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Athersys Inc. (NASDAQ/ATHX)

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BUY: Out to a Year, Data is Consistent in ARDS and Supports Benefits in Quality-of-Life

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Athersys announced one-year follow-up summary results from its exploratory clinical study of the MultiStem (allogeneic cell therapy, or "pills in a bottle") to treat patients who are suffering from acute respiratory distress syndrome (ARDS). The one-year results are consistent with the positive day-28 results announced last year, and an evaluation of quality-of-life over the one-year period suggests further potential benefits from MultiStem treatment.

Investment Highlights

Quality-of-Life (QOL) Out to a year. As mentioned, Athersys announced follow-up results from a prior (exploratory) study of IV (intravenous) MultiStemin in Acute respiratory distress syndrome (ARDS) patients. These participants were evaluated through 28 days for the primary clinical assessment and again at a one-year follow-up. The one-year results were consistent with the positive day-28 results announced last year, and an evaluation of quality-of-life over the one-year period suggests further potential benefits from MultiStem treatment.

As provided in the press release:

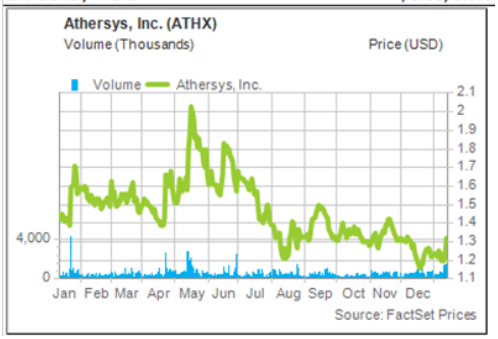
- Previously observed lower mortality for MultiStem-treated subjects compared to placebo (particularly among the prospectively defined subset of more severe ARDS patients) persisted out to one-year of follow-up;
- Day-365 Quality of Life (QoL) outcomes, assessed by the EQ-5D, were meaningfully better among all survivors who received MultiStem treatment compared to those who received placebo;
- Within the prospectively defined group of patients with more severe ARDS, MultiStem treatment was associated with a markedly greater rate of survival and progression to functional independence at one year (i.e., self-care);
- As measured at day-28, MultiStem treatment was associated with a higher mean ventilator-free day (VFD) score of 12.9 vs. 9.2 in the placebo group, and a higher mean intensive care unit (ICU)-free day score of 10.3 vs. 8.1 in the placebo group;
- As measured at day-28, among more severe ARDS patients, mean VFD in the MultiStem subgroup was 14.6 vs. 8.0 in placebo subgroup. Mean ICU-free days were 11.4 vs. 5.9 for MultiStem and placebo recipients, respectively;
- Lower inflammatory cytokine levels at day-7 in the MultiStem group relative to the placebo group, including IFNg, IL-6 and IL-1b among others, suggest the potential for MultiStem treatment to abate the severe inflammatory response associated with ARDS; and
- MultiStem treatment was well tolerated in this very sick ARDS patient population, with no serious adverse events related to administration through one year of follow-up.

Valuation. Our therapeutic models for MultiStem assume a probability of success (PoS) factor across the various indications. In addition to this, we also apply a 30% risk rate (r) in our Free Cash Flow to the Firm (FCFF), discounted EPS, and Some-Of-The-Parts (SOP) models. Our price target is derived from these three models, equally weighting and averaged to the nearest whole number. The result is a one-year price target of $11.00 per share. We caution ourselves that models can't predict clinical trial outcomes, but we do suggest that upon success the company is undervalued.

Current Price	**$1.32**
Price Target	**$11.00**

Estimates	F2019E	F2020E	F2021E
Expenses ($000s)	$ 54,166	$ 53,500	$ 46,615
1Q March	$ 14,705	$ 12,305	$ 10,721
2Q June	$ 14,163	$ 12,840	$ 11,188
3Q September	$ 11,981	$ 13,375	$ 11,654
4Q December	$ 13,317	$ 14,980	$ 13,052
	F2019E	F2020E	F2021E
EPS (diluted)	$ (0.31)	$ (0.31)	$ (0.24)
1Q March	$ (0.09)	$ (0.08)	$ (0.06)
2Q June	$ (0.06)	$ (0.08)	$ (0.06)
3Q September	$ (0.08)	$ (0.07)	$ (0.06)
4Q December	$ (0.08)	$ (0.08)	$ (0.06)
EBITDA/Share	($0.31)	($0.31)	($0.24)
EV/EBITDA (x)	529	531	688

