

DELCATH SYSTEMS, INC.

Form 424B5

September 29, 2016

Table of Contents

The information in this prospectus supplement is not complete and may be changed. This prospectus supplement and the accompanying prospectus are not an offer to sell these securities, and we are not soliciting offers to buy these securities, in any jurisdiction where the offer or sale is not permitted.

**Filed Pursuant to Rule 424(b)(5)
Registration No. 333-207331**

SUBJECT TO COMPLETION, DATED SEPTEMBER 29, 2016

PROSPECTUS SUPPLEMENT

(To Prospectus dated October 20, 2015)

Shares of Common Stock

Warrants to Purchase up to

Shares of Common Stock

We are offering _____ shares of our common stock and warrants to purchase _____ shares of our common stock in this offering (and the shares of common stock issuable from time to time upon exercise of these warrants). Each share of common stock is being sold together with _____ a warrant to purchase a share of common stock at an exercise price of \$ _____ per share of common stock (as may be adjusted from time to time). Each whole warrant will entitle the holder to purchase one share of our common stock. The warrants can be exercised during the period commencing on the date of issuance and ending on _____, 2021. The shares of common stock and warrants will be issued separately. The shares of common stock, warrants and shares of common stock underlying the warrants are sometimes collectively referred to herein as the securities. See Description of Securities We Are Offering for a more complete description of the securities.

Our common stock is listed on The NASDAQ Capital Market under the symbol DCTH. The last reported sale price of our common stock on September 28, 2016 was \$3.58 per share. There is no established public trading market for the warrants and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any national securities exchange or other nationally recognized trading system.

As of August 4, 2016, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$6,830,816, based on 1,521,933 shares of outstanding common stock, of which 1,481,739 shares were held by non-affiliates, and a per share price of \$4.61 based on the closing price of our common stock on August 4, 2016. During the prior twelve-calendar-month period that ends on, and includes, the date of this prospectus supplement, and including this offering, we offered and sold securities with an aggregate market value of

approximately \$ pursuant to General Instruction I.B.6 of Form S-3.

Investing in our securities involves risks, including those described in the **Risk Factors** section beginning on page S-6 of this prospectus supplement and the section entitled **Risk Factors** beginning on page 16 of our most recent annual report on Form 10-K for the fiscal year ended December 31, 2015, which is incorporated by reference into this prospectus supplement and the accompanying prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per Share and corresponding Warrant	Total
Public offering price ⁽¹⁾	\$	\$
Underwriting discount	\$	\$
Proceeds, before expenses, to us	\$	\$

- (1) The public offering price is \$ per share of common stock and \$ per warrant to purchase shares of common stock.
- (2) Excludes the underwriter's accountable out of pocket expenses we have agreed to reimburse. The underwriter has agreed to a reduced underwriting discount with respect to certain investors. See the section entitled **Underwriting** in this prospectus supplement for additional information.
- Delivery of the securities is expected to be made on or about , 2016.

Roth Capital Partners

, 2016

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

	Page
<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	S-ii
<u>DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS</u>	S-iii
<u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u>	S-iv
<u>SUMMARY</u>	S-1
<u>RISK FACTORS</u>	S-6
<u>USE OF PROCEEDS</u>	S-7
<u>DIVIDEND POLICY</u>	S-8
<u>DILUTION</u>	S-9
<u>CAPITALIZATION</u>	S-10
<u>PRICE RANGE OF COMMON STOCK</u>	S-11
<u>DESCRIPTION OF THE SECURITIES WE ARE OFFERING</u>	S-12
<u>UNDERWRITING</u>	S-13
<u>LEGAL MATTERS</u>	S-17
<u>EXPERTS</u>	S-17

Prospectus

	Page
<u>PROSPECTUS SUMMARY</u>	1
<u>RISK FACTORS</u>	2
<u>CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS</u>	2
<u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u>	3
<u>USE OF PROCEEDS</u>	4
<u>DESCRIPTION OF DEBT SECURITIES</u>	5
<u>DESCRIPTION OF CAPITAL STOCK</u>	8
<u>DESCRIPTION OF STOCK PURCHASE CONTRACTS</u>	10
<u>DESCRIPTION OF WARRANTS</u>	11
<u>PLAN OF DISTRIBUTION</u>	13
<u>LEGAL MATTERS</u>	17
<u>EXPERTS</u>	17

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a shelf registration process. Under the shelf registration process, we may offer from time to time common stock, preferred stock, warrants, debt securities and stock purchase contracts. In the accompanying prospectus, we provide you with a general description of the securities we may offer from time to time under our shelf registration statement. In this prospectus supplement, we provide you with specific information about the securities that we are selling in this offering. Both this prospectus supplement and the accompanying prospectus include important information about us, our securities and other information you should know before investing. This prospectus supplement also adds, updates and changes information contained in the accompanying prospectus. You should read both this prospectus supplement and the accompanying prospectus as well as additional information described under **Where You Can Find Additional Information** in this prospectus supplement and the accompanying prospectus before investing in our securities.

You should rely only on the information incorporated by reference or provided in this prospectus supplement and the accompanying prospectus or any free writing prospectus prepared by or on behalf of us. Neither we nor the underwriter have authorized anyone to provide you with additional or different information. If anyone provided you with additional or different information, you should not rely on it. Neither we nor the underwriter are making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

Table of Contents

DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement contain certain forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 with respect to our business, financial condition, liquidity and results of operations. Words such as anticipates, expects, intends, plans, predicts, believes, seeks, estimates, would, will, may, can, continue, potential, should, and the negative of these terms or other comparable terms often identify forward-looking statements. Statements in this prospectus supplement, the accompanying prospectus and the other documents incorporated by reference that are not historical facts are hereby identified as

forward-looking statements for the purpose of the safe harbor provided by Section 21E of the Exchange Act and Section 27A of the Securities Act. These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the risks discussed in this prospectus supplement, the accompanying prospectus, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2015 in Item 1A under Risk Factors as well as in Item 7A Quantitative and Qualitative Disclosures About Market Risk, our Quarterly Reports on Form 10-Q for the periods ended March 31, 2016 and June 30, 2016, in Part I, Item 3 Quantitative and Qualitative Disclosures About Market Risk and the risks detailed from time to time in our future SEC reports. These forward-looking statements include, but are not limited to, statements about:

our estimates regarding sufficiency of our cash resources, anticipated capital requirements and our need for additional financing;

the commencement of future clinical trials and the results and timing of those clinical trials;

our ability to successfully commercialize CHEMOSAT/Melphalan/HDS, generate revenue and successfully obtain reimbursement for the procedure and System;

the progress and results of our research and development programs;

submission and timing of applications for regulatory approval and approval thereof;

our ability to successfully source certain components of the system and enter into supplier contracts;

our ability to successfully manufacture CHEMOSAT/Melphalan/HDS;

our ability to successfully negotiate and enter into agreements with distribution, strategic and corporate partners; and

our estimates of potential market opportunities and our ability to successfully realize these opportunities. Many of the important factors that will determine these results are beyond our ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements, which speak only as of the date of this prospectus supplement, the date of the accompanying prospectus or, in the case of documents incorporated by reference, as of the date of such documents. Except as otherwise required by law, we do not assume any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus supplement or to reflect the occurrence of unanticipated events.

S-iii

Table of Contents**WHERE YOU CAN FIND ADDITIONAL INFORMATION**

We file reports, proxy statements and other information with the SEC. You may read and copy any reports, proxy statements or other information filed by us at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including Delcath Systems, Inc. The address of the SEC website is <http://www.sec.gov>.

Important Information Incorporated By Reference

The SEC allows us to incorporate by reference information into this prospectus supplement, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus supplement contain important information that you should read about us.

The following documents are incorporated by reference into this document:

SEC Filing (File No. 001-16133)	Date of Filing(s)
Definitive Proxy Statement on Schedule 14A for our 2016 Meeting of Stockholders	June 21, 2016
Annual Report on Form 10-K for year ended December 31, 2015	March 18, 2016
Quarterly Reports on Form 10-Q for quarters ended March 31, 2016 and June 30, 2016	May 4, 2016; August 12, 2016
Current Reports on Form 8-K	February 10, 2016; April 7, 2016; June 7, 2016; June 17, 2016; July 21, 2016; August 8, 2016

We also incorporate by reference into this prospectus supplement all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial registration statement and prior to effectiveness of the registration statement, or (ii) from the date of this prospectus supplement but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus supplement and the accompanying prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus supplement, other than exhibits which are specifically incorporated by reference into such documents. Requests should be directed to Controller at Delcath Systems, Inc., 1633 Broadway, Suite 22C, New York, New York 10019 or by calling us at 212-489-2100.

