DAWSONJAMES SECURITIES

Member FINRA/SIPC

INSTITUTIONAL RESEARCH

Biotechnology

UPDATE REPORT

Toll-Free: 561-391-5555 ♦ www.DawsonJames.com ♦ 1 North Federal Highway - Suite 500 ♦ Boca Raton, FL 33432

Celsion Corporation (NASDAQ/CLSN)

August 19, 2019

BUY: Celsion Has the Power

Jason H. Kolbert
Head of Healthcare Research
646-465-6891
jkolbert@dawsonjames.com

Celsion reported 2Q19 earnings last week. The focus of the call was really on the Phase 3 OPTIMA study evaluating ThermoDox which is coming up on the first pre-specified interim analysis, at 128 events (deaths). Management walked us through the trial design powering assumptions which helps us assess the risk and probabilities of a positive outcome. We conclude that ThermoDox has a high probability of success when properly administered with the appropriate heating time on target.

Current Price	**$1.70**
Price Target	**$ 4.00**

Estimates	F2019E	F2020E	F2021E
Expenses ($000s)	$ 22,643	$ 23,775	$ 14,859
1Q January	$ 4,986	$ 5,706	$ 3,566
2Q April	$ 5,695	$ 5,944	$ 3,715
3Q July	$ 5,251	$ 5,944	$ 3,715
4Q October	$ 6,712	$ 6,182	$ 3,863
	F2019E	F2020E	F2021E
EPS (diluted)	$ (1.01)	$ (0.54)	$ (0.22)
1Q January	$ (0.12)	$ (0.13)	$ (0.05)
2Q April	$ (0.29)	$ (0.14)	$ (0.06)
3Q July	$ (0.27)	$ (0.14)	$ (0.06)
4Q October	$ (0.34)	$ (0.14)	$ (0.06)
EBITDA/Share			
EV/EBITDA (x)			

Stock Data	
52-Week Range	$1.35 - $3.10
Shares Outstanding (mil.)	21.4
Market Capitalization (mil.)	$36
Enterprise Value (mil.)	$46
Debt to Capital	26%
Book Value/Share	$1.55
Price/Book	1.3
Average Three Months Trading Volume (K)	106
Insider Ownership	0.8%
Institutional Ownership	6.1%
Short interest (mil.)	1.3%
Dividend / Yield	$0.00/0.0%

Update - August 19, 2019 - Buy - Price Target $4.00

Investment Highlights

Events Reached for First Interim Analysis. Celsion (on August 5, 2019) announced the prescribed number of events has been reached for the first pre-planned interim analysis of the OPTIMA Phase 3 Study with ThermoDox plus RFA in patients with HCC.

Results in October. In accordance with the statistical plan, this initial interim analysis has a target of 118 events, or 60% of the total number required for the final analysis (we note that the data base has now been lock at 128 deaths. The hazard ratio for success at 128 events is approximately 0.637, which represents approximately a 57% improvement in immediate survival vs. control. We note that this is consistent with the 0.65 hazard ratio, or 55% improvement seen in the prospective HEAT Study subgroup, (which OPTIMA is based upon), which demonstrated a two-year overall survival advantage and a median time to death of more than 7 ½ years.

What if the study has not reached the threshold for success at this first interim review? A second pre-specified interim analysis is to be conducted after 158 deaths. At this analysis, the hazard ratio necessary for success is 0.70 which actually represents a lower threshold for success. A hazard ratio of 0.70 represents an approximate 42% improvement in the median time to death over the control arm. So, the potential for a successful outcome is even greater when compared to the HEAT study (the data that the study was based on). The second interim is expected by 1H20.

Time on Target – 45 Minutes Matters. In the HEAT study, management identified a metric: 45 minutes of heating time; to be critical for ThermoDox in combination with RFA to improve survival. This patient group was followed for three years to determine an overall survival benefit. These patients demonstrate a median survival of more than 7.5 years, a survival benefit of more than two years over the control group who received 45 minutes or more of RFA alone.

Quarter Financials. Celsion spent $5.7M in operating expenses and closed the period with $22M in cash. NJ State Tax NOL's are likely to provide an additional $2M of non-dilutive cash in 2H19. The judicious use of the ATM facility raised an additional $2.7M. Management expects current cash to last through the middle of 2021 (well beyond critical catalysts ahead, that if positive, should translate into a value inflection for the stock).