Stock Data	
52-Week Range	$1.16 - $2.03
Shares Outstanding (mil.)	156.7
Market Capitalization (mil.)	$207
Enterprise Value (mil.)	$163
Debt to Capital	0%
Book Value/Share	$0.19
Price/Book	4.8
Average Three Months Trading Volume (K)	413
Insider Ownership	9.8%
Institutional Ownership	21.8%
Short interest (mil.)	7.7%
Dividend / Yield	$0.00/0.0%



The Driver for Athersys is Stroke. Athersys currently has two-Phase 3 Programs – One in Japan, the other program is global. Athersys is currently enrolling patients in the U.S. pivotal trial –MASTERS-2 (N=300) and partner Healios is enrolling patients in the TREASURE (N=220) study in Japan.

Why Do We Believe MultiStem Works? We have analyzed the Phase 2 data in some detail. We see an extraordinarily safe therapy that does show compelling data, albeit in a post-hoc-analysis. Key to our understanding is the fact that time is brain. Beyond the 36 hours, the impact of MultiStem is limited. The data suggest that these cells can down-regulate the inflammatory response while upregulating healing. In doing so, they appear to limit the damage to the initial ischemic insult. The data is very consistent with our understanding of the mechanism of action.

Trial Design Parameters: The Europe – U.S. and Japan trials hope to prove efficacy by demonstrating a significant p-value around the primary endpoint. The US - European trial's design is almost identical to Japan's except that the primary endpoint in the U.S. trial will be a shift analysis, and the secondary endpoint will be "excellent outcomes" (Japan's trial is the opposite).

- **U.S. Primary endpoint:** A difference (p-value) in the modified Rankin Scale (mRS) shift analysis. This metric considers "disability across the full spectrum, enabling recognition of large and small improvements in disability and differences in mortality and other serious outcomes, among strokes of different severities". It is based on disability using an mRS at three months. Other parameters are consistent between the Japan and the U.S. trials, such as the treatment window (18-36 hours). The key secondary endpoint (the primary endpoint in the Japan trial) is excellent outcome score (mRS ≤1, NIHSS ≤1, and Barthel Index ≥95) at three months and one year. Additionally, the study will consider other measures of functional recovery, biomarker data, and clinical outcomes, including hospitalization, mortality life-threatening adverse events and post-stroke complications such as infection.

- **The trial in Japan** is a placebo-controlled, double-blind, Phase 2/3 trial testing the efficacy and safety of MultiStem in N=220 patients with ischemic cortical stroke, randomized 1:1 to either MultiStem or placebo, being conducted by Healios. The study is enrolling patients today and based on current enrollment is estimated to complete (top-line data) in late 2020, with full-year results in mid-2021.

- **Two Bites at the Apple, The U.S. study.** This is a placebo-controlled, double-blinded, Phase 3 trial of MultiStem in N=300 acute ischemic cortical stroke patients randomized 1:1 to MultiStem or placebo, being conducted by Athersys. The trial enrollment is expected to complete in late 2020, with top-line results (90-day assessment), available approximately 4-5 months after the last patient is enrolled with a one-year follow-up. Since there are two assessments built-in, we see two bites at the apple. A statistically significant result at 90 days sets the stage for approval, but even if the result is not significant, if it is at the one-year follow-up (remember improvement between active and control, over-time, is exactly what was seen in the Phase 2 trial), we have an approvable product.

- **There are two study-design aspects that we believe are crucial in determining the probability of success for these trials.** First, the intravenous infusions of MultiStem will be given within 36 hours of the stroke diagnosis. As indicated, "time is brain" for these patients, meaning that the longer the inflammatory cascade is able to destroy cells in the patient's brain, the less likely the patient is to successfully recover from the stroke. Athersys (and Healios) have planned the study protocols to have MultiStem administered within a specific therapeutic window that was not only demonstrated to have clinical efficacy in the Phase 2 trial but is backed by years of clinical research on stroke treatment. The administration window of 18-36 hours of the stroke maximizes the impact by limiting the window to 36 hours. We note that this access window reaches 90%-95% of all stroke patients.

