

# Diffusio<sub>2</sub>n

Pharmaceuticals Inc.  
**Diffusion Pharmaceuticals Inc.**

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**Common Stock**  
**Up to 12,262,447 Shares of Common Stock**  
**Offered by the Selling Stockholders**

This prospectus relates to the resale or other disposition from time to time by the selling stockholders identified herein (including, except as the context may otherwise require, their donees, pledgees, transferees or other successors-in-interest, the "Selling Stockholders"), of, subject to adjustment, up to 12,262,447 shares of the common stock, \$0.001 par value per share (the "Common Stock"), of Diffusion Pharmaceuticals Inc. (the "Company"). Of these shares, (a) 594,026 are shares (the "Dividend Shares") issuable as payment of dividends accruing from October 1, 2017 through January 22, 2018 with respect to the Company's previously outstanding shares of Series A convertible preferred stock, \$0.001 par value per share (the "Series A Preferred Stock"), and (b) 11,668,421 are shares (the "Make-Whole Shares") issuable pursuant to Section 4(g) of the the Certificate of Designation of Preferences, Rights and Limitations of the Series A Convertible Preferred Stock of Diffusion Pharmaceuticals Inc. (the "Certificate of Designation"), in each case, as a result of the Mandatory Conversion (as defined herein). The Selling Stockholders acquired rights to receive all of the securities covered by this prospectus in connection with a private placement transaction in which we sold the Series A Preferred Stock and accompanying warrants to purchase Common Stock (the "Warrants") to accredited investors in closings conducted on March 14, 2017 and March 31, 2017 (or, as applicable, a subsequent donation, pledge or transfer thereof). We are registering the resale or other disposition of the shares of Common Stock to satisfy registration rights we have granted to the Selling Stockholders.

Our registration of the shares of Common Stock covered by this prospectus does not mean that the Selling Stockholders will offer or sell any of the shares. The Selling Stockholders (including their donees, pledgees, transferees or other successors-in-interest) may, from time to time, resell or otherwise dispose of any or all of the shares of Common Stock described in this prospectus on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices, and may be to or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions. The Selling Stockholders will pay all underwriting discounts, commissions and any similar expenses it incurs, if any, in connection with the sale of the shares of Common Stock, and any related legal expenses incurred by it. We have agreed to pay certain expenses in connection with this registration statement and to indemnify the Selling Stockholders against certain liabilities. None of our shares of Common Stock may be sold without delivery of the applicable prospectus supplement describing the method and terms of the offering of the Common Stock. See "Plan of Distribution" beginning on page 22 for more information regarding the manners in which Selling Stockholders may sell or dispose of the securities registered hereby.

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We are not selling any shares of Common Stock under this prospectus and will not receive any of the proceeds from the sale of shares of Common Stock by the Selling Stockholders. To the extent Warrants are exercised for cash, if at all, we will receive the exercise price thereof.

You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus carefully before you invest.

Our Common Stock is traded on the NASDAQ Capital Market under the symbol "DFFN." On February 13, 2018, the last reported sale price of our Common Stock was \$0.66 per share.

**Investing in our Common Stock involves significant risks. See "Risk Factors" on page 7 of this prospectus, in our most recent Annual Report on Form 10-K, any of our other filings with the Securities and Exchange Commission and in any applicable prospectus supplement. You should read this prospectus, any accompanying prospectus supplement, and the documents incorporated by reference herein and therein carefully before you make your investment decision.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Common Stock being offered hereby or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.**

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This prospectus is dated February 14, 2018

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## TABLE OF CONTENTS

	<b>Page</b>
ABOUT THIS PROSPECTUS	1
PROSPECTUS SUMMARY	2
THE OFFERING	4
RISK FACTORS	5
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	6
USE OF PROCEEDS	7
THE SELLING STOCKHOLDERS	8
PLAN OF DISTRIBUTION	12
WHERE YOU CAN FIND MORE INFORMATION	15
LEGAL MATTERS	17
EXPERTS	17
PART II INFORMATION NOT REQUIRED IN PROSPECTUS	18

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the U.S. Securities and Exchange Commission, or the Commission, using a “shelf” registration process. Under this process, the Selling Stockholders may from time to time, in one or more offerings, sell the Common Stock described in this prospectus.

You should rely only on the information provided in this prospectus, the related prospectus supplement, including any information incorporated by reference, and any pricing supplement. No one is authorized to provide you with information different from that which is contained, or deemed to be contained, in the prospectus, the related prospectus supplement and any pricing supplement. The Selling Stockholders are not making offers to sell Common Stock in any jurisdiction in which an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should not assume that the information in this prospectus, any prospectus supplement or any document incorporated by reference is accurate as of any date other than the date of the document in which the information is contained or other date referred to in that document, regardless of the time of sale or issuance of the Common Stock.

This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the Common Stock, you should refer to the registration statement including the exhibits. This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “Where You Can Find Additional Information.” We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus were made solely for the benefit of the parties to such agreement, including in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Unless otherwise specified or unless the context requires otherwise, all references in this prospectus to “Diffusion,” the “Company,” “we,” “us,” “our” or similar references mean Diffusion Pharmaceuticals Inc. and its subsidiaries on a consolidated basis.

We have registered trademarks for Diffusion and RestorGenex. All other trade names, trademarks and service marks appearing in this prospectus are the property of their respective owners. Use or display by us of other parties’ trademarks, trade dress or products is not intended to and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owner.