Two Novel Nanoparticle-Based Technology Platforms. Celsion currently has two nanoparticle-based product candidates in development with their fight against cancer. The first, ThermoDox, takes advantage of LTSL (lysolipid thermally sensitive liposome) technology to encapsulate the commonly used cancer drug doxorubicin. This heat sensitive liposome is able to change its structure when exposed to temperatures between 40-45 degrees Celsius, allowing for openings that release doxorubicin into and around the targeted tumor. With ThermoDox, LTSL for delivery of known chemotherapeutics is the primary objective. The second, GEN-1, takes advantage of Celsion's TheraPlas technology platform to provide localized immunotherapies. GEN-1 consists of an interleukin-12 (IL-12) DNA plasmid vector formed into nanoparticles with a lipopolymeric delivery system.

ThermoDox and GEN-1. Celsion has recently completed enrollment of its Phase 3 OPTIMA study using ThermoDox to treat Primary Liver Cancer (hepatocellular carcinoma). The OPTIMA study is a global Phase 3 trial in HCC with first interim data expected in the second half of 2019. ThermoDox has also shown potential in treating non-muscle invasive bladder cancer and is currently in early development for that indication. Celsion is also currently enrolling the Phase 1/2 OVATION study with GEN-1 in treating Ovarian cancer. Phase 1 data from this trial is expected in the second half of 2019 as well. GEN-1 has also shown potential to treat Glioblastoma. The principal target indications are hepatocellular (HCC) and ovarian cancer, both of which represent large commercial opportunities for these nanoparticle-based platforms, as the need for effective treatments is great. HCC represents a global incidence of over 755,000 people, growing 3% annually. With a median survival time less than three years, and the 5-year survival rate less than 10%, the need for more effective treatment is apparent and Celsion hopes to deliver incremental improvements to the treatment paradigm.

Market Opportunity for Hepatocellular Carcinoma and Ovarian Cancer. Celsion is targeting its efforts towards HCC in the global market. As HCC continues to rise in incidence, it is expected to become the most common type of cancer, surpassing lung cancer by 2020. About half of all new cases arise in China, and almost three quarters of all new cases occur in Asia. Current curative treatment options are almost exclusively limited to surgery, which is only possible in about 20% of patients. RFA remains the therapy of choice for non-surgical candidates and is the current standard of treatment for non-resectable liver cancers. Despite this, the recurrence rate for lesions over three centimeters is about 50%, leaving a highly underserved population. ThermoDox, in combination with RFA, addresses the limitations of the current standard of care by expanding the treatment zone and using a probe placed directly in the tumor, killing tumor cells within its immediate vicinity. The RFA then creates a thermal zone in the margin surrounding the tumor where RFA misses micro-metastases outside the ablation zone. Doxorubicin is then released in the thermal zone, expanding treatment and surrounding areas, killing the metastases outside the ablation zone.

Ovarian Cancer. Celsion's GEN-1 IL-12 is a powerful immune-modulating agent, capable of inducing anti-cancer immunity through multiple mechanisms. With an incidence of 225,000 women worldwide and over 22,280 women in the US, ovarian cancer ranks fifth among the highest cancer mortality rates among women. The five-year survival rate is below 50%, and only about 15% of diagnosed patients with localized cancer are eligible for potentially curative surgery. With an addressable market opportunity over 100,000 patients and a lack of treatment options in advanced ovarian cancer, Using Interleukin 12 (IL-12), Celsion has developed mechanisms that can induce anti-cancer immunity such as activation/proliferation, maturation/proliferation, anti-angiogenesis, and inhibition of immune suppression.

Valuation: Celsion's success as a company is dependent on the clinical outcomes for ThermoDox and GEN-1. For the purposes of our model we project timelines through the year 2030. Our therapeutic models are risk adjusted. For the U.S. for ThermoDox we use just a 75% risk rate (25% probability of success) and in China we reduce this to 50%. For GEN-1 we assume just a 10% probability of success. Our models factor in assumed financings and use a fully diluted out-year (2030) share count. We triangulate FCFF, discounted EPS, and sum-of-the-parts models. We then averaged and equally weighted each model to derive the NPV and round to the nearest whole number to set our target price. Investors should recognize that this modeling exercise, which models out for 10 years, while projected based on the current data and estimates, is limited in its ability to predict a 12-month target. The price of the stock will ultimately be driven near term by factors such as news flow, early trial data, and cyclic concerns of financings (dilution).