Table of Contents

SUMMARY

This summary highlights selected information more fully described elsewhere in this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information you should consider before investing in our securities. You should read this prospectus supplement, the accompanying prospectus, any free writing prospectus and the documents incorporated by reference herein and therein carefully, especially the risks of investing in our securities discussed in Risk Factors below and the other risks described in the incorporated documents.

In this prospectus supplement, except as otherwise indicated, Delcath, Delcath Systems, we, our, and us refer to Delcath Systems, Inc., a Delaware corporation and its subsidiaries. Delcath is our registered United States trademark.

Overview

Delcath is a late-stage clinical development company with early commercial activity in Europe focused on cancers of the liver. We are a specialty pharmaceutical and medical device company developing our proprietary product Melphalan Hydrochloride for Injection for use with the Delcath Hepatic Delivery System (Melphalan/HDS). In Europe, our proprietary system to deliver and filter melphalan hydrochloride is marketed as a device under the trade name Delcath Hepatic CHEMOSAT® Delivery System for Melphalan (CHEMOSAT).

Our primary focus is on the execution of our clinical development program (CDP) in ocular melanoma liver metastases (mOM), intrahepatic cholangiocarcinoma (ICC), hepatocellular carcinoma (HCC or primary liver), and certain other cancers that are metastatic to the liver. We believe the disease states we are investigating represent a multi-billion dollar global market opportunity and a clear unmet medical need.

Our clinical development program for CHEMOSAT/Melphalan/HDS is comprised of: The FOCUS Clinical Trial for Patients with Hepatic Dominant Ocular Melanoma, a Global Phase 3 clinical trial that is investigating overall survival in mOM, and a Global Phase 2 clinical trial program investigating Melphalan/HDS with and without sorafenib in HCC and Melphalan/HDS in ICC. Our CDP also includes a commercial registry for CHEMOSAT non-clinical commercial cases performed in Europe and sponsorship of select investigator initiated trials (IITs) in HCC and colorectal cancer liver metastases (mCRC).

The direction and focus of our CDP for CHEMOSAT/Melphalan/HDS is informed by prior clinical development conducted between 2004 and 2010, non-clinical, commercial CHEMOSAT cases performed on approximately 150 patients in Europe, and prior regulatory experience with the FDA. Experience gained from this research, development, early European commercial and U.S. regulatory activity has led to the implementation of several safety improvements to our product and the associated medical procedure.

In the United States, Melphalan/HDS is considered a combination drug and device product, and is regulated as a drug by the FDA. The FDA has granted us six orphan drug designations, including three orphan designations for the use of the drug melphalan for the treatment of patients with mOM, HCC and ICC. Melphalan/HDS has not been approved for sale in the United States.

In Europe, the current version of our CHEMOSAT product is regulated as a Class IIb medical device and received its CE Mark in 2012. We are in an early phase of commercializing the CHEMOSAT system in select markets in the European Union where the prospect of securing adequate reimbursement for the procedure is strongest. In 2015 national reimbursement coverage for CHEMOSAT procedures was awarded in Germany, with coverage levels to be determined by German authorities in mid to late 2016.

S-1

Table of Contents

Currently there are few effective treatment options for certain cancers in the liver. Traditional treatment options include surgery, chemotherapy, liver transplant, radiation therapy, interventional radiology techniques, and isolated hepatic perfusion. We believe that CHEMOSAT/Melphalan/HDS represents a potentially important advancement in regional therapy for primary liver cancer and certain other cancers metastatic to the liver. We believe that CHEMOSAT/Melphalan/HDS is uniquely positioned to treat the entire liver either as a standalone therapy or as a complement to other therapies.

Risks of Investing

Investing in our securities involves risks. Potential investors are urged to read and consider the risk factors relating to an investment in the common stock set forth under Risk Factors in this prospectus supplement and the accompanying prospectus and those described in our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC and incorporated by reference in this prospectus supplement and the accompanying prospectus as well as other information we include or incorporate by reference in this prospectus supplement and the accompanying prospectus.

Corporate Information

We were incorporated in the State of Delaware in August 1988. Our principal executive offices are located at 1633 Broadway, Suite 22C, New York, New York 10019. Our telephone number is (212) 489-2100. Our website address is <http://www.delcath.com>. Information contained in our website is not a part of this prospectus supplement or the accompanying prospectus.

Table of Contents

THE OFFERING

Common stock offered by us	shares, plus shares of common stock underlying the warrants offered hereby.
Warrants offered by us	Warrants to purchase up to shares of common stock. The warrants can be exercised during the period commencing on the date of issuance and ending on , 2021 at an exercise price of \$ per share of common stock (as may be adjusted from time to time).
Common stock to be outstanding after this offering	shares ⁽¹⁾⁽²⁾
Use of proceeds	We intend to use the net proceeds from this offering (including any resulting from the exercise of the warrants, if any) for general corporate purposes, including, but not limited to, funding of our clinical trials, commercialization of our products, obtaining regulatory approvals, research, capital expenditures and working capital. See Use of Proceeds.
Dividend policy	We have never declared or paid any dividends to the holders of our common stock and we do not expect to pay cash dividends in the foreseeable future. We currently intend to retain any earnings for use in connection with the expansion of our business and for general corporate purposes.
NASDAQ Capital Market symbol for common stock	DCTH
Risk factors	See Risk Factors and other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, including the section entitled Risk Factors beginning on page 16 of our most recent annual report on Form 10-K for the fiscal year ended December 31, 2015, for a discussion of the factors you should carefully consider before deciding to invest in our securities.
Transfer agent and registrar	American Stock Transfer and Trust Company, LLC

(1)

The number of shares of common stock to be outstanding after this offering is based on 1,521,933 shares of common stock outstanding on September 28, 2016.

(2) The number of shares of common stock to be outstanding after this offering excludes, as of September 28, 2016:

41,356 shares issuable upon the exercise of stock options at a weighted average exercise price of \$135.77 per share;

7,427,510 shares issuable upon the exercise of outstanding warrants or options to purchase warrants at a weighted average exercise price of \$5.29 per share; and

shares issuable upon the exercise of the warrants issued hereunder.

Table of Contents**SUMMARY HISTORICAL FINANCIAL DATA**

You should read the summary historical financial data set forth below in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operation and the consolidated financial statements and the related notes included in our Annual Report on Form 10-K for the year ended December 31, 2015 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2016 and June 30, 2016, each of which is incorporated by reference herein. We derived the following summary historical financial statement of operations data and other data for each of the three years in the period ended December 31, 2015 and the summary historical balance sheet data as of December 31, 2015 from our audited financial statements. We derived the summary historical financial data as of and for the six months ended June 30, 2016 and 2015 from our unaudited financial statements. In our opinion, the unaudited financial statements have been prepared on the same basis as our audited financial statements and include all adjustments (consisting of only normal recurring adjustments) necessary for a fair presentation of the information set forth therein. The results for any interim period are not necessarily indicative of the results that may be expected for a full fiscal year.

(in thousands, except share and per share data)

	Six Months Ended June 30,		Year Ended December 31,		
	2016	2015	2015	2014	2013
STATEMENT OF OPERATIONS DATA:					
Total revenue	\$ 880	\$ 910	\$ 1,747	\$ 1,069	\$ 790
Cost of goods sold	261	270	(462)	(291)	(464)
Gross profit	619	640	1,285	778	326
General and administrative expenses	\$ 4,663	\$ 5,542	\$ 10,009	\$ 15,783	\$ 20,657
Research and development expenses	3,289	2,430	6,486	4,299	12,688
Total costs and expenses	\$ 7,952	\$ 7,972	\$ 16,495	\$ 20,082	\$ 33,345
Operating loss	(7,333)	(7,332)	(15,210)	(19,304)	(33,019)
Change in fair value of warrant liability, net	491	161	564	1,942	2,756
Other income (expense)	(1,638)	(18)	(58)	(19)	(61)
Net loss	\$ (8,480)	\$ (7,189)	\$ (14,704)	\$ (17,381)	\$ (30,324)
Common share data:					
Basic loss per share(1)	\$ (5.72)	\$ (9.96)	\$ (14.56)	\$ (29.44)	\$ (76.96)
Diluted loss per share(1)	\$ (5.72)	\$ (9.96)	\$ (14.56)	\$ (29.44)	\$ (81.60)
Weighted average number of basic common shares outstanding(1)	1,483,148	722,036	1,010,105	590,754	393,789
Weighted average number of diluted common shares outstanding(1)	1,483,148	722,036	1,010,105	590,754	410,564

S-4

Table of Contents

- (1) Reflects a one-for-sixteen (1:16) reverse stock split effected on April 8, 2014 and an additional one-for-sixteen (1:16) reverse stock split effected on July 21, 2016.