Beyond Stroke, there is a Robust Pipeline. The profile of the Multipotent Adult Progenitor cells (MAPCs) suggests applications across a variety of indications in neurological, inflammatory and immune, and cardiovascular areas. The MultiStem cells possess therapeutic benefits by exhibiting "drug-like" capabilities in immune system regulation, cell protection, and tissue repair.

Competitive Advantage with Scalable Manufacturing. The distinct cellular structure of the Multipotent Adult Progenitor Cells (MAPC) allows MultiStem to be commercially expanded through a proprietary manufacturing process. Once scaled, the cells can be frozen and conveniently stored in a vile for an extended period.

Risks to our thesis include the following: (1) clinical trial; (2) commercial; (3) employee; (4) financial; (5) intellectual property; (6) partnership; and (7) regulatory. We review these and other risks in the risk section of this report.

Modeling Assumptions

1. The MultiStem program is the main platform for the company, and we view it as the driver of the company's success. We assume Athersys continues developing the MultiStem program in neurological, cardiovascular, and inflammation and immunological disease areas and that these programs, like the MultiStem platform itself, are prioritized.
2. For the stroke (neurological) indication, we model approximately 800,000 stroke patients in the U.S. and 340,000 in Japan, with 87% of those classified as ischemic, growing at a rate of 0.1% annual since 2017. By factoring in mortality risk, cortical stroke prevalence, and the effective therapeutic treatment window, we arrive at an addressable market population.
3. Hemorrhagic stroke. Success in ischemic stroke sets the stage for Athersys to develop MultiStem in the small side of the stroke market, Hemorrhagic strokes. Here too, the inflammatory response contributes to additional secondary damage. While the complexities of ischemic stroke are challenging, hemorrhagic can be even more complex, and with even fewer options for patients. As such, it makes sense to develop for this indication only after the ischemic market is realized.
4. For the ADRS (immune) indication, we model the addressable population based on the NHLI estimate figure of 70 per 100,000 in the U.S., denoting an approximate 230,000 patients in 2017 growing at 3.1% annually.
5. For the AMI (cardiovascular) indication, we only model for new heart attacks as we believe they are more likely to be amenable to the trophic and anti-inflammatory effects of MultiStem. We anticipate the annual growth rate and mortality rate quoted by the American Heart Association continue to be high, at 11.1% and 15.5%, respectively, a reflection of the increasing obesity epidemic in the U.S. Considering the lengthy nature of cardiovascular trials, we do not begin to model sales until 2022, and we currently anticipate relatively low (8-10%) peak market penetration as cell therapy is not currently a standard of care in hospitals for treating AMI.
6. For the trauma (inflammatory) indication, we model the treatable population based on a reported 2.5 million trauma-related emergency room visits. Approximately 13% of those visits are due to debilitating ailments, leading to hospitalization. The estimation brings us to over 300,000 addressable patients growing at a rate of 3.1% annually.
7. For the GVHD (inflammatory) indication, we do currently assume any revenues in our model, but we show the model as we believe, with additional resources, Athersys may "down the road" re-visit development plans. The population of total U.S. allogeneic stem cell transplants based on 4,265 related and 4,972 unrelated transplants (2017 data) growing at a rate of 3.1% annually. We estimate 90% of that population to desire prophylactic treatment for GVHD.
8. We model a price for MultiStem at $25,000 initially, growing at 1% per year. Academic literature estimates that therapies such as tPA in stroke should be priced at $45,800 based on the quality-adjusted life years (QALY) provided to patients. In this instance, should a therapy allow for successful treatment beyond the three to six-hour therapeutic time window, the literature estimates this therapy should command a higher price. We, therefore, believe our pricing estimates are conservative, considering our belief in the upside therapeutic potential of MultiStem. We have seen examples of other cell (for example CAR-T) and gene therapies' command prices anywhere between $100k and $2.5M; given the blockbuster size of the stroke market, we recognize the therapy must be affordable for the market size.
9. But are also relatively in-line with other allogeneic cell therapies currently on the market, despite the other allogeneic cell therapies not being approved for the same targeted indications.
10. Our sum-of-the-parts model uses the same probabilities as the product models and the same discount rate as the FCFF. We apply a risk factor of 70% for the trauma and AMI clinical programs as they are in earlier stages (neither beyond Phase 2) and have only been tested in a limited number of patients. We anticipate reducing this risk factor should the trials meet our assumptions of producing data in the next year. For royalties and partnerships, we also use 50% because they are dependent on a third party, Healios, and therefore do not provide transparency in terms of timing of cash flows to Athersys. Lastly, the stroke and ARDS indications have a 50% risk factor as a result of the inherent variability associated with stroke and the fact that the current pivotal programs are based on a post-hoc analysis.
11. Discount rate. We use a 30% discount rate to account for the fact that Athersys is not yet a profitable company, with assets still in clinical development and several years from commercialization. For this reason, we add an additional risk premium to the calculated WACC to arrive at our 30% discount rate.