Risk Analysis: (1) commercial; (2) regulatory; (3) clinical; (4) manufacturing; (5) financial; (6) liability; and (7) intellectual property. We review these and other risks in the risk section of this report.

Modeling Assumptions:

1. **Price & Timing for ThermoDox**. We assume a price of $40,000 for ThermoDox in Hepatocellular Carcinoma in both the United States and China with commercialization by 2023 which could prove conservative. We apply a 75% risk cut, or 25% probability of success in our U.S. model and 50% in our China model for conservatism. Clinical success suggests our valuation could be too low. We assume a modest market penetration that ramps up over five years as the patient population grows and these numbers also, could prove to be too conservative.
2. **Incidence and Prevalence of HCC:** Hepatocellular Carcinoma has the fourth highest mortality rate of all cancers with a median survival from time of diagnosis at less than three years. The five-year survival rate is less than ten percent, and less than twenty percent of early and intermediate stage patients are eligible for curative surgery. HCC has a global incidence of about 755,000 growing at 3% annually. The U.S. incidence is about 35,000 and the EU incidence is about 65,000 while China remains the largest market with an incidence over 375,000.
3. **Price & Timing for Gen-1**. We also assume a price of $40,000 for GEN-1 in Ovarian Cancer with commercialization by 2025. We apply a 90% risk cut, or 10% probability of success in our model and assume a modest market penetration.
4. **Incidence and Prevalence of Ovarian Cancer:** Ovarian Cancer hold the fifth highest mortality rate of all cancers among women with a five-year survival rate for all stages less than 50%. Over 70% of Women are diagnosed in advanced stages (III/IV), and only 15% of those diagnosed with localized cancer are eligible for potentially curative surgery. The survival rate is significantly reduced in non-localized cancer, and the most common site of recurrence is the abdomen. Intraperitoneal-administered therapy is an important clinical strategy. Ovarian Cancer remains the 8th most diagnosed cancer among women with a global incidence rate of 225,000. The incidence rate in the US is about 22,280 and 100,000 in developed countries.
5. **Patient Eligibility:** For the Phase 3 OPTIMA Study Design, patient's eligibility includes having nonresectable HCC, singles lesions, lesion > 3cm but not > 7cm, treatment naïve, and child-pugh A. In ovarian cancer, over 75% of incidence is within stage III/IV, and we assume that only the platinum-resistant proportion of ovarian cancer patients will be eligible for treatment.

Exhibit 9. Therapeutic Models

Hepatocellular Carcinoma; (US) (ThermoDox)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	30,000	31,200	32,448	33,746	35,096	36,500	37,960	39,478	41,057	42,699	44,407	46,184	48,031	49,952
Increase in incidence	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Patients with single lesion receiving RFAonly(20%)	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540	8,881	9,237	9,606	9,990
Patients with 3-7cm lesion meeting Thermodox criteria (20%)	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540	8,881	9,237	9,606	9,990
Total RFA patients that could benefit from Thermodox	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17080	17,763	18,473	19,212	19,981
% Market share	0%	0%	0%	0%	0%	0%	1%	2%	3%	4%	5%	5%	5%	5%
Total patients receiving Thermodox	0	0	0	0	0	0	151.84	316	493	683	888	924	961	999
Cost of therapy	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,400	$ 40,804	$ 41,212	$ 41,624	$ 42,040	$ 42,461	$ 42,885
Change in cost of therapy							0%	1%	1%	1%	1%	1%	1%	1%
Sales	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,074	$ 12,759	$ 20,104	$ 28,156	$ 36,968	$ 38,832	$ 40,789	$ 42,844
Risk Adjusted							75%	75%	75%	75%	75%	75%	75%	75%
Total Revenue (Millions)					-	-	1,518	3,190	5,026	7,039	9,242	9,708	10,197	10,711