	As of June 30, 2016	As of December 31, 2015
BALANCE SHEET DATA:		
Cash and cash equivalents	\$ 7,484	\$ 12,607
Total assets	41,388	15,733
Total current liabilities	33,655	6,312
Accumulated deficit	(269,698)	(261,217)
Stockholders equity	5,430	8,601

S-5

Table of Contents

RISK FACTORS

Any investment in our securities involves a high degree of risk. You should carefully consider the risks described below and all of the information contained in this prospectus supplement and the accompanying prospectus before deciding whether to purchase our securities. In addition, you should carefully consider, among other things, the matters discussed under Risk Factors and Quantitative and Qualitative Disclosures About Market Risk in our Annual Report on Form 10-K for the year ended December 31, 2015, in our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2016 and June 30, 2016, and in other documents that we subsequently file with the Securities and Exchange Commission that are incorporated by reference. The risks and uncertainties described below and incorporated by reference are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. If any of these risks actually occur, our business, financial condition and results of operations would suffer. In that event, the trading price of our common stock and the market value of the warrants offered hereby could decline, and you may lose all or part of your investment. This prospectus supplement, the accompanying prospectus and the incorporated documents also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements. See Disclosure Regarding Forward-Looking Statements.

Risks Related to This Offering

Our management team will have broad discretion over the use of the net proceeds from this offering.

Our management will use its discretion to direct the net proceeds from this offering. We intend to use the net proceeds from the sale of the securities for general corporate purposes, including, but not limited to, funding of our clinical trials, commercialization of our products, obtaining regulatory approvals, research, capital expenditures and working capital. Our management's judgments may not result in positive returns on your investment and you will not have an opportunity to evaluate the economic, financial or other information upon which our management bases its decisions.

Investors in this offering will experience immediate and substantial dilution.

The public offering price of the securities offered pursuant to this prospectus supplement may be substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of common stock in this offering, you will incur immediate and substantial dilution in the pro forma net tangible book value per share of common stock from the price per share that you pay for the common stock. If the holders of outstanding options exercise those options at prices below the public offering price, you will incur further dilution.

The warrants are a new issue of securities with no established trading market.

The warrants are a new issue of securities with no established trading market. The warrants will not be listed on any securities exchange or quotation system. A trading market for the warrants is unlikely to develop and even if a market develops it may not provide meaningful liquidity. The absence of a trading market or liquidity for the warrants may adversely affect their value.

The exercise price and number of certain warrants will be adjusted in connection with this and possibly other offerings.

The warrants issued by us in February 2015 and June 2015 are subject to an exercise price adjustment upon certain equity issuances below \$3.90 per share (as may be further adjusted). In addition to the potential dilutive effect of these provisions, there is the potential that a large number of the shares may be sold in the public market at any given time,

which could place additional downward pressure on the trading price of our common stock. The warrants sold in the offering by this prospectus supplement also contain an adjustment of only the exercise price thereof in the event of issuances or deemed issuances of our common stock at a price below the exercise price thereof, as well as a one-time potential adjustment of the exercise price 15 trading days (3 weeks) after completion of this offering.

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds from this offering, after deducting the underwriting discount and estimated offering expenses of approximately \$, and excluding any exercise of the warrants by the holder thereof, will be approximately \$. We intend to use the net proceeds from this offering for general corporate purposes, including, but not limited to, funding of our clinical trials, commercialization of our products, obtaining regulatory approvals, research, capital expenditures and working capital.

S-7

Table of Contents

DIVIDEND POLICY

We have never declared or paid any dividends to the holders of our common stock and we do not expect to pay cash dividends in the foreseeable future. We currently intend to retain all earnings for use in connection with the expansion of our business and for general corporate purposes.

S-8

Table of Contents**DILUTION**

If you invest in our common stock, your interest will be diluted immediately to the extent of the difference between the public offering price per share of our common stock and the adjusted net tangible book value per share of our common stock after this offering.

The net tangible book value of our common stock as of June 30, 2016, was approximately \$5.4 million, or approximately \$3.57 per share. Net tangible book value per share represents the amount of our total tangible assets, excluding goodwill and intangible assets, less total liabilities divided by the total number of shares of our common stock outstanding.

Dilution per share to new investors represents the difference between the amount per share paid by purchasers for our common stock in this offering and the net tangible book value per share of our common stock immediately following the completion of this offering.

After giving effect to the sale of _____ shares and corresponding warrants offered by this prospectus supplement at an offering price of \$ _____ per share and corresponding warrant in connection with this offering and after deducting the estimated underwriting discount and our estimated offering expenses and excluding the proceeds, if any from the exercise of the warrants issued pursuant to this offering, our pro forma net tangible book value as of June 30, 2016 would have been approximately \$ _____ million or approximately \$ _____ per share. This represents an immediate increase in net tangible book value of approximately \$ _____ per share to our existing stockholders and an immediate dilution in pro forma net tangible book value of approximately \$ _____ per share to purchasers of our common stock in this offering, as illustrated by the following table:

Offering price per share and corresponding warrant	\$
Net tangible book value per share as of June 30, 2016	\$
Increase per share attributable to new investors	\$
Pro forma net tangible book value per share as of June 30, 2016 after giving effect to this offering	\$
Dilution per share to new investors	\$

The discussion of dilution, and the table quantifying it, assume no exercise of any outstanding options or warrants or other potentially dilutive securities. The exercise of potentially dilutive securities having an exercise price less than the offering price would increase the dilutive effect to new investors.

The table above excludes the following potentially dilutive securities as of June 30, 2016:

41,356 shares issuable upon the exercise of stock options at a weighted average exercise price of \$135.77 per share;

7,427,510 shares issuable upon the exercise of outstanding warrants or options to purchase warrants at a weighted average exercise price of \$5.29 per share; and

shares issuable upon exercise of the warrants issued hereunder.

To the extent that any of these options or warrants are exercised, these issuances will cause dilution per share to the investors purchasing securities in this offering.

S-9

Table of Contents**CAPITALIZATION**

The following table sets forth our cash and cash equivalents and our capitalization as of June 30, 2016 on a historical basis and as adjusted to give effect to this offering and the application of the estimated net proceeds of this offering as described under Use of Proceeds. This table should be read in conjunction with Management's Discussion and Analysis of Results of Operations and Financial Condition and the consolidated financial statements and notes thereto included in our Quarterly Report on Form 10-Q (the 10-Q) for the quarter ended June 30, 2016, which is incorporated by reference herein.

(in thousands, except share data)	As of June 30, 2016	
	Historical	As Adjusted
Cash and cash equivalents	\$ 7,484	\$
Debt ⁽¹⁾	\$ 35,000	\$
Stockholders equity:		
Preferred stock, \$0.01 par value: 10,000,000 shares authorized; no shares issued and outstanding	\$	\$
Common stock, \$0.01 par value: 500,000,000 shares authorized; 1,541,016 shares issued and 1,521,906 shares outstanding at June 30, 2016 ⁽²⁾	15	
Additional paid-in capital	275,182	
Accumulated deficit	(269,698)	
Treasury stock, at cost; 1,757 shares at June 30, 2016	(51)	
Total stockholders equity	\$ 5,430	\$
Total capitalization	\$ 40,431	\$

- (1) Reflects the face amount of our Senior Secured Convertible Notes outstanding. Differs from the amount presented on our Condensed Consolidated Balance Sheet as of June 30, 2016 contained in the 10-Q incorporated herein by reference because of the accounting treatment of the conversion feature of such notes described in Note 7 to our unaudited quarterly financial statements contained in the 10-Q.
- (2) Outstanding shares of common stock as of June 30, 2016 excludes the warrants offered hereby and the shares of our common stock issuable upon exercise of the warrants. Reflects the one-for-sixteen (1:16) reverse stock split effected on July 21, 2016

Table of Contents**PRICE RANGE OF COMMON STOCK**

Our common stock is listed and traded on The NASDAQ Capital Market under the ticker symbol DCTH. The following table sets forth the high and low last reported sales prices of our common stock for the fiscal quarters indicated as reported on The NASDAQ Capital Market:

Common Stock Price Range^(a)

	2016	
	High	Low
Quarter ended March 31, 2016	\$ 8.64	\$ 4.00
Quarter ended June 30, 2016	5.76	3.68
Quarter ended September 30, 2016 (through September 28, 2016)	4.61	3.04
	2015	
	High	Low
Quarter ended March 31, 2015	\$ 24.96	\$ 15.36
Quarter ended June 30, 2015	23.04	12.96
Quarter ended September 30, 2015	14.72	6.40
Quarter ended December 31, 2015	9.92	6.24
	2014	
	High	Low
Quarter ended March 31, 2014	\$ 99.84	\$ 15.36
Quarter ended June 30, 2014	79.36	12.96
Quarter ended September 30, 2014	42.88	6.40
Quarter ended December 31, 2014	31.36	6.24

(a) The historical stock prices reflect a one-for-sixteen (1:16) reverse stock split effected on April 8, 2014 and an additional one-for-sixteen (1:16) reverse stock split effective on July 21, 2016.

