. The stem cell market is divided into the following segments: cell-based treatments; umbilical cord blood banking; and use of stem cells to determine the efficiency and safety of new drugs developed using other methods. Stem cell research focuses on exploring areas of diseases such as Parkinson's disease, amyotrophic lateral sclerosis, cardiovascular diseases, and several arterial diseases for replacing damaged cells with stem cells.

Despite the controversies surrounding stem cell research, the field continues to thrive in the US. In 2011, the National Institutes of Health (NIH) funded approximately $1.2bn for stem cell research with $123mn devoted specifically for human embryonic stem cells. Furthermore, as per market research firm companiesandmarkets.com, the global stem cell industry is expected to grow from $410mn in 2008 to $2.68bn by year-end and thereafter to $5.1bn.

ISCO has prioritized research on Parkinson's disease, along with liver cells and corneal tissue transplant. The company's competitors in stem cell therapies include Genzyme Corporation, Stem Cell, Advanced Cell Technology, and Viacyte. In the skincare market, ISCO faces competition from Obagi, SkinCeuticals, SkinMedica, and Murad. Given the potential opportunity for stem cell therapy, competition is expected to intensify in the coming years.

When compared to small to mid-range peers, the main point of differentiation is that ISCO has a patented technology that provides pluripotent parthenogenetic stem cells without destroying the embryo, as well as provides immune-matching for millions of people. This provides ISCO a competitive edge over peers.

Figure 2. ROA vs. Gross Margin – ISCO vs. Peers



Source: Company filings, SeeThruEquity Research

FINANCIALS AND FUTURE OUTLOOK

Revenue/Drivers

We expect ISCO's product revenue to grow from $4.8mn in 2012E to reach $13.3mn in 2015E due further commercialization of Lifeline Skin Care products in Asia and growth in Lifeline Cell Technology from relationships with large distributors such as Fisher Scientific. We expect that a presence in Fisher Scientific's online catalogue as an Encompass Preferred Supplier will widen the company's reach to sell to pharmaceutical companies that have preferred supplier agreements, thereby driving sales. Additionally, ISCO is in preclinical stages for the treatment of three diseases using stem cells. In our opinion, it is likely that ISCO will seek licensing deals for its technology in the Phase I or Phase II stage. Our forecast assumes Phase I and Phase II occur during FY14 - FY17. Given the uncertainty of drug development and potential value for licensing deals, for valuation purposes we have modeled that the company brings its treatments to commercial development, with a risk factor at each stage of development. Assuming ISCO is able to successfully bring its target therapeutics products to commercialization, we have modeled the combined revenues from these treatments to expand at a CAGR of 44% to $1.1bn in 2030E from $85.5mn in 2023E. Note that since ISCO is a development stage biotechnology company, we have assigned probability ratings, or risk factors, to our forecast of each application, which substantially reduces the value ascribed to the out year forecasts discussed above. We believe it is more likely that ISCO will seek a licensing partner for each clinical application of its technology than bring each product to commercialization.