Hepatocellular Carcinoma; (China) (ThermoDox)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	378,000	389,340	401,020	413,051	425,442	438,206	451,352	464,892	478,839	493,204	508,000	523,240	538,938	555,106
Increase in incidence	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Patients with single lesion receiving RF only (20%)	75,600	77,868	80,204	82,610	85,088	87,641	90,270	92,978	95,768	98,641	101,600	104,648	107,788	111,021
Patients with 3-7cm lesion meeting Thermodox criteria (20%)	75,600	77,868	80,204	82,610	85,088	87,641	90,270	92,978	95,768	98,641	101,600	104,648	107,788	111,021
Total RF patients that could benefit from treatment	200,000	202,000	204,020	206,060	208,121	210,202	212,304	214,427	216,571	218,737	220,924	223,134	225,365	227,619
% Market share	0%	0%	0%	0%	0.00%	0.00%	0.5%	0.5%	1%	1%	1.5%	2%	2.5%	3%
Total patients receiving treatment	-	-	-	-	-	-	1,062	1,072	2,166	2,187	3,314	4,463	5,634	6,829
Cost of therapy	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,400	$ 40,804	$ 41,212	$ 41,624	$ 42,040	$ 42,461	$ 42,885
Change in cost of therapy							0%	1%	1%	1%	1%	1%	1%	1%
Sales					-	-	42,461	44,181	88,370	90,146	137,937	187,813	239,229	292,846
Risk Adjusted							50%	50%	50%	50%	50%	50%	50%	50%
Total Revenue (Millions)					-	-	21,230	22,090	44,185	45,073	68,968	93,806	119,615	146,423

Ovarian Cancer (Gen-1)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	225,000	227,250	229,523	231,818	234,136	236,477	238,842	241,230	243,643	246,079	248,540	251,025	253,536	256,071
Change in incidence	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Patient Population in US and developed countries	122,280	123,503	124,738	125,985	127,245	128,518	129,803	131,101	132,412	133,736	135,073	136,424	137,788	139,166
Platinum resistant population in Europe and US	30,570	30,876	31,184	31,496	31,811	32,129	32,451	32,775	33,103	33,434	33,768	34,106	34,447	34,792
% Market share	0%	0%	0%	0%	0%	0%	0%	0%	2%	4%	8%	10%	11%	12%
Total patients receiving treatment	-	-	-	-	-	-	-	-	662	1,337	2,701	3,411	3,789	4,175
Cost of therapy	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,400	$ 40,804	$ 41,212	$ 41,624	$ 42,040
Change in cost of therapy	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%
Sales									$ 26,482	$ 54,029	$ 110,231	$ 140,558	$ 157,721	$ 175,518
Risk adjustment									90%	90%	90%	90%	90%	90%
Total Revenue (Millions)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,648	$ 5,403	$ 11,023	$ 14,056	$ 15,772	$ 17,552

Glioblastoma (Gen-1)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	22,850	22,850	23,079	23,309	23,542	23,778	24,016	24,256	24,498	24,743	24,991	25,241	25,493	25,748
Change in incidence	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Patients elligible for treatment, insurance coverage, 75%									30%	30%	30%	30%	30%	30%
% Market share	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%	15%	15%	15%	15%
Total patients receiving treatment	-	-	-	-	-	-	-	-	367	742	1,125	1,136	1,147	1,159
Annual cost of treatment	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,400	$ 40,804	$ 41,212	$ 41,624	$ 42,040
increase in price									0%	1%	1%	1%	1%	1%
Sales									$ 14,699	$ 29,989	$ 45,887	$ 46,810	$ 47,751	$ 48,710
Risk adjustment									100%	100%	100%	100%	100%	100%
Total Revenue (Millions)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Bladder (ThermoDox)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	80,470	82,079	83,721	85,395	87,103	88,845	90,622	92,435	94,283	96,169	98,092	100,054	102,055	104,097
Change in incidence	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Patient Population in US	700,000	714,000	728,280	742,846	757,703	772,857	788,314	804,080	820,162	836,565	853,296	870,362	887,769	905,525
Patients elligible for treatment	70,000	71,400	72,828	74,285	75,770	77,286	78,831	80,408	82,016	83,656	85,330	87,036	88,777	90,552
% Market share	0%	0%	0%	0%	0%	0%	0%	0%	5%	10%	15%	15%	15%	15%
Total patients receiving treatment	-	-	-	-	-	-	-	-	4,100.81	8,366	12,799	13,055	13,317	13,583
Cost of therapy	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 30,000	$ 30,300	$ 30,603	$ 30,909	$ 31,218	$ 31,530
Increase in price									0%	1%	1%	1%	1%	1%
Sales									$ 123,024	$ 253,479	$ 391,701	$ 403,531	$ 415,717	$ 428,272
Risk adjustment									100%	100%	100%	100%	100%	100%
Total Revenue (Millions)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Source: Dawson James