Exhibit 1. MultiStem Ischemic Stroke (U.S.).

Ischemic Stroke (U.S.)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
No. of Annual Strokes	696,000	696,696	697,393	698,090	698,788	699,487	700,186	700,887	701,588	702,289	702,991	703,694	704,398	705,102
Market Size Growth	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Associated Mortality	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%
Ischemic Strokes Survivors	582,552	583,135	583,718	584,301	584,886	585,471	586,056	586,642	587,229	587,816	588,404	588,992	589,581	590,171
Total cortical ischemic stroke patients (35%)	203,893	204,097	204,301	204,505	204,710	204,915	205,120	205,325	205,530	205,736	205,941	206,147	206,353	206,560
Market Share Penetration	0%	0%	0%	0%	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%
Number of Patients Procedures	-	-	-	-	-	29,274	58,606	87,996	117,446	146,954	176,521	206,147	235,832	265,577
Cost of Therapy						$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Risk Factor						50%	50%	50%	50%	50%	50%	50%	50%	50%
Total Revenue ('000)						**$ 365,919**	**$ 732,570**	**$1,099,954**	**$1,468,072**	**$1,836,925**	**$2,206,514**	**$2,576,841**	**$2,947,906**	**$3,319,711**

Source: Dawson James estimates.

Exhibit 2. MultiStem Ischemic Stroke (Japan).

Ischemic Stroke (Japan)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
No. of Annual Strokes	295,800	296,096	296,392	296,688	296,985	297,282	297,579	297,877	298,175	298,473	298,771	299,070	299,369	299,669
Market Size Growth	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Associated Mortality	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%	16.3%
Ischemic Strokes Survivors	247,585	247,832	248,080	248,328	248,576	248,825	249,074	249,323	249,572	249,822	250,072	250,322	250,572	250,823
Total cortical ischemic stroke patients (35%)	86,655	86,741	86,828	86,915	87,002	87,089	87,176	87,263	87,350	87,438	87,525	87,613	87,700	87,788
Market Share Penetration	0%	0%	0%	0%	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%
Number of Patients Procedures	-	-	-	-	-	12,441	24,907	37,398	49,914	62,455	75,021	87,613	100,229	112,870
Cost of Therapy						$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Risk Factor						50%	50%	50%	50%	50%	50%	50%	50%	50%
Japan Annual Sales						**$ 155,516**	**$ 311,342**	**$ 467,480**	**$ 623,931**	**$ 780,693**	**$ 937,769**	**$1,095,157**	**$1,252,860**	**$1,410,877**
Royalty to Athersys						8%	10%	12%	14%	15%	15%	15%	15%	15%
Total Revenue ('000)						**$ 12,441**	**$ 31,134**	**$ 56,098**	**$ 87,350**	**$ 117,104**	**$ 140,665**	**$ 164,274**	**$ 187,929**	**$ 211,632**

Source: Dawson James estimates.

Exhibit 3. MultiStem Hemorrhagic Stroke (U.S.)

Hemorrhagic Stroke (U.S.)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
No. of Annual Hem. Strokes (13% of total)	90,480	90,570	90,661	90,752	90,842	90,933	91,024	91,115	91,206	91,298	91,389	91,480	91,572	91,663
Market Size Growth	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Associated Mortality	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Hemorrhagic Strokes Survivors	63,336	63,399	63,463	63,526	63,590	63,653	63,717	63,781	63,844	63,908	63,972	64,036	64,100	64,164
Market Share Penetration	0%	0%	0%	0%	0%	0%	0%	15%	30%	50%	55%	60%	65%	70%
Number of Patients Procedures	-	-	-	-	-	-	-	9,567	19,153	31,954	35,185	38,422	41,665	44,915
Cost of Therapy							$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Risk Factor							50%	50%	50%	50%	50%	50%	50%	50%
Total Revenue ('000)						**$ -**	**$ -**	**$ 119,589**	**$ 239,417**	**$ 399,427**	**$ 439,809**	**$ 480,271**	**$ 520,814**	**$ 561,438**

Source: Dawson James estimates.