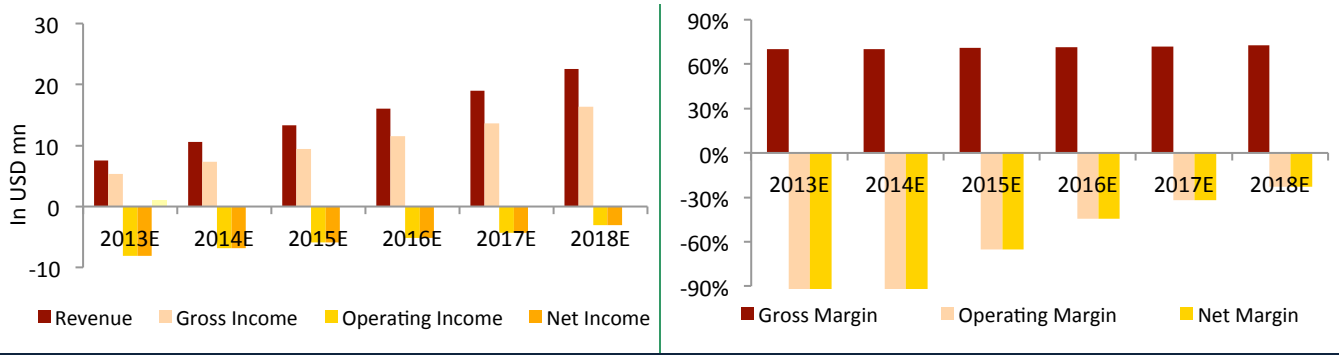
Margins/Expenses

During 2012–15, we expect cost of sales for the product segment (as a percentage of product revenue) to decline from 30% in 2012E to 29% in 2015 and decline thereafter to 27.5%. We note that gross margins in the Lifeline Skin Care segment are higher than Lifeline Cell Technology, and thus overall margins could be affected by mix. During the same period, we expect continued investment in R&D expenses, which we expect will grow from $3.6mn in 2012E to $5.5mn by 2015E accounting for the various trial expenses related to stem cell therapies. Assuming successful approval and commercialization of stem cell-based therapies, we assume their cost of production would range between 40–50% (as a % of revenue) during 2023–27 and to stabilize at 35% thereafter. We expect ISCO to generate operating losses through commercialization of its stem cell therapies, though management has indicated that it believes combined Lifeline revenue levels of $20mn could cover the cost of therapeutic product development.

Balance Sheet

ISCO has a weak balance sheet with cash on hand of approximately $2mn and a cash burn of $0.50-$0.65mn per month. ISCO raised $4.9mn through preferred stock issued during 9M12 and recently raised an additional $2mn in an equity investment funded by management. We note that ISCO management has now invested over $16mn of personal capital into the business and owns nearly 30% of the company. At present the company has filed an S-1 seeking to raise up to an additional $15mn in equity and warrants, and we expect that ISCO will continue to seek to raise capital in the future. We expect ISCO will require at least another $8mn of additional capital to fund operating expenses through the filing of its IND application for a treatment for Parkinson's disease in 1H14. We believe the company will continue to require significant capital investment beyond this stage in order to fund further trials. We view partnership and license opportunities as well as the Lifeline subsidiaries as potential sources of capital in the future but have assumed the company is funded through equity raises for our model.

Figure 3. Key Performance Indicators of ISCO, FY13E–18E



Source: Company filings, SeeThruEquity Research

VALUATION

We have valued ISCO using two different valuation methods; DCF and Peer Group Valuation. Our blended valuation, combining the two methodologies mentioned above, yields a fair value of $0.54/share, representing an upside of 40.8% from the recent price of $0.38 as of February 12, 2013.

DCF

We use NPV approach as it best captures the valuation of biotechnology companies, especially those with drugs under development. With drugs for Parkinson, liver and cornea diseases in trial phases, we do not expect any revenues from them. We expect revenue for Skincare and Lifeline subsidiary to slowly pickup in coming years and revenue from the various drugs to begin from 2023. However for these drugs, we have incorporated risk factor (or probability) at each trial stage and then discount the after-tax, risk-adjusted cash flow at a weighted average cost of capital of 14.5%. Furthermore, we assume a terminal growth rate of 2.0% at the end of our forecast year (i.e. 2030), and thus arrive at a fair value of $0.59.