## PROSPECTUS SUMMARY

*The following is a summary of what we believe to be the most important aspects of our business and the offering of our common stock under this prospectus. This summary does not contain all of the information that should be considered before investing in our common stock. Investors should read the entire prospectus carefully, including the risks related to our business and purchasing our common stock discussed under “Risk Factors” beginning on page 7 of this prospectus, “Special Notes Regarding Forward Looking Statements” and our financial statements and the notes to those financial statements incorporated by reference in this prospectus.*

### Diffusion Pharmaceuticals Inc.

#### Business Overview

We are a clinical stage biotechnology company focused on extending the life expectancy of cancer patients by improving the effectiveness of current standard-of-care treatments, including radiation therapy and chemotherapy. We are developing our lead product candidate, transcrocetinate sodium, also known as trans sodium crocetininate (“TSC”), for use in the many cancer types in which tumor oxygen deprivation (“hypoxia”) is known to diminish the effectiveness of current treatments. TSC is designed to target the cancer’s hypoxic micro-environment, re-oxygenate treatment-resistant tissue and make the cancer cells more susceptible to the therapeutic effects of standard-of-care radiation therapy and chemotherapy.

Our lead development programs target TSC against cancers known to be inherently treatment-resistant, with a focus on brain cancers. A Phase 1/2 clinical program, completed in the fourth quarter of 2015, evaluated 59 patients with newly diagnosed glioblastoma multiforme (“GBM”), a particularly deadly form of primary brain cancer. This open label, historically controlled study demonstrated a favorable safety and efficacy profile for TSC combined with standard of care, including a 36% improvement in overall survival over the control group at two years. A strong efficacy signal was seen in the inoperable patients, where survival of TSC-treated patients at two years was increased by almost four-fold over the controls. The U.S. Food and Drug Administration, or FDA, has provided Diffusion with final protocol guidance for a Phase 3 trial of TSC in this newly diagnosed inoperable GBM patient population. The Company has responded to all outstanding points raised by the FDA and recently announced the trial has opened for enrollment and dosed its first patient under the protocol permitted by the FDA. The trial will enroll 236 patients in total, 118 in each arm. Due to its novel mechanism of action, TSC has safely re-oxygenated a range of tumor types in our preclinical and clinical studies. Diffusion believes its therapeutic potential is not limited to one specific tumor type, thereby making it potentially useful to improve standard-of-care treatments of other life-threatening cancers. Given TSC's safety profile and animal data, we can, with appropriate funding, move directly into Phase 2 studies in other cancers. We also believe that TSC has potential application in other indications involving hypoxia, such as neurodegenerative diseases and emergency medicine. For example, a stroke program is now under discussion with doctors from UCLA and the University of Virginia, with whom we have established a joint team dedicated to developing a program to test TSC in the treatment of stroke, with an in-ambulance trial of TSC in stroke under consideration. Planning for such a trial is on-going.

In addition to the TSC programs, we are exploring alternatives regarding how best to capitalize upon our product candidate RES-529, which may include possible out-licensing and other options. RES-529 is a novel PI3K/Akt/mTOR pathway inhibitor which has completed two Phase 1 clinical trials for age-related macular degeneration and has been studied preclinically in oncology, specifically GBM. RES-529 has shown activity in both in vitro and in vivo glioblastoma animal models and has been demonstrated to be orally bioavailable and can cross the blood-brain barrier.

## Corporate Information

We are a Delaware corporation. We maintain our principal executive offices at 1317 Carlton Avenue, Suite 200, Charlottesville, VA 22902. Our telephone number there is (434) 220-0718. The address of our website is [www.diffusionpharma.com](http://www.diffusionpharma.com). The information set forth on, or connected to, our website is expressly not incorporated by reference into, and does not constitute a part of, this prospectus.

### Series A Preferred Stock, January Offering and Mandatory Conversion

#### *Series A Preferred Stock*

In March 2017, we conducted a private placement (the "Private Placement"), pursuant to which we issued 12,376,329 shares of Series A Preferred Stock, each convertible into one share of Common Stock, and 5-year warrants to purchase 12,376,329 shares of Common Stock at an exercise price equal to \$2.22 per share (the "Investor Warrants"). The aggregate gross proceeds from the Private Placement were \$25.0 million, prior to deducting placement agent fees and expenses payable by us. The securities were issued to accredited investors in reliance upon an exemption pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"), and the rules and regulations promulgated thereunder.

Pursuant to the Certificate of Designation, among other things, (i) the holders of Series A Preferred Stock were entitled to an 8.0% cumulative preferred dividend payable semi-annually on each April 1 and October 1 in cash or shares of Common Stock (at the discretion of our Board of Directors), (ii) each share of Series A Preferred Stock was convertible into one share of Common Stock (x) at any time at the discretion of the holder and (y) mandatorily upon, among other things, the Company's receipt of aggregate gross proceeds of at least \$10 million in any financing (a "Financing Mandatory Conversion Trigger") and (iii) in the event we, during the three years immediately following March 14, 2017 and subject to certain exceptions, issued in any offering at least \$10 million of Common Stock or securities convertible into or exercisable for Common Stock at a per share price less than \$2.02, we would be required to issue to the holders of Series A Preferred Stock a number of shares of Common Stock equal to the additional number of shares of Common Stock that such shares of Series A Preferred Stock would be convertible into if the conversion price of the Series A Preferred Stock under the Certificate of Designation was equal to 105% of the Make-Whole Price (the "Make-Whole Adjustment"). For a full description of the preferences, rights and limitations of the Series A Preferred Stock, see the Certificate of Designation, which is filed as Exhibit 3.3 hereto and incorporated herein by reference.