The reported last sale price of our common stock on The NASDAQ Capital Market on September 28, 2016 was \$3.58 per share. On September 28, 2016 there were 36 stockholders of record of our common stock.

Table of Contents

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

In this offering, we are offering _____ shares and warrants to purchase _____ shares of common stock at a price of \$ _____ per share of common stock. The shares of common stock and warrants are immediately separable and will be issued separately. This prospectus supplement also relates to the offering of _____ shares of our common stock underlying the warrants.

Common Stock

The material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock are described under the caption Description of Common Stock starting on page 8 of the accompanying prospectus.

Warrants

This summary of certain terms and conditions of the warrants being offered hereby is qualified in its entirety by reference to the warrants, the form of which will be included as an exhibit to a Current Report on Form 8-K that will be filed with the SEC in connection with this offering. Prospective investors should carefully review the terms and conditions set forth in the form of warrant.

The warrants can be exercised during the period commencing on the date of issuance and ending on _____, 2021. The warrants will be exercisable, at the option of each holder, upon notice of exercise to us and at an exercise price equal to \$ _____, which, except as described below, must be paid in cash at the time of exercise. The exercise price is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock. The exercise price of the warrants is subject to anti-dilution adjustments for any issuance of common stock or rights to acquire common stock for consideration per share less than the exercise price of the warrants. For purposes of these adjustments, dilutive issuances do not include securities issued under existing instruments, under board-approved equity incentive plans or in certain strategic transactions. The warrant holders must surrender payment in cash of the exercise price of the shares being acquired upon exercise of the warrants; provided, however, that if the warrant is exercised at a time when the registration statement of which this prospectus supplement is a part is not effective, then the warrants may only be exercised on a net or cashless basis. In no event is the warrant holder entitled to a cash settlement from us upon exercise. The exercise price will also be adjusted once on the 15th trading day after issuance of the warrants, to equal the greater of 75% of the volume weighted average price of our common stock on the Nasdaq Capital Market on such 15th trading day, or \$1.50 per share.

Table of Contents**UNDERWRITING**

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriter named below has agreed to purchase, and we have agreed to sell, the number of units at the public offering price, less the underwriting discount, as set forth on the cover page of this prospectus, as indicated below:

Underwriter	Number of Units
Roth Capital Partners, LLC	
Total:	

The underwriter is offering the units subject to their acceptance of the units from us and subject to prior sale. The underwriting agreement provides that the obligations of the underwriter to pay for and accept delivery of the units offered by this prospectus are subject to the approval of certain legal matters by their counsel and to other conditions. The underwriter is obligated to take and pay for all of the units offered by this prospectus if any are purchased.

The underwriter initially proposes to offer the units directly to the public at the public offering price listed on the cover page of this prospectus supplement and to dealers at the public offering price less a selling concession not in excess of \$ per unit. After the initial offering of the units, the offering price and other selling terms may from time to time be varied by the underwriter, in which case we will file a supplement to this prospectus setting forth such altered terms.

The underwriting agreement provides that the obligations of the underwriter are subject to certain conditions precedent, including the absence of any material adverse change in our business and the receipt of customary legal opinions, letters and certificates.

Discount and Expenses

The following table summarizes the public offering price, underwriting discount and proceeds before expenses to us:

	Per Unit	Total
Public offering price	\$	\$
Underwriting discount ⁽¹⁾	\$	\$
Proceeds to us (before expenses)	\$	\$

(1) We have agreed that the underwriters will accept a reduced discount with respect to certain investors, as agreed between us.

We have also agreed to reimburse the underwriter for its accountable expenses as permitted by FINRA Rule 5110(f)(2)(D) and up to \$35,000 for their legal fees and expenses incurred in connection with this offering. The expenses of the offering, not including the underwriting discount, payable by us are estimated to be \$. We have

also agreed to pay the underwriters a tail fee equal to the underwriting discount if any of the investors in this offering purchase securities directly from us for a period of six months following the termination of our engagement.

No Sales of Similar Securities

We and each of our executive officers and directors, subject to certain exceptions, have agreed with the underwriter not to dispose of or hedge any of our shares of common stock or securities convertible into or exercisable or exchangeable for common stock for 30 days after the date of this prospectus without first obtaining the written consent of Roth Capital Partners, LLC. However, we may issue securities during the 30 day lock-up period in connection with (i), the issuance of equity awards pursuant to the Company's benefit plans, qualified equity incentive plans or other compensation plans as such plans are in existence on the date hereof and described in the Prospectus or as hereafter approved by the stockholders of the Company, (ii) the issuance of common stock pursuant to the valid exercises or conversions of options, warrants or rights outstanding on the

Table of Contents

date hereof or granted after the date hereof under the plans described in clause (i) and (iii) the issuance of common stock or any securities convertible into or exercisable or exchangeable for common stock at a price in excess of the per unit offering price. The 30-day lock-up period is subject to extension such that, in the event that either (i) during the last 17 days of the lock-up period, we issue an earnings or financial results release or material news or a material event relating to us occurs, or (ii) prior to the expiration of the lock-up period, we announce that we will release earnings or financial results during the 16-day period beginning on the last day of the lock-up period, then in either case the expiration of the lock-up period will be extended until the expiration of the 18-day period beginning on the issuance of the earnings or financial results release or the occurrence of the material news or material event, as applicable, unless Roth Capital Partners, LLC waives, in writing, such an extension.

Indemnification

We and the underwriter have agreed to indemnify each other, and we have also agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act of 1933, as amended, and liabilities arising from breaches of representations and warranties contained in the underwriting agreement. We have also agreed to contribute to payments the underwriter may be required to make in respect of such liabilities.

Price Stabilization, Short Positions

In order to facilitate the offering of the units, the underwriter may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock. As an additional means of facilitating this offering, the underwriter may bid for, and purchase, shares of our common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of our common stock above independent market levels or prevent or slow a decline in the market price of our common stock. The underwriter is not required to engage in these activities, and may end any of these activities at any time.

A prospectus in electronic format may be made available on websites maintained by the underwriter. The underwriter may agree to allocate a number of units to other underwriters for sale to its online brokerage account holders. Internet distributions will be allocated by the underwriter on the same basis as other allocations.

NOTICE TO INVESTORS

United Kingdom

This document is only being distributed to and is only directed at (i) persons who are outside the United Kingdom or (ii) to investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the Order) or (iii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (e) of the Order (all such persons together being referred to as relevant persons). The shares of common stock are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such shares of common stock will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

The underwriter has represented and agreed that:

- (a) they have only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of

Section 21 of the Financial Services and Markets Act 2000 or FSMA) received by them in connection with the issue or sale of the shares of common stock in circumstances in which Section 21(1) of the FSMA does not apply to us, and

- (b) they have complied with, and will comply with all applicable provisions of FSMA with respect to anything done by them in relation to the shares of common stock in, from or otherwise involving the United Kingdom.

S-14

Table of Contents

European Economic Area

To the extent that the offer of the shares of common stock is made in any Member State of the European Economic Area that has implemented the Prospectus Directive before the date of publication of a prospectus in relation to the shares of common stock which has been approved by the competent authority in the Member State in accordance with the Prospectus Directive (or, where appropriate, published in accordance with the Prospectus Directive and notified to the competent authority in the Member State in accordance with the Prospectus Directive), the offer (including any offer pursuant to this document) is only addressed to qualified investors in that Member State within the meaning of the Prospectus Directive or has been or will be made otherwise in circumstances that do not require us to publish a prospectus pursuant to the Prospectus Directive.

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a Relevant Member State), the underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) they have not made and will not make an offer of shares of common stock to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares of common stock which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of shares of common stock to the public in that Relevant Member State at any time:

- (a) to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities,
- (b) to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than 43,000,000 and (3) an annual net turnover of more than 50,000,000, as shown in its last annual or consolidated accounts, or
- (c) in any other circumstances which do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive. For the purposes of this provision, the expression an offer of shares of common stock to the public in relation to any shares of common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares of common stock to be offered so as to enable an investor to decide to purchase or subscribe the shares of common stock, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression Prospectus Directive means Directive 2003/71/EC, (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in each Relevant Member State. The expression 2010 PD Amending Directive means Directive 2010/73/EU.