Figure 4. Discounted Cash Flow Analysis

$' 000	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E
A. Product Sales	Revenue	Revenue	Revenue	Revenue	Revenue	Revenue
Revenue	7,583	10,554	13,309	16,075	18,971	22,609
Costs	6,276	7,425	8,514	9,683	10,936	12,483
Net Cash Flow	784	1,877	2,877	3,835	4,821	6,076
B. Parkinson's Disease	Pre-clinical	Phase 1	Phase 1	Phase 2	Phase 2	Phase 3
Revenue	-	-	-	-	-	-
Costs	3,120	3,329	3,569	3,846	4,109	4,402
Net Cash Flow	(3,120)	(3,329)	(3,569)	(3,846)	(4,109)	(4,402)
Phase completion probability	100%	92%	68%	68%	31%	31%
After tax risk adjusted cash flow	(1,872)	(1,838)	(1,448)	(1,560)	(758)	(813)
C. Liver Disease	Pre-clinical	Phase 1	Phase 1	Phase 2	Phase 2	Phase 3
Revenue	-	-	-	-	-	-
Costs	3,120	3,329	3,569	3,846	4,109	4,402
Net Cash Flow	(3,120)	(3,329)	(3,569)	(3,846)	(4,109)	(4,402)
Phase completion probability	100%	92%	68%	68%	31%	31%
After tax risk adjusted cash flow	(1,872)	(1,838)	(1,448)	(1,560)	(758)	(813)
D. Corneal Disease	Pre-clinical	Pre-clinical	Phase 1	Phase 1	Phase 2	Phase 2
Revenue	-	-	-	-	-	-
Costs	3,120	3,329	3,569	3,846	4,109	4,402
Net Cash Flow	(3,120)	(3,329)	(3,569)	(3,846)	(4,109)	(4,402)
Phase completion probability	100%	100%	92%	68%	68%	31%
After tax risk adjusted cash flow	(1,872)	(1,997)	(1,970)	(1,560)	(1,667)	(813)
Total cash flows after tax and adjustments	(4,831)	(3,795)	(1,989)	(846)	1,637	3,638
Discount Factor	0.99	0.87	0.76	0.66	0.58	**0.51**
DCF	(4,803)	(3,296)	(1,509)	(561)	948	1,840
Terminal Value						564,359
PV of Terminal Value						56,424
Total NPV						**107,939**
Fully diluted shares (mn)						183,023
Fair value per share ($)						**0.59**

Summary conclusions		**Key assumptions**	
DCF FV ($ per share)	0.59	Beta	1.2
Current price ($ per share)	0.38	Cost of equity	14.5%
Upside (downside)	55.2%	Cost of debt (post tax)	0.0%
Implied P/E	N/A	WACC	14.5%
Implied Price/Revenue(2013E)	8.2	Terminal Growth Rate	2.0%

Source: SeeThruEquity Research

Figure 5. Sensitivity of Valuation – WACC vs. Terminal Growth Rate

Terminal growth rate (%)	WACC (%)				
	13.5%	14.0%	14.5%	15.0%	15.5%
1.0%	0.59	0.57	0.56	0.55	0.54
1.5%	0.60	0.59	0.58	0.57	0.56
2.0%	0.62	0.60	0.59	0.58	0.57
2.5%	0.63	0.62	0.60	0.59	0.58
3.0%	0.65	0.64	0.62	0.61	0.59
3.5%	0.67	0.65	0.64	0.62	0.61

Source: SeeThruEquity Research

Peer Group Valuation

We compared ISCO with its peers in the biotechnology industry such as Geron Corporation, Neuralstem, Inc., StemCells, Inc., Neostem Inc., Aastrom Biosciences, Inc., Advanced Cell Technology, Inc. among others, under the market multiple approach. Our NPV valuation of $0.59 per share implies estimated revenue of $0.09 in 2013E and a forward P/S of 7.45, indicating ISCO would be trading at a discount relative to the list of selected peers.

We arrived at a fair value of $0.50-$0.52 per share based on EV/Revenue and P/Revenue multiples of selected peers. We considered a target multiple of 6.85x for the EV/Revenue multiple and 2013E revenue of $7.6mn to arrive at a fair value of $0.52 per share. Similarly, we used a P/Revenue multiple of 6.90x to the 2013E Revenue forecast of $0.07/share, we arrive at a fair value of $0.50 per share.

Figure 6. Comparable Valuation

Company	Mkt cap ($ mn)	EV/Revenue(x)		Price/Revenue(x)	
		FY12E	FY13E	FY12E	FY13E
Geron Corporation	222.3	47.6	32.6	86.9	59.5
Neuralstem, Inc.	81.6	nm	nm	nm	nm
StemCells, Inc.	65.5	29.2	21.4	40.5	29.7
Neostem Inc.	101.2	3.0	6.3	2.7	5.7
Aastrom Biosciences, Inc.	61.3	nm	nm	nm	nm
Athersys, Inc.	53.1	5.2	3.0	3.4	2.0
Advanced Cell Technology, Inc.	133.7	na	na	na	na
Obagi Medical Products, Inc.	232.3	1.8	1.7	1.9	1.8
BioTime, Inc.	178.6	45.8	na	43.1	na
Osiris Therapeutics, Inc.	324.1	24.8	15.2	28.0	17.2
Pluristem Therapeutics Inc.	212.4	nm	nm	nm	nm
Cytori Therapeutics Inc. (USA)	164.1	18.0	8.1	17.2	7.8
Average		**10.5**	**6.9**	**10.6**	**6.9**
ISCO	40.1	7.9	5.0	6.9	5.3
Premium/ (discount)		(25.0%)	(26.7%)	(35.4%)	(23.3%)