#### *January Offering and Mandatory Conversion*

As previously announced, on January 22, 2018, we closed an underwritten public offering (the "January Offering") of 15,000,000 shares of Common Stock and warrants to purchase 15,000,000 shares of Common Stock. The shares of Common Stock and warrants were sold at a combined public offering price of \$0.80 per share and warrant for total gross proceeds of approximately \$12 million. Accordingly, because we received more than \$10 million in aggregate gross proceeds from the January Offering, the January Offering constituted a Financing Mandatory Conversion Trigger and, substantially concurrently with the completion of the January Offering, all outstanding shares of Series A Preferred Stock mandatorily converted into an equivalent number of shares of Common Stock. Further, in accordance with the Certificate of Designation, we are obligated to issue to the holders of Series A Preferred Stock as of the date of the Financing Mandatory Conversion Trigger an aggregate of 11,668,421 Make-Whole Shares pursuant to the Make-Whole Adjustment and an aggregate of 593,933 Dividend Shares in respect of accrued but unpaid dividends accruing from October 1, 2017 (the last regular dividend payment date under the Certificate of Designation) and the date of the Financing Mandatory Conversion Trigger. The Dividend Shares also include 93 shares of Common Stock issuable in respect of accrued but unpaid dividends on shares of Series A Preferred Stock converted into Common stock voluntarily by the holder prior to the closing of the January Offering.

As a result of the January Offering and the resulting mandatory conversion of the Series A Preferred Stock, no shares of Series A Preferred Stock remain outstanding as of the date of this registration statement.

## THE OFFERING

Selling Stockholders	Accredited investors who purchased shares of Series A Preferred Stock in the Private Placement conducted in March 2017, the placement agent for the Private Placement, Maxim, and its designees, and their respective donees, pledges, transferees and other successors-in-interest.
Common Stock offered by the Selling Stockholders	Up to 12,262,447 shares of Common Stock, which includes (a) 11,668,421 Make-Whole Shares and (b) 594,026 Dividend Shares.
Use of proceeds	We are not selling any shares of Common Stock under this prospectus and will not receive any of the proceeds from the sale of shares of Common Stock by the Selling Stockholders.
Risk factors	Investing in our Common Stock involves a high degree of risk. See “Risk Factors” beginning on page 7 of this prospectus, and any other risk factors described in the documents incorporated by reference in this prospectus or in any accompanying prospectus supplement, for a discussion of factors that you should carefully consider before deciding to invest in our Common Stock.
NASDAQ Capital Market symbol	DDFN

## **RISK FACTORS**

Investing in our Common Stock involves a high degree of risk. Prior to making any decision to invest in our securities, you should carefully consider the information contained or incorporated by reference in this prospectus or in any accompanying prospectus supplement, including, without limitation, the risks described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017, which are incorporated herein by reference, the risk factors described under the caption “Risk Factors” in any applicable prospectus supplement and any risk factors set forth in our other filings with the Commission, pursuant to Sections 13(a), 13(c), 14, or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, before making an investment decision. The occurrence of any of these risks might cause you to lose all or a part of your investment in the offered securities. See “Where You Can Find More Information.”



## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement and the documents incorporated by reference herein contain forward-looking statements within the meaning of Section 21E of the Exchange Act and Section 27A of the Securities Act, and are subject to the safe harbor created by those sections. We have identified some of these forward-looking statements with words like “believe,” “may,” “could,” “would,” “might,” “possible,” “potential,” “will,” “should,” “expect,” “intend,” “plan,” “predict,” “anticipate,” “estimate” and “continue”, the negative of these words, other words and terms of similar meaning and the use of future dates. Forward-looking statements involve risks and uncertainties. These uncertainties include factors that affect all businesses as well as matters specific to us. Forward-looking statements by their nature address matters that are, to different degrees, uncertain. Uncertainties and risks may cause our actual results to be materially different than those expressed in or implied by our forward-looking statements. For us, particular uncertainties and risks include, among others, our history of operating losses and negative cash flow, uncertainties regarding clinical testing, the difficulty of developing pharmaceutical products, obtaining regulatory and other approvals and achieving market acceptance and other risks and uncertainties described in our filings with the Commission, including:

- our ability to obtain additional financing, including the overhang and restrictive provisions of the Series A convertible preferred stock and related warrants;
- our estimates regarding expenses, future revenues, capital requirements and needs for additional financing;
- our ability to continue as a going concern;
- obtaining and maintaining intellectual property protection for our product candidates and our proprietary technology;
- the success and timing of our preclinical studies and clinical trials;
- the difficulties in obtaining and maintaining regulatory approval of our products and product candidates, and the labeling under any approval we may obtain;
- our failure to recruit or retain key scientific or management personnel or to retain our executive officers;
- the accuracy of our estimates of the size and characteristics of the potential markets for our product candidates and our ability to serve those markets;
- regulatory developments in the United States and foreign countries;
- our ability to operate our business without infringing the intellectual property rights of others;
- recently enacted and future legislation regarding the healthcare system;
- our ability to satisfy the continued listing requirements of the Nasdaq Capital Market or any other exchange that our securities may trade on in the future;
- our plans and ability to develop and commercialize our product candidates;
- the rate and degree of market acceptance of any of our product candidates;
- the success of competing products that are or may become available; and
- the performance of third parties, including contract research organizations and manufacturers.

All forward-looking statements in this prospectus, any applicable prospectus supplement and the documents incorporated by reference herein speak only as of the date of this prospectus or any applicable prospectus supplement and are based on our current beliefs and expectations. We undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as otherwise required by law.

## USE OF PROCEEDS

We will receive no proceeds from the sale of the Common Stock by the Selling Stockholders.