Exhibit 4. MultiStem Acute Respiratory Distress Syndrome (U.S.).

Acute Respiratory Distress Syndrome (U.S.)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
No. of Annual Cases	228900	235,996	243,312	250,854	258,631	266,648	274,915	283,437	292,223	301,282	310,622	320,251	330,179	340,415
Market Size Growth	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Market Share Penetration			0.0%	0.0%	0.0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
Number of Patients Procedures			-	-	-	2,666	5,498	8,503	11,689	15,064	18,637	22,418	26,414	30,637
Cost of Therapy						$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Risk adjustment						50%	50%	50%	50%	50%	50%	50%	50%	50%
Total Revenue ('000)						**$ 33,331**	**$ 68,729**	**$ 106,289**	**$ 146,112**	**$ 188,302**	**$ 232,967**	**$ 280,220**	**$ 330,179**	**$ 382,967**

Source: Dawson James estimates.

Exhibit 5. MultiStem Acute Myocardial Infarction (U.S.).

Acute Myocardial Infarction (U.S.)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
No. of Annual Heart Attacks	720,000	799,920	888,711	987,358	1,096,955	1,218,717	1,353,994	1,504,288	1,671,264	1,856,774	2,062,876	2,291,855	2,546,251	2,828,885
Market Size Growth	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%
Associated Mortality			15.5%	15.5%	15.5%	15.5%	15.5%	15.5%	15.5%	15.5%	15.5%	15.5%	15.5%	15.5%
AMI Survivors			750,961	834,318	926,927	1,029,816	1,144,125	1,271,123	1,412,218	1,568,974	1,743,130	1,936,618	2,151,582	2,390,408
Market Share Penetration			0%	0%	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
Number of Patients Procedures			-	-	-	10,298	22,883	38,134	56,489	78,449	104,588	135,563	172,127	215,137
Cost of Therapy						$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Risk adjustment						70%	70%	70%	70%	70%	70%	70%	70%	70%
Total Revenue ('000)						**$ 77,236**	**$ 171,619**	**$ 286,003**	**$ 423,665**	**$ 588,365**	**$ 784,409**	**$1,016,724**	**$1,290,949**	**$1,613,525**

Source: Dawson James estimate.

Exhibit 6. Trauma (U.S.).

Trauma (U.S.)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Trauma Prevelance	2,500,000	2,577,500	2,657,403	2,739,782	2,824,715	2,912,281	3,002,562	3,095,642	3,191,606	3,290,546	3,392,553	3,497,722	3,606,152	3,717,942
Market Size Growth	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
% of Patients Hospitalized	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Treatable Population	312,500	322,188	332,175	342,473	353,089	364,035	375,320	386,955	398,951	411,318	424,069	437,215	450,769	464,743
Market Share Penetration			0%	0%	0%	0%	1%	3%	5%	7%	9%	11%	13%	15%
Number of Patients Procedures			-	-	-	-	3,753	11,609	19,948	28,792	38,166	48,094	58,600	69,711
Cost of Therapy							$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Risk adjustment						70%	70%	70%	70%	70%	70%	70%	70%	70%
Total Revenue ('000)							**$ 28,149**	**$ 87,065**	**$ 149,607**	**$ 215,942**	**$ 286,247**	**$ 360,703**	**$ 439,500**	**$ 522,836**

Source: Dawson James estimates.

Valuation. Our therapeutic models for MultiStem assume a probability of success (PoS) for all the forecast therapeutic indications. We project our model through the year 2030. For modeling purposes, we use a 30% risk rate (r) in our Free Cash Flow to the Firm (FCFF), discounted EPS, and Some-Of-The-Parts (SOP) models. Our price target is derived from these three models, equally weighting and averaged to the nearest whole number. The result is a one-year price target of $11.00 per share.

Exhibit 7. FCFF Model.