Source: SeeThruEquity Research

RISK CONSIDERATIONS

Emerging company

ISCO is an early stage company with a history of losses and no prospects for earnings in the near future as it uses its resources to identify and develop potential therapeutic products. The company's therapeutic products are still in a pre-clinical stage, have not been tested on humans, and will require significant research, development, and testing before they can achieve regulatory approval. Human trials can be very difficult to design and implement. Additionally, this process is costly, can take a significant amount time to achieve, and will require ISCO to raise additional capital. The company's revenue-generating subsidiaries are also in early stages of development and would require several years of profitable growth, in our view, to fund ISCO's therapeutic drug pipeline development.

Liquidity

ISCO has limited financial resources and will likely need to find additional sources of liquidity in the future. The company indicated that its monthly burn rate was $675,000 as of September 2012, comprised of $600,000 of operating expenses and capital spending and patent costs of $75,000. Although ISCO generates revenue through its Lifeline Skincare and Lifeline Technologies subsidiaries, we believe that it will be many years before ISCO will have self-funding operations even assuming continued growth in these businesses.

Going Concern

ISCO's auditors expressed a "going concern" opinion in its 2011 audited financial results. The going concern opinion expressed doubt as to the company's ability to continue as a going concern without raising additional capital. Additionally, this opinion may make it more difficult to raise capital on good terms.

Regulatory

As a biotechnology company ISCO operates in a highly regulated industry. The process for regulatory approval of drug development by the FDA and other regulatory authorities is lengthy, uncertain and expensive. Additionally, ISCO's focus on human cell therapy increases the degree of scrutiny it faces. Although ISCO's focus is parthenogenetic stem cells derived from unfertilized oocytes, certain aspects of that work may involve the use of embryonic stem cells. Research utilizing embryonic stem cells is controversial, and currently subject to intense scrutiny, particularly in the area of the use of human embryonic material. Federal law prohibits the use of federal funds for creation of parthenogenetic stem cells, and there is risk that the company could be subject to legislative or administrative action in the future by groups opposed to the development of human embryonic cell research, which could limit, delay or prevent the company's product development.

Competition

ISCO operates in an extremely competitive field of biotechnology focused on cell therapy and stem cells. While ISCO appear to have achieved early differentiation by focusing on therapeutic properties of "hpSC" (human parthenogenetic stem cells), we expect that the company will be competing against fully integrated and more established pharmaceutical and biotechnology companies, many of whom have more resources available and better distribution than ISCO.

Dilution

ISCO has a significant amount of preferred stock outstanding. The company has issued Series A, Series B, Series D, and Series G preferred stock. These classes of preferred stock include voting rights, including the right to vote as a series on particular matters, preferences as to dividends and liquidation, conversion rights, redemption rights and sinking fund provisions. The company has 5,300,043 shares of preferred stock outstanding convertible into 30,973,200 shares of common stock. Additionally, ISCO has 6.9mn warrants and 39.6mn options and restricted stock outstanding for a total of 183mn potential shares outstanding on a fully diluted basis.

Technology

Although ISCO believes it has a strong portfolio of patents and technology licenses, many pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have been issued patents relating to cell therapy, stem cells, and other technologies potentially relevant to or required by ISCO's expected products.

Additionally, ISCO relies in part upon licenses form third parties, which have payment obligations or obligations to pursue commercial products under the licensed patents. If the company loses access to license rights it could result in costly or time-consuming litigation or potentially the loss of the licenses, which would likely have a severe negative impact on ISCO's business.

Management Team

Andrey Semechkin, PhD.,Chief Executive Officer and Co-Chairman of the Board

Dr. Andrey Semechkin is Chief Executive Officer of International Stem Cell Corporation. He is a specialist in system analysis, strategic planning and corporate management. He is a member of the Russian Academy of Sciences and has been Deputy Director of Institute of System Analysis since 2004. Professor Semechkin was awarded the Russian Government Award in Science and Technology in 2006 and has written several scientific books. He has over 20 years of experience creating and managing businesses across different industries and scientific sectors.