The Selling Stockholders will pay any underwriting discounts and commissions and any similar expenses they incur in disposing of the Common Stock, if any, and any related legal expenses incurred by them. We will bear all other costs, fees and expenses incurred in effecting the registration of the Common Stock covered by this prospectus, including all registration and filing fees, fees and expenses of compliance with securities or “blue sky” laws, listing application fees, printing expenses, transfer agent’s and registrar’s fees, costs of distributing prospectuses in preliminary and final form as well as any supplements thereto, and fees and disbursements of counsel for the Company and all independent certified public accountants and other persons retained by the Company.

## THE SELLING STOCKHOLDERS

This prospectus relates to the resale or other disposition from time to time by the Selling Stockholders identified herein (including their donees, pledgees, transferees or other successors-in-interest) of, subject to adjustment, up to 11,668,421 Make-Whole Shares and 594,026 Dividend Shares. In connection with the Private Placement, we entered into the Registration Rights Agreement with the investors therein. The filing of the registration statement of which this prospectus is a part is pursuant to our obligations to register the shares of Common Stock on behalf of the Selling Stockholders under the Registration Rights Agreement. All expenses incurred with the registration of the Common Stock owned by the Selling Stockholders will be borne by us. This prospectus will not cover subsequent sales of Common Stock purchased from a Selling Stockholder named in this prospectus.

We currently have no agreements, arrangements or understandings with the Selling Stockholders regarding the sale or other disposition of any of the shares. The shares of Common Stock covered hereby may be offered from time to time by the Selling Stockholders.

Furthermore, we do not know when or in what amounts the Selling Stockholders may sell or otherwise dispose of the shares covered hereby. The Selling Stockholders might not sell any or all of the shares covered by this prospectus or may sell or dispose of some or all of the shares other than pursuant to this prospectus. Because the Selling Stockholders may not sell or otherwise dispose of some or all of the shares covered by this prospectus and because there are currently no agreements, arrangements or understandings with respect to the sale or other disposition of any of the shares, we cannot estimate the number of the shares that will be held by the Selling Stockholders after completion of the offering. For purposes of the table below, we have assumed that the Selling Stockholders will have sold all of the shares covered by this prospectus upon completion of the applicable offering.

The table below presents information regarding the Selling Stockholders and the shares of our Common Stock that they may sell or otherwise dispose of from time to time under this prospectus. The percentage of beneficial ownership is based upon 14,503,976 shares of Common Stock issued and outstanding as of September 30, 2017. Beneficial ownership is determined under Section 13(d) of the Exchange Act and generally includes voting or investment power with respect to securities and includes any securities that grant the Selling Stockholders the right to acquire Common Stock within 60 days of September 30, 2017. Information in the table below is based on information provided by or on behalf of the Selling Stockholders. Since the date on which they provided us with the information below, the Selling Stockholders may have sold, transferred or otherwise disposed of some or all of the shares in transactions exempt from the registration requirements of the Securities Act.

Name of Selling Stockholders <sup>(1)</sup>	Shares of Common Stock Beneficially Owned Before this Offering <sup>(2)</sup>		Number of Shares of Common Stock Being Offered Pursuant to this Prospectus <sup>(3)</sup>	Shares of Common Stock To Be Beneficially Owned Upon Completion Of This Offering <sup>(4)</sup>	
	Number	Percentage <sup>(5)</sup>	Number	Number	Percentage <sup>(5)</sup>
ABG II - USL1 LIMITED <sup>(6)</sup>	1,860,055	3.6%	700,965	1,159,090	2.3%
ADAM LIPSON	172,094	*	73,084	99,010	*
ADAM T DROBOT LUCY S. DROBOT JT TEN	43,029	*	18,275	24,754	*
ADOLFO CARMONA DONNA CARMONA JT TEN	144,561	*	61,391	83,170	*
ADVANCED AMBULATORY ANES LLC DEFINED BEN PLAN RICHARD I STILLMAN TTEE	430,231	*	182,705	247,526	*
ALBERT GENTILE HIEDI LYN GENTILE JT TEN	68,839	*	29,235	39,604	*
ALVA TERRY STAPLES	43,370	*	18,418	24,952	*
ALYSON D. SCHLOSSER	60,237	*	25,583	34,654	*
ANDY ENTERTAINMENT LIMITED	86,050	*	36,544	49,506	*
ANGELO MOESSLANG MONIKA MOESSLANG	120,468	*	51,160	69,308	*
ANTHONY DAULERIO	86,050	*	36,544	49,506	*
ARNOLD E. SPANGLER	172,094	*	73,084	99,010	*
ARNOLD T HAGLER SEPARATE TRUST UAD 9/17/97 ARNOLD T HAGLER TTEE	43,029	*	18,275	24,754	*
BENJAMIN KING	43,030	*	18,276	24,754	*
BENJAMIN L. PADNOS	278,791	*	118,393	160,398	*
BENJAMIN R HASTY	43,030	*	18,276	24,754	*
BES INVESTMENTS, LLC	206,513	*	87,701	118,812	*
BRIAN POTIKER RECOVERABLE TRUST UAD 8/7/96 BRIAN POTIKER TTEE	86,051	*	36,545	49,506	*
BRUCE D. GOETHE LAURA K GOETHE COMM PROP WROS	48,190	*	20,466	27,724	*
BRUCE INGLIS NANCY INGLIS JTEN	43,029	*	18,275	24,754	*
BRYAN EZRALOW 1994 TRUST UTD 12/22/1994 U/A/D 12/22/94 BRYAN EZRALOW TTEE AMD 10/01/12	344,183	*	146,163	198,020	*
C. BARNES DARWIN II	154,887	*	65,777	89,110	*
CARLEEN TUFO TOD DTD 2/21/2017	43,029	*	18,275	24,754	*
CHARLES BRINKLEY	43,030	*	18,276	24,754	*
CHITAYAT HOLDINGS, LLC	172,094	*	73,084	99,010	*
CHRISTINE RENEE MONKS	34,766	*	14,766	20,000	*
CIRO GIUSEPPE RANDAZZO	86,051	*	36,545	49,506	*
CLAY STRUVE	172,094	*	73,084	99,010	*
CRAIG GEERS	60,234	*	25,580	34,654	*
DANIEL P. PETRO	43,029	*	18,275	24,754	*
DAVID ABEL	51,631	*	21,927	29,704	*
DAVID D. SHIVELY REV WEALTH PRESERVATION TRUST UAD 7/21/04					
DAVID D. SHIVELY TTEE	172,094	*	73,084	99,010	*
DAVID E SCHWARTZ	120,468	*	51,160	69,308	*