Average of Metrics	$	11
FCFF Price Target	$	12
Year		2019

DCF Valuation Using FCFF (mln):

units ('000)	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(46,889)	(53,484)	(46,598)	345,916	762,717	1,369,395	1,983,922	2,656,212	3,257,395	3,893,659	4,569,761	5,291,113
Tax Rate	0%	0%	0%	14%	16%	20%	24%	28%	29%	30%	31%	32%
EBIT(1-t)	(46,889)	(53,484)	(46,598)	297,488	640,682	1,095,516	1,507,781	1,912,473	2,312,750	2,725,561	3,153,135	3,597,957
CapEx	(1,685)	(1,854)	(2,039)	(2,243)	(2,467)	(2,714)	(2,985)	(3,284)	(3,612)	(3,974)	(4,371)	(4,808)
Depreciation	941	1,035	1,138	1,252	1,377	1,515	1,666	1,833	2,016	2,218	2,439	2,683
Change in NWC	(1,546)	-	-	-	-	-	-	-	-	-	-	-
FCFF	(46,088)	(54,303)	(47,500)	296,496	639,592	1,094,316	1,506,462	1,911,021	2,311,154	2,723,805	3,151,204	3,595,832
PV of FCFF	(46,088)	(41,771)	(28,106)	134,955	223,939	294,731	312,103	304,552	283,323	256,854	228,582	200,642

Discount Rate	30%	
Long Term Growth Rate	1%	
Terminal Cash Flow	12,523,414	
Terminal Value YE2030	698,789	
NPV	2,822,506	
NPV-Debt	-	
Shares out ('000)	237,372	
NPV Per Share	$ 12	

Source: Dawson James estimates.

Exhibit 8. Discounted EPS Model.

Current Year		2019
Year of EPS		2030
Earnings Multiple		15
Discount Factor		30%
Selected Year EPS	$	8.94
NPV	$	7.49

	Discount Rate and Earnings Multiple Varies, Year is Constant 2030 EPS					
Earnings Multiple	7.5	20%	25%	30%	35%	40%	45%
	10	$15.80	$10.08	$6.55	$4.33	$2.90	$ 1.97
	15	$23.70	$15.13	$9.83	$6.49	$4.35	$ 2.96
	20	$31.60	$20.17	$13.10	$8.65	$5.80	$ 3.94
	25	$39.50	$25.21	$16.38	$10.81	$7.25	$ 4.93
	30	$47.40	$30.25	$19.65	$12.98	$8.70	$ 5.91
	35	$55.30	$35.30	$22.93	$15.14	$10.15	$ 6.90
	40	$63.20	$40.34	$26.20	$17.30	$11.60	$ 7.88
	45	$71.10	$45.38	$29.48	$19.46	$13.05	$ 8.87

Source: Dawson James estimates.

Exhibit 9. Sum of the Parts Model.

Athersys Sum of the Parts	LT Gr	Discount Rate	Yrs. to Mkt	% Success	Peak Sales	Term Val
MultiStem Ischemic Stroke (U.S.)	1%	30%	3	50%	$4,742	$16,353
NPV						$6.27
MultiStem Hemmorhhaagic Stroke (U.S	1%	30%	3	50%	$1,123	$3,872
NPV						$1.48
MultiStem GI GVHD	1%	30%	3	50%	$0	$0
NPV						$0.00
MultiStem ARDS	1%	30%	6	50%	$766	$2,641
NPV						$0.46
MultiStem AMI	1%	30%	5	30%	$5,378	$18,546
NPV						$2.53
MultiStem Trauma	1%	30%	6	30%	$1,743	$6,010
NPV						$0.63
Net Margin						40%
MusltiStem-Japan Royalties	1%	30%	3	50%	$423	$1,460
NPV						$1.40
MM Shrs OS						237
						$12.77

Source: Dawson James estimates.

Risk Analysis

Clinical Risk: Athersys is an early-stage biotechnology company currently operating with high expenditures and no product revenues. A significant element of the company's valuation is associated with its lead clinical candidate MultiStem. As such, clinical progress with this stem cell product represents the key risk for the company and shareholders.

Commercial Risk: There can be no assurances that the pipeline products will be commercialized, and if they receive regulatory approval, there is a risk that Athersys will not be able to reach the projected market share potential.

Employee Risk: Athersys has an experienced management team, which plans to ideally bring MultiStem to market within the next three years. The success of the company may depend on the expertise, abilities, and continued services of its senior officers, sales staff, and key scientific personnel.

Financial Risk: Athersys has a high burn rate and is currently not a profitable company. The company might face multiple dilutions in the future to raise capital to fund its operations.

Intellectual Property Risk: The company may have to defend its patents and technical know-how, and there can be no assurances that the patents will not be infringed upon or will be held as valid if challenged, and the company may infringe on third party's patents.