Linh Nguyen, Chief Financial Officer and Secretary

Ms. Linh Nguyen is Chief Financial Officer of International Stem Cell Corporation. She has over 18 years of experience in financial management. She served as chief financial officer of International Lottery & Totalizator Systems (ILTS), a publicly-traded global software and system developer of lottery and optical scan voting systems, where she was a member of the executive leadership team executing strategic initiatives, formulating policies and assessing financial viability of business opportunities. During her tenure at ILTS, Ms. Nguyen held various other roles, including director of finance and finance manager. Prior to ILTS, Ms. Nguyen held accounting positions with Phamatech, Osmonics, Academic Communication Associates, and AMN Healthcare Services. Ms. Nguyen earned a Master of Science in Executive Leadership from University of San Diego and B.S. in Business Administration with a concentration in Accounting, from California State University, San Marcos.

Simon Craw, PhD., Executive Vice President of Business Development

Dr. Simon Craw serves as Executive Vice President of International Stem Cell Corporation. He obtained his PhD in Chemistry from the University of Manchester and began his academic career at the University of Rio de Janeiro followed by positions at the University of Sydney and the University of Manchester. He has over eighteen years experience in research and development as well as operations and information technology at Merck, Astra-Zeneca and Novartis and as head of R&D Informatics and Regulatory Operations at ACADIA Pharmaceuticals. Dr. Craw's has numerous scientific publications and frequently speaks at international conferences

Ruslan Semechkin, PhD., Vice President of Research and Development, Board Member

Dr. Ruslan Semechkin serves as Vice President of Research and Development for International Stem Cell Corporation. Dr. Semechkin was trained in medical genetics, stem cell biology and international business administration and holds an MS degree from Faculty of Fundamental Medicine of Moscow State University. He earned his PhD degree in Physiology from Anokhin Research Institute of Normal Physiology, Russian Academy of Medical Sciences. Dr. Semechkin is a well known speaker on stem cell biology, including the use of stem cells for neurology and skin regeneration. He has publications in the field of clinical and molecular biology, and is author of various patent applications.

Donna Queen, President of Lifeline Skin Care Inc.

Donna Queen serves as President of Lifeline Skin Care Inc, a wholly owned subsidiary of International Stem Cell Corporation. Ms. Queen has over twenty years experience as a marketing executive. Prior to joining

ISCO, Ms. Queen was President and CEO of ZO SKIN HEALTH® by Zein Obagi, MD. Dr. Obagi is the dermatologist who created the original Obagi Nu-Derm skincare system, which has since become the leading physician-dispensed brand of anti-aging skincare. Earlier Ms. Queen founded and led one of Virginia's largest advertising and marketing agencies, specializing in aesthetic and dermatological marketing and brand development.

Francisco Bustamante, President of Lifeline Cell Technology, LLC

Mr. Bustamante has over eighteen years of experience in Operations of Biotechnology companies. His experience includes senior management positions in the areas of manufacturing, procurement, planning, warehousing, distribution and project management. Mr. Bustamante has an excellent understanding of the manufacture and logistics of cell culture products, biological instruments, molecular biology kits and diagnostics. He has led key projects in the areas of manufacturing resource planning (MRP) systems implementation, ISO compliance and product development. His industry experience includes Clonetics, BioWhittaker (Cambrex), Digene and Meso Scale Diagnostics. Mr. Bustamante received his BS degree in Biology from the University of San Diego and his MBA degree from Frostburg State University. He has been with Lifeline Cell Technology since 2007.