VALUATION

Our valuation is derived by our revenue projections for ThermoDox and GEN-1 in their respective indications of Hepatocellular carcinoma and ovarian cancer. We do not model any potential revenues from these programs until at least 2023 and project our model through the year 2030. Our therapeutic models are risk adjusted. For the U.S. for ThermoDox we use just a 75% risk rate (25% probability of success) and in China we reduce this to 50%. For GEN-1 we assume just a 10% probability of success. Our models factor in assumed financings and use a fully diluted out-year (2030) share count. We triangulate FCFF, discounted EPS, and sum-of-the-parts models. We then averaged and equally weighted each model to derive the NPV and round to the nearest whole number to set our target price. Investors should recognize that this modeling exercise, which models out for 10 years, while projected based on the current data and estimates, is limited in its ability to predict a 12-month target. The price of the stock will ultimately be driven near term by factors such as news flow, early trial data, and cyclic concerns of financings (dilution).

Exhibit 1. Free Cash Flow Model

Average	$	3.61

Price Target	$	3.13
Year		2020

DCF Valuation Using FCF (mln):

units ('000)	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(20,899)	(24,595)	(15,678)	(16,421)	2,135	3,721	26,237	30,830	59,579	87,613	115,532	142,081
Tax Rate	0%	0%	0%	0%	0%	5%	10%	15%	20%	25%	26%	27%
EBIT(1-t)	(20,899)	(24,595)	(15,678)	(16,421)	2,135	3,535	23,613	26,205	47,663	65,710	85,494	103,719
CapEx	-											
Depreciation	-											
Change in NWC	-											
FCF	(20,899)	(24,595)	(15,678)	(16,421)	2,135	3,535	23,613	26,205	47,663	65,710	85,494	103,719
PV of FCF	(24,034)	(24,595)	(13,633)	(12,417)	1,404	2,021	11,740	11,329	17,918	21,481	24,303	25,638
Discount Rate	15%											
Long Term Growth Rate	1%											
Terminal Cash Flow	748,261											
Terminal Value YE2030	184,959											
NPV	226,114											
NPV-Debt												
Shares out (thousands)	72,232	2030E										
NPV Per Share	$ 3.13											

Source: Dawson James

Exhibit 2. Discounted EPS Model

Current Year		2020
Year of EPS		2030
Earnings Multiple		10
Discount Factor		15%
Selected Year EPS	$	1.44
NPV	$	3.55

Source: Dawson James Estimates

Discount Rate and Earnings Multiple Varies, Year is Constant 2030 EPS						
Earnings Multiple	5%	10%	15%	20%	25%	30%
1	$0.88	$0.55	$0.36	$0.23	$0.15	$ 0.10
5	$4.41	$2.77	$1.78	$1.16	$0.77	$ 0.52
10	$8.83	$5.54	$3.55	$2.32	$1.54	$ 1.04
15	$13.24	$8.32	$5.33	$3.48	$2.32	$ 1.56
20	$17.65	$11.09	$7.11	$4.64	$3.09	$ 2.09
25	$22.07	$13.86	$8.89	$5.81	$3.86	$ 2.61
30	$26.48	$16.63	$10.66	$6.97	$4.63	$ 3.13
35	$30.90	$19.40	$12.44	$8.13	$5.40	$ 3.65

Source: Dawson James

Exhibit 3. Sum of the Parts Model

	LT Gr	Discount Rate	Yrs. to Mkt	% Success	Peak Sales MM's	Term Val
ThermoDox/HCC (US)	1%	15%	4	65%	$11	$76.51
NPV						$0.26
Thermodox/HCC (China)	1%	15%	4	65%	$146	$1,046
NPV						$3.55
Gen1/Ovarian Cancer (US)	1%	15%	6	65%	$18	$125
NPV						$0.32
Net Margin						65%
MM Shrs OS (2030E)						71
Total						$4.13

Source: Dawson James

Risk Analysis

Investment Risk: The company faces multiple investment risks from product management, market share adoption and commercialization to regulatory and competitive environment associated risks.