DAVID E.I. PYOTT REVOCABLE LIVING TRUST U/A/D 4/18/14 DAVID E.I PYOTT TTEE	860,453	1.7%	365,403	495050	1.0%
DAVID FRYDRYCH	774,408	1.5%	328,862	445546	*
DAVID G. SCHMIDT	1,118,585	2.2%	475,019	643,566	1.3%
DAVID POULAD	172,094	*	73,084	99,010	*
DAVID R VICTOR REVOCABLE TRUST UAD 3/29/00 DAVID R. VICTOR TTEE	86,050	*	36,544	49,506	*
DAVID Y NORTON	51,631	*	21,927	29704	*
DAVID YOUNG KAREN PLAISANCE JT TEN	86,050	*	36,544	49,506	*
DENNIS SHASHA	172,094	*	73,084	99010	*
DJ&J, LLC	344,183	*	146,163	198,020	*
DOMINICK J. ABEL & KATHLEEN A. MOLONEY JT.	60,237	*	25,583	34654	*
DONALD E. HINKLE	51,561	*	21,897	29,664	*
DONALD SESTERHENN	43,029	*	18,275	24,754	*
DOUGLAS J. GOLD	43,030	*	18,276	24754	*
DR. STEVE AND JAN RICHARDS REVOCABLE TRUST	86,050	*	36,544	49,506	*
E.L. II PROPERTY TRUST UAD 7/01/83 ROBERT C. KOPPLE TTEE	1,720,899	3.4%	730,799	990100	1.9%
EDGAR D JANNOTTA JR EXEMPT FAMILY TRUST U/A/D 10/02/1998 ERIKA PEARSALL TTEE	430,231	*	182,705	247,526	*
ELDAR INVESTMENTS, LLC	43,030	*	18,276	24,754	*
ELEVADO INVESTMENT COMPANY, LLC	344,183	*	146,163	198020	*
ERIC PRESCOTT CAMPBELL	77,446	*	32,890	44,556	*
ERICK RICHARDSON	258,140	*	109,624	148,516	*
ERNEST W. MOODY REVOCABLE TRUST U/A/D 01/14/09 ERNEST W. MOODY TTEE	1,204,633	2.4%	511,561	693,072	1.4%
EZ COLONY PARTNERS, LLC	344,183	*	146,163	198,020	*
EZ MM & B HOLDINGS, LLC	344,183	*	146,163	198020	*
GARY M. FERMAN	52,146	*	22,146	30000	*
GARY W. JASTER	96,376	*	40,930	55,446	*
GREENWAY CAPITAL, L.P	344,182	*	146,162	198020	*
GREGORY L. STORM	215,116	*	91,352	123764	*
HENRY HERZING REVOCABLE LIVING TRUST U/A/D 10/27/93 HENRY HERZING TRUSTEE AMD 05/22/00	722,778	1.4%	306,936	415842	*
HOWARD J. WORMAN	43,029	*	18,275	24,754	*
IRA FBO MARSHALL S. EZRALOW PERSHING LLC AS CUSTODIAN ROTH ACCOUNT	344,183	*	146,163	198020	*
IRA FBO ROBIN J. STEELE PERSHING AS CUSTODIAN ROLLOVER ACCOUNT	172,091	*	73,081	99010	*
IRA FBO STEPHEN R. MEYER PERSHING AS CUSTODIAN ROLLOVER ACCOUNT	154,887	*	65,777	89,110	*
IRA FBO STEVEN YOST PERSHING LLC AS CUSTODIAN ROTH CONVERSION ACCOUNT	128,171	*	21,897	106,274	*
IRA FBO: PETER J. SPENGLER PERSHING AS CUSTODIAN	172,094	*	73,084	99,010	*
IRA FBO: ROGER L. HAWLEY PERSHING AS CUSTODIAN	344,183	*	146,163	198,020	*
IRREVOCABLE ALOHA TRUST UAD 5/1/02 MARIANNE SCHMITT HELLAUER TTEE	344,183	*	146,163	198,020	*
IRWIN BLITT REVOCABLE TRUST UAD 1/28/78 IRWIN BLITT TTEE AMD 1/11/07	86,050	*	36,544	49,506	*
ISYMAX CORP	38,244	*	16,244	22000	*
JACK CAVIN HOLLAND 1979 TRUST U/A/D 2/14/79 JACK CAVIN HOLLAND TRUSTEE	86,051	*	36,545	49506	*
JACK R. FRANK II	43,030	*	18,276	24,754	*
JAMES A. KLUGE	43,029	*	18,275	24754	*
JAMES B. AND KAREN A. GLAVIN FAMILY TRUST U/A/D 10/30/98 JAMES B AND KAREN A GLAVIN TTEES	86,050	*	36,544	49506	*
JAMES F. WINSCHEL, JR	86,050	*	36,544	49,506	*
JAMES L. DRITZ	53,010	*	22,514	30,496	*
JAMES R. HOLLINGSHEAD AND AMITA HOLLINGSHEAD REVOCABLE LIVING TRUST 5/30/08 JAMES AND AMITA HOLLINGSHEAD TTEES	86,051	*	36,545	49506	*
JAMES W THOMAS	17,213	*	7,311	9,902	*
JASON SCHMIDT	86,050	*	36,544	49506	*
JAYANT APHALE	172,091	*	73,081	99,010	*
JEFF KURTZ	43,029	*	18,275	24754	*
JEFFREY & MARGARET PADNOS 2010 GENERATION TRUST F/B/O BENJAMIN PADNOS	86,911	*	36,911	50000	*
JEFFREY BACHA	43,022	*	18,272	24750	*
JEFFREY S. PADNOS MARGARET MAIS PADNOS JT	173,815	*	73,815	100000	*
JEFFREY WREN SHANNON WREN TENCOM	43,030	*	18,276	24,754	*
JOEL L. HOCHMAN REVOCABLE TRUST UAD 12/08/94 JOEL L. HOCHMAN TTEE	129,070	*	54,812	74258	*
JOHN FLORSHEIM	24,797	*	43	24754	*
JOHN V. WAGNER	86,050	*	36,544	49,506	*
JONATHAN GILLILAND	34,422	*	14,620	19802	*
JONATHAN PATRONIK	39,978	*	16,978	23,000	*
JOSHUA GREGG BERKOWITZ	258,138	*	109,622	148,516	*
JULI-ANN CIALONE	26,505	*	11,257	15,248	*