FINANCIAL SUMMARY

Figure 7. Income Statement

Figures in $mn unless specified	FY10A	FY11A	FY12E	FY13E	FY14E	FY15E
Revenue	**1.6**	**4.5**	**4.8**	**7.6**	**10.6**	**13.3**
YoY growth		189.0%	6.5%	*57.2%*	*39.2%*	*26.1%*
Cost of sales	0.7	1.6	1.4	2.3	3.2	3.9
Gross Profit	**0.8**	**2.9**	**3.4**	5.3	7.4	9.4
Margin	53.8%	64.3%	71.0%	*70.0%*	*70.0%*	*71.0%*
Operating expenses	11.3	14.3	12.7	13.4	14.2	15.4
EBIT	(10.5)	(11.4)	(9.3)	(8.1)	(6.9)	(5.9)
Margin	NM	NM	NM	*(106.2%)*	*(65.0%)*	*(44.4%)*
EBITDA	**(10.2)**	**(10.9)**	**(8.8)**	(7.6)	(6.3)	(5.2)
Margin	NM	NM	NM	*(99.9%)*	*(59.4%)*	*(38.9%)*
Other income/ (expense)	(2.3)	2.2	(0.0)	0.0	0.0	0.0
Profit before tax	(12.7)	(9.2)	(9.3)	(8.1)	(6.9)	(5.9)
Tax	0.0	0.0	0.0	0.0	0.0	0.0
Net income	**(14.3)**	**(9.6)**	**(10.8)**	(8.1)	(6.9)	(5.9)
Margin	NM	NM	NM	*(106.2%)*	*(65.0%)*	*(44.4%)*
Adjusted Net income	**(12.2)**	**(6.1)**	**(8.6)**	(5.1)	(3.5)	(2.4)
Margin	NM	NM	NM	*(67.1%)*	*(33.3%)*	*(18.2%)*
Adjusted EPS ($ per share)	**(0.18)**	**(0.08)**	**(0.10)**	(0.05)	(0.03)	(0.02)

Source: SeeThruEquity Research

Figure 8. Balance Sheet

Figures in $mn, unless specified	FY10A	FY11A	FY12E	FY13E	FY14E	FY15E
Current assets	7.6	3.0	4.9	3.9	5.2	6.9
Intangibles	1.0	1.3	1.6	1.6	1.5	1.4
Other assets	1.3	1.4	1.3	1.7	2.2	2.6
Total assets	**9.9**	**5.7**	**7.8**	**7.2**	**8.9**	**10.9**
Current liabilities	4.5	2.1	2.0	2.5	3.0	3.4
Other liabilities	0.0	0.0	4.9	4.9	4.9	4.9
Shareholders' equity	5.4	3.6	0.9	(0.2)	1.0	2.6
Total liab and shareholder equity	**9.9**	**5.7**	**7.8**	**7.2**	**8.9**	**10.9**

Source: SeeThruEquity Research

Figure 9. Cash Flow Statement

Figures in $mn, unless specified	FY10A	FY11A	FY12E	FY13E	FY14E	FY15E
Cash from operating activities	(6.9)	(7.0)	(7.5)	(8.7)	(6.9)	(5.6)
Cash from investing activities	(0.6)	(0.9)	(0.7)	(0.8)	(0.9)	(1.1)
Cash from financing activities	12.6	3.5	9.8	7.0	8.0	7.5
Net inc/(dec) in cash	**5.1**	**(4.4)**	**1.6**	**(2.5)**	**0.2**	**0.8**
Cash at beginning of the year	0.7	5.8	1.3	3.0	0.5	0.7
Cash at the end of the year	**5.8**	**1.3**	**3.0**	**0.5**	**0.7**	**1.5**

Source: SeeThruEquity Research

About International Stem Cell Corporation

International Stem Cell Corporation (OTCBB: ISCO) is focused on the therapeutic applications of human parthenogenetic stem cells (hpSCs) and the development and commercialization of cell-based research and cosmetic products. ISCO's core technology, parthenogenesis, results in the creation of pluripotent human stem cells from unfertilized oocytes (eggs) hence avoiding ethical issues associated with the use or destruction of viable human embryos. ISCO scientists have created the first parthenogenetic, homozygous stem cell line that can be a source of therapeutic cells for hundreds of millions of individuals of differing genders, ages and racial background with minimal immune rejection after transplantation. hpSCs offer the potential to create the first true stem cell bank, UniStemCell. ISCO also produces and markets specialized cells and growth media for therapeutic research worldwide through its subsidiary Lifeline Cell Technology (www.lifelinecelltech.com), and stem cell-based skin care products through its subsidiary Lifeline Skin Care (www.lifelineskincare.com). More information is available at www.internationalstemcell.com.

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