Clinical and regulatory risk: Celsion is currently in the process of completing their FDA clinical trials. There is no assurance that their product will be approved by the FDA and that even if approved, if it will be reimbursed by insurance or successfully commercialized.

Commercial risk: The focus of the company is on successfully developing their products and eventually bring them to the mass market. We can make no assurances that the company will be able to achieve a critical level of market share to become profitable in this indication and or in additional planned indications.

Employee risk: Celsion's core management team is experienced and has clear expectations for the future of the company. Atossa plans to bring their proposed products to market as efficiently as possible and their success will depend heavily upon the experience, abilities, and continued services of its senior officers, sales staff, and key scientific personnel.

Financial risk: Celsion may need to raise additional capital in the marketplace to continue to fund operations through more trials and eventually an NDA and possible commercial launch. There can be no assurances that the company will be able to successfully raise capital and do so on favorable terms.

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

Reimbursement and insurance payment risk: Insurance payment for products may be an additional hurdle for adoption.

Exhibit 4. Income Statement

Celsion Corporation.: Income Statement ($000)																							
.: YE December 31	1Q18A	2Q18A	3Q18A	4Q18A	2018A	1Q19A	2Q19A	3Q19E	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Product sales																								
Hepatocellular Carcinoma; (US) (ThermoDox)				0	-				-					-	-	-	1,518	3,190	5,026	7,039	9,242	9,708	10,197	10,711
Hepatocellular Carcinoma; (China) (ThermoDox)					-				-					-	-	-	21,230	22,090	44,185	45,073	68,968	93,806	119,615	146,423
Ovarian Cancer (Gen-1)					-				-					-	-	-	-	-	2,648	5,403	11,023	14,056	15,772	17,552
Glioblastoma (pre-clinical)					-				-					-	-	-	-	-	-	-	-	-	-	-
Non-Muscle Invasice bladder cancer (Pre-clinical)					-				-					-	-	-	-	-	-	-	-	-	-	-
Licensing Revenue	125	125	125	125	500	125	125		250															
Total Product Sales	125	125	125	125	500	125	125	-	-	250								22,749	25,280	51,859	57,515	89,234	117,570	145,584	174,686
Operating Expenses																								
Cost of Goods Sold																		3,412	3,539	6,742	6,902	8,923	8,230	7,279	8,734
%COGS																		15%	14%	13%	12%	10%	7%	5%	5%
Research and Development	2,741	4,594	2,187	2,344	11,866	2,768	3,558	3,115	3,018	12,459	3,140	3,270	3,270	3,401	13,082	13,736	14,423	15,144	15,901	16,696	17,531	18,407	19,328	20,294	21,309
%R&D																									
General and Administrative	1,665	3,543	1,960	2,532	9,700	2,218	2,137	2,137	3,693	10,184	2,566	2,673	2,673	2,780	10,694	1,123	1,179	1,238	1,300	1,365	1,433	1,505	1,580	1,659	1,742
%SG&A																		5%							
Acquistion Costs																									