KAREN SHASHA	43,029	*	18,275	24754	*
KEITH GELLES	258,138	*	109,622	148,516	*
KELLER ENTERPRISES, LLC	860,453	1.7%	365,403	495050	1.0%
KENMONT CAPITAL PRIVATE EQUITY PARTNERS III	258,138	*	109,622	148516	*
KENNETH F. BUECHLER TRUST 9/24/2007 UAD 9/24/07 KENNETH F. BUECHLER TTEE	43,030	*	18,276	24,754	*
KEVIN GABRIK	34,422	*	14,620	19802	*

LAMBDA IV, LLC	430,231	*	182,705	247526	*
LESLIE RUDES GRANDCHILDREN TRUST UAD 2/27/03 LISA RUDES SANDEL TTEE	430,231	*	182,705	247526	*
LIEPMANN TRUST UAD 5/08/1984 HOLGER A LIEPMANN & LORRAINE LIEPMANN TTEES AMD 4/22/12	43,029	*	18,275	24,754	*
LIEPMANN TRUST UAD 5/8/1984 H A LIEPMANN & LJ LIEPMANN	34,422	*	14,620	19802	*
LISA RUDES GRANDCHILDREN TRUST UAD 2/13/03 LISA RUDES SANDEL TTEES	430,231	*	182,705	247526	*
LOUIS VIGDEN	172,091	*	73,081	99010	*
LUNDRING FAMILY TRUST U/A/D 2/13/02 ERIK LUNDRING AND LORI YOST LUNDRING TTEES	51,631	*	21,927	29704	*
MAI 2, LLC	602,320	1.2%	255,784	346,536	*
MARK RAVICH	43,030	*	18,276	24754	*
MARSHA K. EDERER	129,071	*	54,813	74258	*
MAYHAR EIDGAH	43,029	*	18,275	24754	*
MICHAEL COHN PAULA COHN	43,370	*	18,418	24,952	*
MONTE D. ANGLIN JANET S ANGLIN JTEN	43,029	*	18,275	24,754	*
NEIL H. WASSERMAN	51,631	*	21,927	29,704	*
OSI HOLDINGS, LLC	43,029	*	18,275	24754	*
PANELLA LIVING TRUST U/A/D 05/11/04 JOSEPH PANELLA AND PAM PANELLA TTEES	20,242	*	8,598	11644	*
PETER B. RAUENBUEHLER & MARY L. MINES LIVING TRUST U/A/D 09/26/05 PETER B. RAUENBUEHLER & MARY MINES TTEES	173,469	*	73,667	99802	*
PETER JOHN FREIX	43,030	*	18,276	24754	*
RANDE R WILLISON	43,030	*	18,276	24,754	*
RICHARD MARTIN REITER	43,029	*	18,275	24,754	*
RICHMAN TRUST DTD 6/02/1983 UAD 6/02/83 DOUGLAS RICHMAN & EVA RICHMAN TTEES AMD 1/6/14	51,631	*	21,927	29704	*
ROBERT GIESEN	17,212	*	7,310	9902	*
ROBERT N GARFF	99,161	*	42,111	57050	*
ROBIN J STEELE TRUST DTD 1/30/2015 ROBIN J. STEELE TTEE AMD 05/04/15	172,094	*	73,084	99010	*
ROBIN ROTHSTEIN JEFFREY ROTHSTEIN COMM PROP WROS	86,050	*	36,544	49506	*
RP CAPITAL, LLC	791,616	1.6%	336,170	455,446	*
RUSSELL NOWAK	86,051	*	36,545	49506	*
RUSSELL S. DRITZ	14,459	*	6,141	8,318	*
SEAN JANZER	43,029	*	18,275	24754	*
SHAMUS, LLC	461,676	*	190,529	271,147	*
SHERRY CASALI	43,030	*	18,276	24754	*
SHILOH PRODUCE, INC	332,655	*	141,267	191388	*
STANLEY M MARKS	86,050	*	36,544	49,506	*
STEPHEN J. MERINGOFF	860,453	1.7%	365,403	495050	1.0%
STEPHEN M. PAYNE	86,050	*	36,544	49,506	*
STEVE GOODMAN HELANE GOODMAN	68,839	*	29,235	39604	*
STEVEN AND KAYE YOST FAMILY TRUST U/A/D 02/07/92 AMD 6/04/97 STEVEN A. YOST AND KAYE YOST TRUSTEES	86,737	*	36,835	49902	*
STEVEN F. WHITE	45,177	*	19,187	25990	*
STEVEN H. ORAM REVOCABLE TRUST UAD 5/17/06 STEVEN H. ORAM & TERRI ORAM TTEES	86,050	*	36,544	49506	*
STEVEN K LUMINAIS ELIZABETH KINDWALL LUMINAIS JTEN	86,050	*	36,544	49,506	*
TERRENCE E. TROY	137,679	*	58,469	79,210	*
THE BAHR FAMILY LIMITED PARTNERSHIP	189,305	*	80,393	108,912	*
THE KENTOR TRUST U/A/D 9/18/02 ERIC KENTOR AND ADRIENNE KENTOR TTEES	43,029	*	18,275	24,754	*
THE NOTAS FAMILY TRUST UAD 8/13/1997 BERNARD NOTAS & EVE NOTAS TTEES	120,468	*	51,160	69308	*
THE OBERKFELL LIVING TRUST U/A/D 12/18/02 HF OBERKFELL & VA OBERKFELL TTEES AMD 06/29/10	96,376	*	40,930	55,446	*
THE R. SCOTT GREER AND MICHELLE GREER REVOCABLE TRUST U/A/D 10/01/00 R. SCOTT GREER AND MICHELLE GREER TRUSTEES	86,050	*	36,544	49,506	*
THE ROBERT L. BAHR REVOCABLE TRUST UAD 3/14/85 ROBERT BAHR TTEE	154,887	*	65,777	89,110	*
THE STANFORD BARATZ REVOCABLE TRUST U/A/D 09/07/94 STANFORD BARATZ & AMY BARATZ TTEES	34,766	*	14,766	20000	*
THOMAS L. EISENBERG	43,029	*	18,275	24754	*
THOMAS M VERTIN	86,051	*	36,545	49506	*
TIMOTHY P. HANLEY MONICA HANLEY JTWROS	172,094	*	73,084	99010	*
TOM SEGO	172,091	*	73,081	99010	*
TRUST OF DAVID BENADERET U/A/D 1/15/13 DAVID BENADERET TRUSTEE	86,050	*	36,544	49,506	*
TRUST U/W RENEE WEISS DTD 5/9/90 PETER H. WEISS TTEE	34,420	*	14,618	19,802	*
WILLIAM H. COSTIGAN	43,030	*	18,276	24,754	*
WILLIAM HUFF	85,960	*	36,504	49,456	*
WILLIAM KADI SANDRA MARIE KADI JTEN	43,030	*	18,276	24,754	*
WILLIAM KRYWICKI NANCIE KRYWICKI JTEN	86,050	*	36,544	49506	*
WILLIAM STRAWBRIDGE	24,804	*	50	24754	*
ZHE QIU	172,101	*	73,089	99,012	*