The EEA selling restriction is in addition to any other selling restrictions set out below. In relation to each Relevant Member State, each purchaser of shares of common stock (other than the underwriter) will be deemed to have represented, acknowledged and agreed that it will not make an offer of shares of common stock to the public in any Relevant Member State, except that it may, with effect from and including the date on which the Prospectus Directive is implemented in the Relevant Member State, make an offer of shares of common stock to the public in that Relevant

Member State at any time in any circumstances which do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive, provided that such purchaser agrees that it has not and will not make an offer of any shares of common stock in reliance or purported reliance on Article 3(2)(b) of the Prospectus Directive. For the purposes of this provision, the expression an offer of shares of common stock to the public in relation to any shares of common stock in any Relevant Member State has the same meaning as in the preceding paragraph.

S-15

Table of Contents

Switzerland

This document does not constitute a prospectus within the meaning of Art. 652a of the Swiss Code of Obligations. The securities may not be sold directly or indirectly in or into Switzerland except in a manner which will not result in a public offering within the meaning of the Swiss Code of Obligations. Neither this document nor any other offering materials relating to the securities may be distributed, published or otherwise made available in Switzerland except in a manner which will not constitute a public offer of the securities in Switzerland.

S-16

Table of Contents

LEGAL MATTERS

The validity of the securities offered in this offering and certain other legal matters will be passed upon for us by Morgan, Lewis & Bockins LLP, New York, New York. Certain legal matters will be passed upon for the underwriter by Ellenoff Grossman & Schole LLP, New York, New York.

EXPERTS

The audited consolidated financial statements of Delcath Systems, Inc. as of and for the year ended December 31, 2015, incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

The consolidated financial statements of Delcath Systems, Inc. at December 31, 2014 and 2013 and for each of the three years in the period ended December 31, 2014 included in Delcath Systems, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2014, have been audited by Ernst & Young LLP, predecessor independent registered public accounting firm, as set forth in their respective report thereon, included therein, and incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

Table of Contents

\$77,406,789

DELCATH SYSTEMS, INC.

Common Stock

Preferred Stock

Warrants

Debt Securities

Stock Purchase Contracts

Delcath Systems, Inc. (the Company) may offer to sell from time to time common stock, preferred stock, warrants, debt securities and stock purchase contracts. The preferred stock of the Company may be convertible into common stock or preferred stock of another series.

The Company may offer securities at an aggregate offering price of up to \$77,406,789. The common stock, preferred stock, warrants, debt securities and stock purchase contracts of the Company may be offered separately or together, in multiple series, in amounts, at prices and on terms that will be set forth in one or more prospectus supplements to this prospectus.

This prospectus describes some of the general terms that may apply to these securities and the general manner in which they may be offered. Each time the Company sells securities, a prospectus supplement will be provided that will contain specific information about the terms of any securities offered and the specific manner in which the securities will be offered. The prospectus supplement will also contain information, where appropriate, about material United States federal income tax consequences relating to, and any listing on a securities exchange of, the securities covered by the prospectus supplement. The prospectus supplement may add to, update or change the information in this prospectus. You should read this prospectus and any prospectus supplement carefully before you invest in our securities. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

The Company may offer the securities directly to investors, through agents designated from time to time by the Company, or to or through underwriters or dealers. If any agents, underwriters, or dealers are involved in the sale of any of the securities, their names, and any applicable purchase price, fee, commission or discount arrangement with, between or among them will be set forth, or will be calculable from the information set forth, in an accompanying prospectus supplement. For more detailed information, see Plan of Distribution.

Our common stock is traded on the NASDAQ Capital Market under the symbol DCTH. On October 1, 2015, the last reported sale price of our common stock on the NASDAQ Capital Market was \$0.43. The aggregate market value of the outstanding shares of our common stock held by non-affiliates was \$9,154,630, based on 21,763,864 shares of

common stock outstanding, of which 474,027 are held by affiliates, and a closing sale price on the NASDAQ Capital Market of \$0.43 on October 1, 2015. Pursuant to General Section I.B.6. of Form S-3, in no event will we sell securities in a public primary offering with a value exceeding more than one-third of our public float (the market value of our common stock held by our non-affiliates) in any 12-month period so long as our public float remains below \$75,000,000. We have sold 2,718,878 shares of our common stock and warrants to purchase 1,107,000 shares of our common stock pursuant to General Instruction I.B.6. of Form S-3 during the twelve calendar months prior to and including the date of this prospectus.

An investment in our securities involves risks. See the Risk Factors section of our latest Annual Report on Form 10-K filed with the Securities and Exchange Commission, which we refer to as the SEC, and any updates to those risk factors or new risk factors contained in our subsequent Quarterly Reports on Form 10-Q and Current Reports on Form 8-K filed with the SEC, all of which we incorporate by reference herein.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is October 20, 2015.

Table of Contents

TABLE OF CONTENTS

	Page
<u>Prospectus Summary</u>	1
<u>Risk Factors</u>	2
<u>Cautionary Statement Concerning Forward-Looking Statements</u>	2
<u>Where You Can Find Additional Information</u>	3
<u>Use of Proceeds</u>	4
<u>Description of Debt Securities</u>	5
<u>Description of Capital Stock</u>	8
<u>Description of Stock Purchase Contracts</u>	10
<u>Description of Warrants</u>	11
<u>Plan of Distribution</u>	13
<u>Legal Matters</u>	17
<u>Experts</u>	17

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission using a shelf registration process. Under this shelf process, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total aggregate dollar amount of \$77,406,789. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described under the heading **Where You Can Find Additional Information**.

You should rely only on the information contained in this prospectus and the accompanying prospectus supplement or incorporated by reference in these documents. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained or incorporated by reference in this prospectus or the accompanying prospectus supplement. If anyone provides you with different, inconsistent or unauthorized information or representations, you must not rely on them. This prospectus and the accompanying prospectus supplement are an offer to sell only the securities offered by these documents, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus or any prospectus supplement is current only as of the date on the front of those documents.

EXPLANATORY NOTE

This Registration Statement relates to securities being registered pursuant to Rule 415 of the Securities Act of 1933, as amended, which may be offered from time to time on a delayed or continuous basis by Delcath Systems, Inc. This Registration Statement contains a form of base prospectus relating to Delcath Systems, Inc. which will be used in connection with an offering of securities by Delcath Systems, Inc. The specific terms of the securities to be offered will be set forth in a prospectus supplement relating to such securities, other than with respect to the outstanding warrants issued under our registration statement on Form S-3, declared effective by the SEC on October 9, 2012 (No. 333-183675), which we refer to as the Prior Registration Statement, where the common shares issued upon due exercise of such warrants shall be registered hereunder.

Table of Contents

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus. It does not contain all the information you need to consider in making your investment decision. You should read this entire prospectus carefully, including the section entitled Risk Factors, any applicable prospectus supplement and the documents that we incorporate by reference into this prospectus and the prospectus supplement, before making an investment decision. In this prospectus, except as otherwise indicated, Delcath, Delcath Systems, we, our, and us refer to Delcath Systems, Inc., a Delaware corporation and its subsidiaries. Delcath is our registered United States trademark.

About Delcath

Delcath Systems, Inc. is a late-stage clinical development company with early commercial activity in Europe focused on cancers of the liver. We are a specialty pharmaceutical and medical device company developing our proprietary product Melphalan Hydrochloride for Injection for use with the Delcath Hepatic Delivery System (Melphalan/HDS). In Europe, our proprietary system to deliver and filter melphalan hydrochloride is marketed as a device under the trade name Delcath Hepatic CHEMOSAT® Delivery System for Melphalan (CHEMOSAT).

Our primary focus is on the execution of our clinical development program in ocular melanoma liver metastases (mOM), intrahepatic cholangiocarcinoma (ICC), hepatocellular carcinoma (HCC or primary liver), and certain other cancers that are metastatic to the liver.

We were incorporated in the State of Delaware in August 1988. Our principal executive offices are located at 1301 Avenue of the Americas, 43rd Floor, New York, New York 10019. Our telephone number is (212) 489-2100. Our website address is <http://www.delcath.com>. Information contained in our website is not a part of this prospectus.

Table of Contents

RISK FACTORS

Investing in our securities involves a high degree of risk. You should consider carefully the risk factors set forth in the documents and reports filed by us with the Securities and Exchange Commission, which we refer to as the SEC, that are incorporated by reference into this prospectus, as well as any risks described in any applicable prospectus supplement, before deciding whether to buy our securities. Additional risks not known to us or that we believe are immaterial may also significantly impair our business operations and could result in a complete loss of your investment.

CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into this prospectus contain certain forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 with respect to our business, financial condition, liquidity and results of operations. Words such as anticipates, expects, intends, plans, predicts, believes, seeks, estimates, could, would, will, may, can, and the negative of these terms or other comparable terminology often identify forward-looking statements. Statements in this prospectus and the documents incorporated by reference that are not historical facts are hereby identified as forward-looking statements for the purpose of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended. These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the risks discussed in this prospectus, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2014 in Item 1A under Risk Factors as well as in Item 7A Quantitative and Qualitative Disclosures About Market Risk and the risks detailed from time to time in our future SEC reports. These forward-looking statements include, but are not limited to, statements about:

our estimates regarding sufficiency of our cash resources, anticipated capital requirements and our need for additional financing;

the commencement of future clinical trials and the results and timing of those clinical trials;

our ability to successfully commercialize CHEMOSAT/Melphalan/HDS, generate revenue and successfully obtain reimbursement for the procedure and System;

the progress and results of our research and development programs;

submission and timing of applications for regulatory approval and approval thereof;

our ability to successfully source certain components of the system and enter into supplier contracts;

our ability to successfully manufacture CHEMOSAT/Melphalan/HDS;

our ability to successfully negotiate and enter into agreements with distribution, strategic and corporate partners; and

our estimates of potential market opportunities and our ability to successfully realize these opportunities. Many of the important factors that will determine these results are beyond our ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements, which speak only as of the date of this prospectus or, in the case of documents incorporated by reference, as of the date of such documents. Except as otherwise required by law, we do not assume any obligation to publicly update or release any revisions to these forward-looking statements to reflect events or circumstances after such applicable date or to reflect the occurrence of unanticipated events.

Table of Contents

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement we filed with the SEC. You should rely only on the information contained in this prospectus, any applicable prospectus supplement or documents incorporated by reference into this prospectus. We have not authorized anyone else to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front page of this prospectus, regardless of the time of delivery of this prospectus or any sale of securities.

We file reports, proxy statements and other information with the SEC. You may read and copy any reports, proxy statements or other information filed by us at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330. The SEC maintains a website that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC, including Delcath Systems, Inc. The address of the SEC website is <http://www.sec.gov>.

Important Information Incorporated By Reference

The SEC's rules allow us to incorporate by reference information into this prospectus. This means that we can disclose important information to you by referring you to another document. The information incorporated by reference is considered to be a part of this prospectus. This prospectus incorporates by reference the documents listed below:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2014;

our Quarterly Reports on Form 10-Q for the periods ended March 31, 2015 and June 30, 2015;

our Definitive Proxy Statement on Schedule 14A, filed on April 29, 2015 (solely to the extent incorporated by reference into Part III of our Annual Report on Form 10-K for the year ended December 31, 2014);

our Current Reports on Form 8-K, filed on February 10, 2015, February 17, 2015, March 11, 2015, March 16, 2015, March 27, 2015, May 26, 2015, June 11, 2015, July 7, 2015, August 14, 2015, August 31, 2015 and October 6, 2015; and

a description of our common stock contained in our Registration Statement on Form 8-A filed on September 22, 2000, including all amendments and reports filed for the purpose of updating such description.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial registration statement and prior to effectiveness of the registration statement, or (ii) from the date of this prospectus but prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus, other than exhibits which are specifically incorporated by reference into such documents. Requests should be directed our Secretary at Delcath Systems, Inc., 1301 Avenue of the Americas, 43rd Floor, New York, New York 10019 or by calling us at 212-489-2100.

Table of Contents

USE OF PROCEEDS

Unless we provide otherwise in a supplement to this prospectus, we intend to use the net proceeds from the sale of our securities covered by this prospectus for general corporate purposes, including, but not limited to, obtaining regulatory approvals, commercialization of our products, funding of our clinical trials, capital expenditures and working capital.

Table of Contents

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we may include in any applicable prospectus supplement and in any related free writing prospectuses, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. While the terms summarized below will apply generally to any debt securities that we may offer, we will describe the particular terms of any debt securities in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below.

We may issue debt securities from time to time in one or more distinct series. The debt securities may be senior debt securities or subordinated debt securities. Senior debt securities may be issued under a senior indenture and subordinated debt securities may be issued under a subordinated indenture. If we issue debt securities pursuant to an indenture, in the applicable prospectus supplement we will specify the trustee under such indenture. We will include in a supplement to this prospectus the specific terms of debt securities being offered, including the terms, if any, on which debt securities may be convertible into or exchangeable for common stock, preferred stock or other debt securities. The statements and descriptions in this prospectus or in any prospectus supplement regarding provisions of debt securities and any indentures are summaries of these provisions, do not purport to be complete and are subject to, and are qualified in their entirety by reference to, all of the provisions of the debt securities and the indentures (including any amendments or supplements we may enter into from time to time which are permitted under the debt securities or any indenture).

Unless otherwise specified in a prospectus supplement, the debt securities will be direct unsecured obligations of the Company. Any debt securities designated as senior will rank equally with any of our other senior and unsubordinated debt. Any debt securities designated as subordinated will be subordinate and junior in right of payment to any senior indebtedness. There may be subordinated debt securities that are senior or junior to other series of subordinated debt securities.

The applicable prospectus supplement will set forth the terms of the debt securities or any series thereof, including, if applicable:

the title of the debt securities and whether the debt securities will be senior debt securities or subordinated debt securities;

any limit upon the aggregate principal amount of the debt securities;

whether the debt securities will be issued as registered securities, bearer securities or both, and any restrictions on the exchange of one form of debt securities for another and on the offer, sale and delivery of the debt securities in either form;

the date or dates on which the principal amount of the debt securities will mature;

if the debt securities bear interest, the rate or rates at which the debt securities bear interest, or the method for determining the interest rate, and the date or dates from which interest will accrue;

if the debt securities bear interest, the dates on which interest will be payable, or the method for determining such dates, and the regular record dates for interest payments;

the place or places where the payment of principal, any premium and interest will be made, where the debt securities may be surrendered for transfer or exchange and where notices or demands to or upon us may be served;

any sinking fund or other provisions that would obligate us to redeem, repay or purchase the debt securities;

if the currency in which the debt securities will be issuable is United States dollars, the denominations in which any registered securities will be issuable, if other than denominations of \$1,000 and any integral multiple thereof, and the denominations in which any bearer securities will be issuable, if other than the denomination of \$5,000;

Table of Contents

if other than the entire principal amount, the portion of the principal amount of debt securities which will be payable upon a declaration of acceleration of the maturity of the debt securities;

the events of default and covenants relevant to the debt securities, including, the inapplicability of any event of default or covenant set forth in the indenture relating to the debt securities, or the applicability of any other events of defaults or covenants in addition to the events of default or covenants set forth in the indenture relating to the debt securities;

the name and location of the corporate trust office of the applicable trustee under the indenture for such series of notes;

if other than United States dollars, the currency in which the debt securities will be paid or denominated;

if the debt securities are to be payable, at our election or the election of a holder of the debt securities, in a currency other than that in which the debt securities are denominated or stated to be payable, the terms and conditions upon which that election may be made, and the time and manner of determining the exchange rate between the currency in which the debt securities are denominated or stated to be payable and the currency in which the debt securities are to be so payable;

the designation of the original currency determination agent, if any;

if the debt securities are issuable as indexed securities, the manner in which the amount of payments of principal, any premium and interest will be determined;

if the debt securities do not bear interest, the dates on which we will furnish to the applicable trustee the names and addresses of the holders of the debt securities;

if other than as set forth in an indenture, provisions for the satisfaction and discharge or defeasance or covenant defeasance of that indenture with respect to the debt securities issued under that indenture;

the date as of which any bearer securities and any global security will be dated if other than the date of original issuance of the first debt security of a particular series to be issued;

whether and under what circumstances we will pay additional amounts to non-United States holders in respect of any tax assessment or government charge;

whether the debt securities will be issued in whole or in part in the form of a global security or securities and, in that case, any depositary and global exchange agent for the global security or securities, whether the global form shall be permanent or temporary and, if applicable, the exchange date;

if debt securities are to be issuable initially in the form of a temporary global security, the circumstances under which the temporary global security can be exchanged for definitive debt securities and whether the definitive debt securities will be registered securities, bearer securities or will be in global form and provisions relating to the payment of interest in respect of any portion of a global security payable in respect of an interest payment date prior to the exchange date;

the extent and manner to which payment on or in respect of debt securities will be subordinated to the prior payment of our other liabilities and obligations;

whether payment of any amount due under the debt securities will be guaranteed by one or more guarantors, including one or more of our subsidiaries;

whether the debt securities will be convertible and the terms of any conversion provisions;

the forms of the debt securities; and

any other terms of the debt securities, which terms shall not be inconsistent with the requirements of the Trust Indenture Act of 1939, as amended.