Partnership Risk: The potential benefits from the partnership with Healios are subject to certain milestones, which if not achieved may delay commercialization in Japan and fail to provide payments to Athersys.

Regulatory Risk: There are no assurances that Athersys' products will be approved in the U.S., Japan, Europe, or other markets.

Exhibit 10. Income Statement.

Athersys, Inc. Income Statement ($ '000)	BI					BN	BS	BX	CC	CH	CM	CR	CW	DB	DG	DL	DQ
ATHX: YE Dec. 31	**2018A**	**1Q19A**	**2Q19A**	**3Q19A**	**4Q19E**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Product Revenue (000's)																	
MultiStem Ischemic Stroke (U.S.)									365,919	732,570	1,099,954	1,468,072	1,836,925	2,206,514	2,576,841	2,947,906	3,319,711
% Chg																	
MultiStem Ischemic Stroke (Japan) - Royalty									12,441	31,134	56,098	87,350	117,104	140,665	164,274	187,929	211,632
% Chg																	
MultiStem Hemmorhhaagic Stroke (U..S.)									-	-	119,589	239,417	399,427	439,809	480,271	520,814	561,438
% Chg																	
MultiStem ARDS									33,331	68,729	106,289	146,112	188,302	232,967	280,220	330,179	382,967
% Chg																	
MultiStem AMI									77,236	171,619	286,003	423,665	588,365	784,409	1,016,724	1,290,949	1,613,525
% Chg																	
MultiStem Trauma										28,149	87,065	149,607	215,942	286,247	360,703	439,500	522,836
% Chg																	
Total Revenues (Product Sales, Grants & Milestones)	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**488,928**	**1,004,052**	**1,754,997**	**2,514,223**	**3,346,065**	**4,090,610**	**4,879,033**	**5,717,278**	**6,612,108**
Contract revenues from Healios	22,276	1,441	4,193	(368)	1,441	6,707											
% Chg																	
License Fees - Contract revenues	1,461		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
% Chg																	
Grant Revenues	554	4	69	7	7	87	16	17	17	17	17	17	17	18	18	18	18
% Chg																	
Pfizer Milestones																	
% Chg																	
Total Revenues (Product Sales, Grants & Milestones)	**24,291**	**1,445**	**4,262**	**(361)**	**1,448**	**6,794**	**16**	**17**	**488,944**	**1,004,069**	**1,755,014**	**2,514,240**	**3,346,082**	**4,090,628**	**4,879,051**	**5,717,296**	**6,612,126**
Expenses																	
COGS (excludes royalties)	-	-	-	-	-	-	-	-	95,297	194,584	339,780	485,374	645,792	789,989	942,952	1,105,870	1,280,095
COGS % Product Sales		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
R&D	38,656	11,415	11,139	8,856	10,500	41,910	42,000	35,000	36,000	34,920	33,872	32,856	31,871	30,914	29,987	29,087	28,215
R&D % Rev's																	
G&A	10,442	3,106	2,867	2,958	2,650	11,581	11,500	11,615	11,731	11,848	11,967	12,087	12,207	12,330	12,453	12,577	12,703
G&A % Rev's																	
Other (depreciation)	855	184	157	167	167	941											
Total expenses	**49,953**	**14,705**	**14,163**	**11,981**	**13,317**	**54,166**	**53,500**	**46,615**	**143,028**	**241,352**	**385,619**	**530,317**	**689,870**	**833,233**	**985,392**	**1,147,534**	**1,321,013**
Oper. Inc. (Loss)	(25,662)	(13,260)	(9,901)	(12,342)	(11,869)	(47,372)	(53,484)	(46,598)	345,916	762,717	1,369,395	1,983,922	2,656,212	3,257,395	3,893,659	4,569,761	5,291,113
Gain from sale of insurance proceeds, net	617																
Oper. Inc. (Loss)	(25,045)																
Oper Margin	NM	NM	NM	NM	NM	NM	NM	NM	71%	76%	78%	79%	79%	80%	80%	80%	80%
Other Income Expense (net)	762	304	213	327													
Other Income (loss of unconsolidated affiliate																	
Equity Earnings (loss) of unconsolidated affiliate																	
Expense from change in fair value of warrants, net																	
Preferred Stock Dividends																	
Change in Warrant valuation																	
Deemed dividend resulting from induced conversion of convert p.stock																	
Pre-tax income	**(24,283)**	**(12,956)**	**(9,688)**	**(12,015)**	**(11,869)**	**(46,528)**	**(53,484)**	**(46,598)**	**345,916**	**762,717**	**1,369,395**	**1,983,922**	**2,656,212**	**3,257,395**	**3,893,659**	**4,569,761**	**5,291,113**
Taxes	-	-	-	-	-	-	-	-	48,428	122,035	273,879	476,141	743,739	944,645	1,168,098	1,416,626	1,693,156
Tax Rate	0%	0%	0%	0%	0%	0%	0%	0%	14%	16%	20%	24%	28%	29%	30%	31%	32%
Net Income	**(24,283)**	**(12,956)**	**(9,688)**	**(12,015)**	**(11,869)**	**(46,528)**	**(53,484)**	**(46,598)**	**297,488**	**640,682**	**1,095,516**	**1,507,781**	**1,912,473**	**2,312,750**	**2,725,561**	**3,153,135**	**3,597,957**
Net Margin	NM	NM	NM	NM	NM	NM	NM	NM	61%	64%	62%	60%	57%	57%	56%	55%	54%
EPS	**(0.18)**	**(0.09)**	**(0.06)**	**(0.08)**	**(0.08)**	**(0.31)**	**(0.31)**	**(0.24)**	**1.39**	**2.77**	**4.38**	**5.56**	**6.52**	**7.28**	**7.93**	**8.48**	**8.93**
Non GAAP EPS (dil)	(0.16)	(0.08)	(0.06)	(0.07)	(0.07)	(0.29)	(0.29)	(0.22)	1.41	2.79	4.39	5.58	6.54	7.30	7.94	8.49	8.95
Wgtd Avg Shrs (Bas) - '000s	136,641	145,964	150,163	153,096	153,861	150,771	169,558	183,880	189,456	195,202	201,122	207,221	213,505	219,980	226,651	233,525	240,607
Wgtd Avg Shrs (Dil) - '000s	136,641	145,964	150,163	153,096	156,158	151,345	174,538	197,234	213,492	231,090	250,140	270,759	293,079	317,238	343,388	371,695	402,334