\* Less than 1%

(1) All information contained as of January 22, 2018.

(2) Includes (a) shares of our Common Stock held by the applicable Selling Stockholder, including the Make-Whole Shares and the Dividend Shares, and (b) shares of Common Stock issuable upon exercise or conversion of convertible securities that are currently exercisable or convertible or are exercisable or convertible within 60 days beneficially owned by the applicable Selling Stockholder.

(3) Consists only of the Make-Whole Shares and the Dividend Shares.

(4) For purposes of this table, the Company assumes that all of the shares covered by this prospectus will be sold by the Selling Stockholders.

(5) Based on a denominator equal to the sum of (a) 50,526,547 shares of our Common Stock outstanding on January 22, 2018 after giving effect to the January Offering and the mandatory conversion of the Series A Preferred Stock, including the issuance of the Make-Whole Shares and the Dividend Shares, and (b) the number of shares of Common Stock issuable upon exercise or conversion of convertible securities that are currently exercisable or convertible or are exercisable or convertible within 60 days of such date beneficially owned by the applicable Selling Stockholder.

(6) Includes 6,099 shares of common stock held of record by ABG II-SO Limited, an affiliate of the holder.

Each time the Selling Stockholders sell any shares of Common Stock offered by this prospectus, they are required to provide you with this prospectus and the related prospectus supplement, if any, containing specific information about the Selling Stockholders and the terms of the shares of Common Stock being offered in the manner required by the Securities Act.

No offer or sale may occur unless the registration statement that includes this prospectus has been declared effective by the Commission and remains effective at the time the Selling Stockholders offer or sell shares of Common Stock. We are required, under certain circumstances, to update, supplement or amend this prospectus to reflect material developments in our business, financial position and results of operations and may do so by an amendment to this prospectus, a prospectus supplement or a future filing with the Commission incorporated by reference in this prospectus.

This prospectus also covers any additional shares of Common Stock that become issuable in connection with the shares being registered by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration which results in an increase in the number of our outstanding shares of Common Stock.

## PLAN OF DISTRIBUTION

We are registering the shares of Common Stock issuable to the Selling Stockholders to permit the resale of these shares of Common Stock by the holders thereof from time to time after the date of this prospectus and the issuance thereof, pursuant to the provisions of the Registration Rights Agreement. As used in this prospectus, "Selling Stockholders" includes donees, pledgees, transferees or other successors-in-interest selling shares received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other permitted transfer.