Table of Contents

This prospectus is part of a registration statement that does not limit the aggregate principal amount of debt securities that we may issue and provides that we may issue debt securities from time to time in one or more series under one or more indentures, in each case with the same or various maturities, at par or at a discount. Unless indicated in a prospectus supplement, we may issue additional debt securities of a particular series without the consent of the holders of the debt securities of such series outstanding at the time of the issuance. Any such additional debt securities, together with all other outstanding debt securities of that series, will constitute a single series of debt securities under the applicable indenture.

We intend to disclose any restrictive covenants for any issuance or series of debt securities in the applicable prospectus supplement.

Table of Contents

DESCRIPTION OF CAPITAL STOCK

The following description of our common stock and preferred stock, together with the additional information incorporated by reference and in any related free writing prospectuses, summarizes the material terms and provisions of our common stock and preferred stock. The following description of our capital stock does not purport to be complete and is subject to, and qualified in its entirety by, our Amended and Restated Certificate of Incorporation, as amended, and our Amended and Restated By-Laws, which are exhibits to the registration statement of which this prospectus forms a part, and by applicable law. We refer in this section to our Amended and Restated Certificate of Incorporation, as amended, as our certificate of incorporation, and we refer to our Amended and Restated By-Laws as our by-laws. The terms of our common stock and preferred stock may also be affected by Delaware law.

Authorized Capital Stock

Our authorized capital stock consists of 170,000,000 shares of our common stock, \$0.01 par value per share, and 10,000,000 shares of undesignated preferred stock, \$0.01 par value per share. As of October 1, 2015, we had 21,763,864 shares of common stock outstanding and no shares of preferred stock outstanding. As of October 1, 2015, we had 18,059,000 shares of common stock issuable upon the exercise of outstanding warrants or options to purchase warrants at a weighted average exercise price of \$1.00 per share, 766,135 shares of common stock issuable upon the exercise of stock options at a weighted average exercise price of \$7.57 per share, and 576,086 shares of unvested restricted common stock.

Common Stock

Voting

Holders of our common stock are entitled to one vote per share on matters to be voted on by stockholders and also are entitled to receive such dividends, if any, as may be declared from time to time by our board of directors in its discretion out of funds legally available therefor. Holders of our common stock have exclusive voting rights for the election of our directors and all other matters requiring stockholder action, except with respect to amendments to our certificate of incorporation that alter or change the powers, preferences, rights or other terms of any outstanding preferred stock if the holders of such affected series of preferred stock are entitled to vote on such an amendment or filling vacancies on the board of directors.

Dividends

Holders of common stock are entitled to share ratably in any dividends declared by our board of directors, subject to any preferential dividend rights of any outstanding preferred stock. Dividends consisting of shares of common stock may be paid to holders of shares of common stock. We do not intend to pay cash dividends in the foreseeable future.

Liquidation and Dissolution

Upon our liquidation or dissolution, the holders of our common stock will be entitled to receive pro rata all assets remaining available for distribution to stockholders after payment of all liabilities and provision for the liquidation of any shares of preferred stock at the time outstanding.

Other Rights and Restrictions

Our common stock has no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such stock. Our common stock is not subject to redemption

Table of Contents

by us. Our certificate of incorporation and bylaws do not restrict the ability of a holder of common stock to transfer the stockholder's shares of common stock. If we issue shares of common stock under this prospectus, the shares will be fully paid and non-assessable and will not have, or be subject to, any preemptive or similar rights.

Listing

Our common stock is listed on The NASDAQ Capital Market under the symbol DCTH.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

Preferred Stock

Our board of directors has the authority to issue up to 10,000,000 shares of preferred stock in one or more series and to determine the rights and preferences of the shares of any such series without stockholder approval, none of which are outstanding. Our board of directors may issue preferred stock in one or more series and has the authority to fix the designation and powers, rights and preferences and the qualifications, limitations, or restrictions with respect to each class or series of such class without further vote or action by the stockholders. The ability of our board of directors to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of control of us or the removal of existing management.

Certain Anti-Takeover Provisions of Delaware Law and our Certificate of Incorporation and Bylaws

We are not subject to Section 203 of the Delaware General Corporation Law, which prohibits Delaware corporations from engaging in a wide range of specified transactions with any interested stockholder, defined to include, among others, any person other than such corporation and any of its majority owned subsidiaries who own 15% or more of any class or series of stock entitled to vote generally in the election of directors, unless, among other exceptions, the transaction is approved by (i) our board of directors prior to the date the interested stockholder obtained such status or (ii) the holders of two thirds of the outstanding shares of each class or series of stock entitled to vote generally in the election of directors, not including those shares owned by the interested stockholder.

Staggered Board of Directors

Our certificate of incorporation and by-laws provide that our board of directors be classified into three classes of directors of approximately equal size. As a result, in most circumstances, a person can gain control of our board only by successfully engaging in a proxy contest at two or more annual meetings.

Authorized But Unissued Shares

Our authorized but unissued shares of common stock and preferred stock are available for future issuances without stockholder approval and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, corporate acquisitions, employee benefit plans and stockholder rights plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Table of Contents

DESCRIPTION OF STOCK PURCHASE CONTRACTS

The following description, together with the additional information that we include in any applicable prospectus supplement and in any related free writing prospectuses, summarizes the material terms and provisions of the stock purchase contracts that we may offer under this prospectus. While the terms we have summarized below will apply generally to any stock purchase contracts that we may offer under this prospectus, we will describe the particular terms of any series of stock purchase contracts in more detail in the applicable prospectus supplement. The terms of any stock purchase contracts offered under a prospectus supplement may differ from the terms described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of stock purchase contract that describes the terms of the particular stock purchase contract we are offering before the issuance of the related stock purchase contract. The following summaries of material provisions of the stock purchase contracts are subject to, and qualified in their entirety by reference to, all the provisions of the stock purchase contracts applicable to the stock purchase contracts that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the stock purchase contracts that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete stock purchase contracts that contain the terms of the stock purchase contracts.

We may issue stock purchase contracts, including contracts obligating holders to purchase from us and us to sell to the holders, a specified number of shares of common stock or preferred stock at a future date or dates. Alternatively, the stock purchase contracts may obligate us to purchase from holders, and obligate holders to sell to us, a specified or varying number of shares of common stock or preferred stock. The consideration per share of common stock or preferred stock may be fixed at the time the stock purchase contracts are issued or may be determined by a specific reference to a formula set forth in the stock purchase contracts. The stock purchase contracts may provide for settlement by delivery by us or on our behalf of shares of the underlying security, or they may provide for settlement by reference or linkage to the value, performance or trading price of the underlying security. The stock purchase contracts may require us to make periodic payments to the holders of the certain of our securities or vice versa, and such payments may be unsecured or prefunded on some basis and may be paid on a current or on a deferred basis. The stock purchase contracts may require holders to secure their obligations thereunder in a specified manner and may provide for the prepayment of all or part of the consideration payable by holders in connection with the purchase of the underlying security or other property pursuant to the stock purchase contracts.

The securities related to the stock purchase contracts may be pledged to a collateral agent for our benefit pursuant to a pledge agreement to secure the obligations of holders of stock purchase contracts to purchase the underlying security or property under the related stock purchase contracts. The rights of holders of stock purchase contracts to the related pledged securities will be subject to our security interest therein created by the pledge agreement. No holder of stock purchase contracts will be permitted to withdraw the pledged securities related to such stock purchase contracts from the pledge arrangement.

Table of Contents

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplement, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The terms of any warrants offered under a prospectus supplement may differ from the terms described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, including a form of warrant certificate, that describes the terms of the particular warrants we are offering before the issuance of the related warrants. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General

We may issue warrants for the purchase of common stock or preferred stock in one or more series. We may issue warrants independently or together with common stock and preferred stock, and the warrants may be attached to or separate from these securities.

We may evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. We will indicate the name and address and other information regarding the warrant agent in the applicable prospectus supplement relating to a particular warrants.

If we decide to issue warrants pursuant to this prospectus, we will specify in a prospectus supplement the terms of the warrants, including, if applicable, the following:

the offering price and aggregate number of warrants offered;

the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;

the date on and after which the warrants and the related securities will be separately transferable;

the number of shares of stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;

the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;

the terms of any rights to redeem or call the warrants;

any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;

the manner in which the warrant agreement and warrants may be modified;

the dates on which the right to exercise the warrants will commence and expire;

a discussion of any material U.S. federal income tax considerations of holding or exercising the warrants;

Table of Contents

the terms of the securities issuable upon exercise of the warrants; and

any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants may have no rights of holders of the securities purchasable upon such exercise, including, in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase shares of our stock at the exercise price that we describe in the applicable prospectus supplement. Holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. If we so indicate in the applicable prospectus supplement, the warrants may also provide that they may be exercised on a cashless or net basis. We will set forth on the reverse side of the warrant certificate, if applicable, and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to us or a warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at our offices, the corporate trust office of a warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the common stock or preferred stock purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender shares of common stock or preferred stock as all or part of the exercise price for warrants.