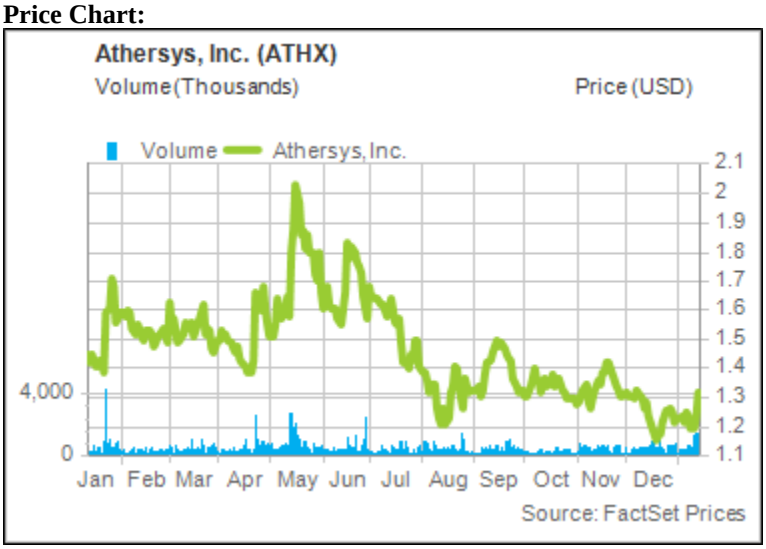
Source: Dawson James estimates.

Companies mentioned in this report:

Healios (TYO-4593: Not Rated)

Important Disclosures:

Price Chart:



Price target and rating changes over the past three years:
Initiated – Buy – August 26, 2019 – Price Target $11.00
Update – Buy – November 7, 2019 – Price Target $11.00
Update – Buy – January 14, 2020 – Price Target $11.00

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2) **Neutra**l: The analyst believes the price of the stock is fairly valued for the next 12-18 months;
3) **Sel**l: The analyst believes the price of the stock will decline by at least 20% over the next 12-18 months and should be sold.

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	Company Coverage		Investment Banking	
Ratings Distribution	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	25	86%	2	8%
Market Perform (Neutral)	4	14%	1	25%
Market Underperform (Sell)	0	0%	0	0%
Total	29	100%	3	10%

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