Total expenses	4,406	8,136	4,147	4,875	21,565	4,986	5,695	5,251	6,712	22,643	5,706	5,944	5,944	6,182	23,775	14,859	15,602	19,794	20,740	24,802	25,866	28,835	29,138	29,232	31,785
Operating Income (Loss)	(4,281)	(8,011)	(4,022)	(4,750)	(21,065)	(4,861)	(5,570)	(5,251)	(6,712)	(22,393)	(5,706)	(5,944)	(5,944)	(6,182)	(23,775)	(14,859)	(15,602)	2,955	4,540	27,057	31,649	60,398	88,432	116,352	142,901
Investment income, net	74	73	107	100	354	114	145	145	145	548	145	145	145	145	578	578	578	578	578	578	578	578	578	578	578
Interest expense	-	(15)	(346)	(351)	(712)	(351)	(349)	(349)	(349)	(1,399)	(349)	(349)	(349)	(349)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)
Gain (loss) from change in valuation of common stock warrant liability																									
Loss from impairment of in-process research and development			(4,510)	-	(4,510)																				
Other income (expense)	1	(1)	0	(0)	0	0	(3)		-	(3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loss from valuation of earn-out milestone liability	(270)	(277)	4,115	63	3,631	3,130	(127)	(127)	(127)	2,749	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fair value of warrants issued in connection with amendment						(400)		-	-	(400)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total other income	(196)	(219)	(634)	(188)	(1,237)	2,493	(335)	(332)	(332)	1,495	(205)	(205)	(205)	(205)	(819)	(819)	(819)	(819)	(819)	(819)	(819)	(819)	(819)	(819)	(819)
Pretax Income	(4,477)	(8,231)	(4,656)	(4,939)	(22,302)	(2,367)	(5,905)	(5,583)	(7,044)	(20,899)	(5,911)	(6,149)	(6,149)	(6,386)	(24,595)	(15,678)	(16,421)	2,135	3,721	26,237	30,830	59,579	87,613	115,532	142,081
Income Tax Benefit (Provision)					10,419													-	186	2,624	4,624	11,916	21,903	30,038	38,362
Tax Rate																		0%	5%	10%	15%	20%	25%	26%	27%
GAAP Net Income (loss)	(4,477)	(8,231)	(4,656)	(4,939)	(11,883)	(2,367)	(5,905)	(5,583)	(7,044)	(20,899)	(5,911)	(6,149)	(6,149)	(6,386)	(24,595)	(15,678)	(16,421)	2,135	3,535	23,613	26,205	47,663	65,710	85,494	103,719
Deemed dividend related to warrant modification																									
Net Income attributable to common shareholders(loss)					(11,883)																				
Basic and Diluted	0.25	(0.46)	(0.26)	(0.21)	(0.68)	(0.12)																			
GAAP-EPS	(0.25)	(0.46)	(0.26)	(0.28)	(0.68)	(0.12)	(0.29)	(0.27)	(0.34)	(1.01)	(0.13)	(0.14)	(0.14)	(0.14)	(0.54)	(0.22)	(0.23)	0.1	0.0	0.3	0.4	0.7	0.9	1.2	1.4
GAAP EPS (dil)						(0.12)	(0.29)	(0.27)	(0.34)	(1.01)	(0.13)	(0.14)	(0.14)	(0.14)	(0.54)	(0.22)	(0.23)	0.1	0.0	0.3	0.4	0.7	0.9	1.2	1.4
Wgtd Avg Shrs (Bas) - '000s	17,684	17,743	17,801	17,801	17,583	19,105	20,606	20,812	21,020	20,386	45,406	45,451	45,497	45,542	45,474	70,625	70,802	70,979	71,157	71,335	71,514	71,693	71,872	72,052	72,232
Wgtd Avg Shrs (Dil) - '000s					17,583	19,105	20,606	20,812	21,020	20,386	45,406	45,451	45,497	45,542	45,474	70,625	70,802	70,979	71,157	71,335	71,514	71,693	71,872	72,052	72,232

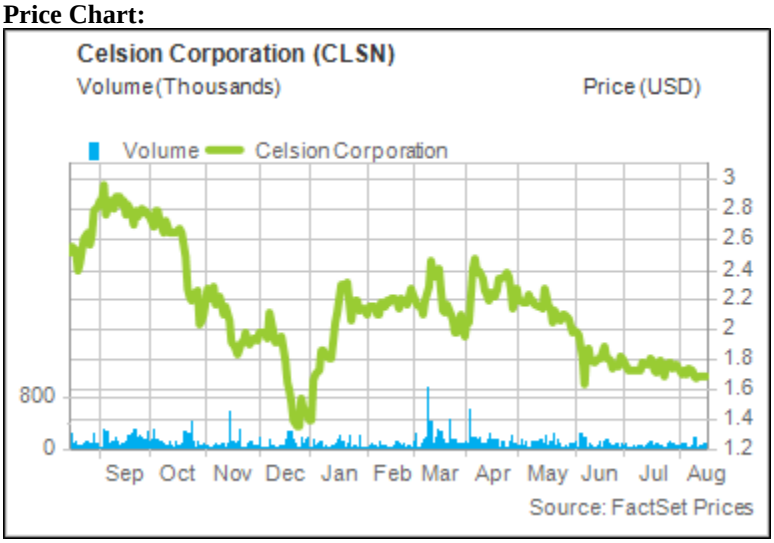
Source: Dawson James estimates

Companies mentioned in this report

Celsion Corporation

Important Disclosures:

Price Chart:



Price target and rating changes over the past three years:
Initiated – Buy – August 5, 2019 – Price Target $4.00
Update – Buy – August 14, 2019 – Price Target $4.00
Update – Buy – August 19, 2019 – Price Target $4.00

Dawson James Securities, Inc. (the "Firm") is a member of the Financial Industry Regulatory Authority ("FINRA") and the Securities Investor Protection Corporation ("SIPC").

The Firm does not make a market in the securities of the subject company(s). The Firm has NOT engaged in investment banking relationships with CLSN in the prior twelve months, as a manager or co-manager of a public offering and has NOT received compensation resulting from those relationships. The Firm may seek compensation for investment banking services in the future from the subject company(s). The Firm has received any other compensation from the subject company(s) in the last 12 months for services unrelated to managing or co-managing of a public offering.

Neither the research analyst(s) whose name appears on this report nor any member of his (their) household is an officer, director or advisory board member of these companies. The Firm and/or its directors and employees may own securities of the company(s) in this report and may increase or decrease holdings in the future. As of July 31, 2019, the Firm as a whole did not beneficially own 1% or more of any class of common equity securities of the subject company(s) of this report. The Firm, its officers, directors, analysts or employees may effect transactions in and have long or short positions in the securities (or options or warrants related to those securities) of the company(s) subject to this report. The Firm may affect transactions as principal or agent in those securities.

Analysts receive no direct compensation in connection with the Firm's investment banking business. All Firm employees, including the analyst(s) responsible for preparing this report, may be eligible to receive non-product or service specific monetary bonus compensation that is based upon various factors, including total revenues of the Firm and its affiliates as well as a portion of the proceeds from a broad pool of investment vehicles consisting of components of the compensation generated by investment banking activities, including but not limited to shares of stock and/or warrants, which may or may not include the securities referenced in this report.

Although the statements in this report have been obtained from and are based upon recognized statistical services, issuer reports or communications, or other sources that the Firm believes to be reliable, we cannot guarantee their accuracy. All opinions and estimates included in this report constitute the analyst's judgment as of the date of this report and are subject to change without notice.

Information about valuation methods and risks can be found in the "STOCK VALUATION" and "RISK ANALYSIS" sections of this report.

The securities of the company discussed in this report may be unsuitable for investors depending on their specific investment objectives and financial position. This report is offered for informational purposes only and does not constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction where such would be prohibited. Additional information is available upon request.

Rating Definitions:

1) **Buy**: The analyst believes the price of the stock will appreciate and produce a total return of at least 20% over the next 12-18 months;
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.

The following chart reflects the range of current research report ratings for all companies followed by the analysts of the Firm. The chart also reflects the research report ratings relating to those companies for which the Firm has performed investment banking services.

	Company Coverage		Investment Banking	
Ratings Distribution	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	43	84%	13	30%
Market Perform (Neutral)	8	16%	0	0%
Market Underperform (Sell)	0	0%	0	0%
Total	51	100%	13	25%

Analyst Certification:

The analyst(s) whose name appears on this research report certifies that 1) all of the views expressed in this report accurately reflect his (their) personal views about any and all of the subject securities or issuers discussed; and 2) no part of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst in this research report; and 3) all Dawson James employees, including the analyst(s) responsible for preparing this research report, may be eligible to receive non-product or service specific monetary bonus compensation that is based upon various factors, including total revenues of Dawson James and its affiliates as well as a portion of the proceeds from a broad pool of investment vehicles consisting of components of the compensation generated by investment banking activities, including but not limited to shares of stock and/or warrants, which may or may not include the securities referenced in this report.