Enforceability of Rights by Holders of Warrants

Any warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

Table of Contents

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus from time to time in one or more transactions, including without limitation:

directly to one or more purchasers;

through agents;

to or through underwriters, brokers or dealers;

through a combination of any of these methods.

A distribution of the securities offered by this prospectus may also be effected through the issuance of derivative securities, including without limitation, warrants, subscriptions, exchangeable securities, forward delivery contracts and the writing of options.

In addition, the manner in which we may sell some or all of the securities covered by this prospectus includes, without limitation, through:

a block trade in which a broker-dealer will attempt to sell as agent, but may position or resell a portion of the block, as principal, in order to facilitate the transaction;

purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account;

ordinary brokerage transactions and transactions in which a broker solicits purchasers;

through sales at the market to or through market makers; or

privately negotiated transactions.

We may also enter into hedging transactions. For example, we may:

enter into transactions with a broker-dealer or affiliate thereof in connection with which such broker-dealer or affiliate will engage in short sales of the common stock pursuant to this prospectus, in which case such broker-dealer or affiliate may use shares of common stock received from us to close out its short positions;

sell securities short and redeliver such shares to close out our short positions;

enter into option or other types of transactions that require us to deliver common stock to a broker-dealer or an affiliate thereof, who will then resell or transfer the common stock under this prospectus; or

loan or pledge the common stock to a broker-dealer or an affiliate thereof, who may sell the loaned shares or, in an event of default in the case of a pledge, sell the pledged shares pursuant to this prospectus.

In addition, we may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement or pricing supplement, as the case may be. If so, the third party may use securities borrowed from us or others to settle such sales and may use securities received from us to close out any related short positions. We may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement or pricing supplement, as the case may be.

Table of Contents

A prospectus supplement with respect to each offering of securities will state the terms of the offering of the securities, including:

the name or names of any underwriters or agents and the amounts of securities underwritten or purchased by each of them, if any;

the public offering price or purchase price of the securities and the net proceeds to be received by us from the sale;

any delayed delivery arrangements;

any underwriting discounts or agency fees and other items constituting underwriters or agents compensation;

any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchange or markets on which the securities may be listed.

The offer and sale of the securities described in this prospectus by us, the underwriters or the third parties described above may be effected from time to time in one or more transactions, including privately negotiated transactions, either:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to the prevailing market prices; or

at varying prices determined at the time of sale or at negotiated prices.

Sales of common stock may be made on the Nasdaq Capital Market or any other national securities exchange or U.S. inter-dealer system of a registered national securities association on which our common shares may be listed or quoted at the time of sale.

General

Any public offering price and any discounts, commissions, concessions or other items constituting compensation allowed or reallocated or paid to underwriters, dealers, agents or remarketing firms may be changed from time to time. Underwriters, dealers, agents and remarketing firms that participate in the distribution of the offered securities may be

underwriters as defined in the Securities Act. Any discounts or commissions they receive from us and any profits they receive on the resale of the offered securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify any underwriters, agents or dealers and describe their commissions, fees or discounts in the applicable prospectus supplement or pricing supplement, as the case may be.

Underwriters and Agents

If underwriters are used in a sale, they will acquire the offered securities for their own account. The underwriters may resell the offered securities in one or more transactions, including negotiated transactions. These sales may be made at a fixed public offering price or prices, which may be changed, at market prices prevailing at the time of the sale, at prices related to such prevailing market price or at negotiated prices. We may offer the securities to the public through an underwriting syndicate or through a single underwriter. The underwriters in any particular offering will be mentioned in the applicable prospectus supplement or pricing supplement, as the case may be.

Unless otherwise specified in connection with any particular offering of securities, the obligations of the underwriters to purchase the offered securities will be subject to certain conditions contained in an underwriting

Table of Contents

agreement that we will enter into with the underwriters at the time of the sale to them. The underwriters will be obligated to purchase all of the securities of the series offered if any of the securities are purchased, unless otherwise specified in connection with any particular offering of securities. Any initial offering price and any discounts or concessions allowed, reallocated or paid to dealers may be changed from time to time.

We may designate agents to sell the offered securities. Unless otherwise specified in connection with any particular offering of securities, the agents will agree to use their best efforts to solicit purchases for the period of their appointment. We may also sell the offered securities to one or more remarketing firms, acting as principals for their own accounts or as agents for us. These firms will remarket the offered securities upon purchasing them in accordance with a redemption or repayment pursuant to the terms of the offered securities. A prospectus supplement or pricing supplement, as the case may be, will identify any remarketing firm and will describe the terms of its agreement, if any, with us and its compensation.

In connection with offerings made through underwriters or agents, we may enter into agreements with such underwriters or agents pursuant to which we receive our outstanding securities in consideration for the securities being offered to the public for cash. In connection with these arrangements, the underwriters or agents may also sell securities covered by this prospectus to hedge their positions in these outstanding securities, including in short sale transactions. If so, the underwriters or agents may use the securities received from us under these arrangements to close out any related open borrowings of securities.

Dealers

We may sell the offered securities to dealers as principals. We may negotiate and pay dealers' commissions, discounts or concessions for their services. The dealer may then resell such securities to the public either at varying prices to be determined by the dealer or at a fixed offering price agreed to with us at the time of resale. Dealers engaged by us may allow other dealers to participate in resales.

Direct Sales

We may choose to sell the offered securities directly. In this case, no underwriters or agents would be involved.

Institutional Purchasers

We may authorize agents, dealers or underwriters to solicit certain institutional investors to purchase offered securities on a delayed delivery basis pursuant to delayed delivery contracts providing for payment and delivery on a specified future date. The applicable prospectus supplement or pricing supplement, as the case may be, will provide the details of any such arrangement, including the offering price and commissions payable on the solicitations.

We will enter into such delayed contracts only with institutional purchasers that we approve. These institutions may include commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions.

Indemnification; Other Relationships

We may have agreements with agents, underwriters, dealers and remarketing firms to indemnify them against certain civil liabilities, including liabilities under the Securities Act. Agents, underwriters, dealers and remarketing firms, and their affiliates, may engage in transactions with, or perform services for, us in the ordinary course of business. This includes commercial banking and investment banking transactions.

Market-Making, Stabilization and Other Transactions

There is currently no market for any of the offered securities, other than the common stock which is listed on the NASDAQ Capital Market. If the offered securities are traded after their initial issuance, they may trade at

Table of Contents

a discount from their initial offering price, depending upon prevailing interest rates, the market for similar securities and other factors. While it is possible that an underwriter could inform us that it intends to make a market in the offered securities, such underwriter would not be obligated to do so, and any such market-making could be discontinued at any time without notice. Therefore, no assurance can be given as to whether an active trading market will develop for the offered securities. We have no current plans for listing of the debt securities, preferred stock or warrants on any securities exchange or on the National Association of Securities Dealers, Inc. automated quotation system; any such listing with respect to any particular debt securities, preferred stock or warrants will be described in the applicable prospectus supplement or pricing supplement, as the case may be.

In connection with any offering of common stock, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include short sales, syndicate covering transactions and stabilizing transactions. Short sales involve syndicate sales of common stock in excess of the number of shares to be purchased by the underwriters in the offering, which creates a syndicate short position. Covered short sales are sales of shares made in an amount up to the number of shares represented by the underwriters over-allotment option. In determining the source of shares to close out the covered syndicate short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option. Transactions to close out the covered syndicate short involve either purchases of the common stock in the open market after the distribution has been completed or the exercise of the over-allotment option. The underwriters may also make naked short sales of shares in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing shares of common stock in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of bids for or purchases of shares in the open market while the offering is in progress for the purpose of pegging, fixing or maintaining the price of the securities.

In connection with any offering, the underwriters may also engage in penalty bids. Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

Table of Contents

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, Morgan, Lewis & Bockius LLP, New York, New York will provide opinions regarding the authorization and validity of the securities. Morgan, Lewis & Bockius LLP may also provide opinions regarding certain other matters. Any underwriters will also be advised about legal matters by their own counsel, which will be named in the prospectus supplement.

EXPERTS

The consolidated financial statements of Delcath Systems, Inc. at December 31, 2014 and 2013 and for each of the three years in the period ended December 31, 2014 included in Delcath Systems, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2014, have been audited by Ernst & Young LLP, predecessor independent registered public accounting firm, as set forth in their respective report thereon, included therein, and incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

Table of Contents

Shares of Common Stock

Warrants to Purchase up to Shares of Common Stock

PROSPECTUS SUPPLEMENT

Roth Capital Partners

, 2016