We will not receive any of the proceeds from the sale by the Selling Stockholders of the shares of Common Stock. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The Selling Stockholders may sell all or a portion of the shares of Common Stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the Selling Stockholders will be responsible for underwriting discounts, commissions or any similar expenses it incurs in disposing of the Common Stock, if any, and any related legal expenses incurred by it. The shares of Common Stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. In addition, the Selling Stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the Selling Stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The Selling Stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(a)(1) under the Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the Selling Stockholders may arrange for other broker-dealers to participate in sales. If the Selling Stockholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the Selling Stockholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.01.

In connection with sales of the shares of Common Stock or otherwise, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The Selling Stockholders may also sell shares of Common Stock short and if such short sale shall take place after the date that this Registration Statement is declared effective by the Commission, the Selling Stockholders may deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The Selling Stockholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the Selling Stockholders have been advised that they may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the Commission.

The Selling Stockholders may, from time to time, pledge or grant a security interest in some or all of the securities of the Company owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of Selling Stockholders to include the pledgee, transferee or other successors in interest as Selling Stockholders under this prospectus. The Selling Stockholders also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The Selling Stockholders and any broker-dealer or agents participating in the distribution of the shares of Common Stock may be deemed to be "underwriters" within the meaning of Section 2(a)(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling Stockholders who are "underwriters" within the meaning of Section 2(a)(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

Except as set forth herein, each Selling Stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Common Stock. Upon the Company being notified in writing by a Selling Stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such Selling Stockholder and of the participating broker-dealer(s), (ii) the number of shares of Common Stock involved, (iii) the price at which such the shares of Common Stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In no event shall any broker-dealer receive fees, commissions and markups, in the aggregate, in excess of eight percent (8.0%) of any offering.

Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with. Subject to the terms of the Registration Rights Agreement, the Company has no obligation to qualify the resale of any shares in any particular state.

There can be no assurance that any Selling Stockholder will sell any or all of the shares of Common Stock registered pursuant to the shelf registration statement, of which this prospectus forms a part.

Each Selling Stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the Selling Stockholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We will pay all expenses of the registration of the shares of Common Stock pursuant to the registration rights agreement, including, without limitation, Commission filing fees and expenses of initial compliance with state securities or “blue sky” laws; *provided, however*, that each selling stockholder will pay all underwriting discounts, commissions and any similar expenses it incurs in disposing of the Common Stock, if any, and any related legal expenses incurred by it. We will indemnify the Selling Stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with the Registration Rights Agreements, or the Selling Stockholders will be entitled to contribution. We may be indemnified by the Selling Stockholders against civil liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the Selling Stockholders specifically for use in this prospectus, in accordance with the related Registration Rights Agreements or we may be entitled to contribution.

## WHERE YOU CAN FIND MORE INFORMATION

### Available Information

We file annual, quarterly and current reports, proxy statements and other information with the Commission. You may read and copy any of this information at the Commission's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the Commission at (800) SEC-0330 or (202) 942-8090 for further information on the public reference room. The Commission also maintains an Internet website that contains reports, proxy statements and other information regarding issuers, including us, who file electronically with the Commission. The address of that site is [www.sec.gov](http://www.sec.gov).

We also maintain an Internet website at [www.diffusionpharma.com](http://www.diffusionpharma.com), which can be used to access free of charge, through the investor relations section, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with or furnish it to the Commission and all such reports of ours going forward. The information set forth on, or connected to, our website is expressly not incorporated by reference into, and does not constitute a part of, this prospectus.

This prospectus is part of a registration statement on Form S-3 that we have filed with the Commission under the Securities Act, for the registration under the Securities Act of the securities offered hereby. This prospectus does not contain all the information set forth in the registration statement, parts of which are omitted in accordance with the rules and regulations of the Commission. Reference is hereby made to the registration statement which contains further information with respect to our company and our securities. Statements herein concerning the provisions of documents filed as exhibits to the registration statement are necessarily summaries of such documents, and each such statement is qualified by reference to the copy of the applicable document filed with the Commission.

### Incorporation of Documents by Reference

The Commission allows us to incorporate by reference information into this prospectus. This means we can disclose information to you by referring you to another document we filed with the Commission. We will make those documents available to you without charge upon your oral or written request. Requests for those documents should be directed to Investor Relations Department, Diffusion Pharmaceuticals Inc., 1317 Carlton Avenue, Suite 200, Charlottesville, Virginia 22902, Attention: Secretary, telephone: (434) 220-0718. This prospectus incorporates by reference the following documents (other than any portion of the respective filings furnished, rather than filed, under the applicable Commission rules) that we have filed with the Commission but have not included or delivered with this prospectus:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, as amended, filed with the Commission on March 31, 2017.
- Our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2017, June 30, 2017 and September 30, 2017, filed with the SEC on May 15, 2017, August 14, 2017 and November 13, 2017, respectively.
- Our Current Reports on Form 8-K filed with the Commission on January 9, 2017, January 26, 2017 (to the extent not furnished), March 15, 2017, April 3, 2017, April 11, 2017, May 26, 2017, June 16, 2017, July 6, 2017, November 2, 2017, November 20, 2017, December 29, 2017, January 19, 2018 and January 22, 2018.

- Our Definitive Proxy Statement on Schedule 14A filed with the Commission on May 12, 2017.
- The description of our Common Stock included in our amended registration statements on Form 8-A filed on November 8, 2016 under the Exchange Act, and any amendment or report we may file with the Commission for the purpose of updating such description.
- The information filed under the headings “Executive Compensation” and “Risk Factors” in Amendment No. 1 to our Registration Statement on Form S-1 filed with the Commission on January 16, 2018.

We also incorporate by reference into this registration statement and prospectus any future filings we will make with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering of the securities covered by this prospectus (other than current reports or portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K). This additional information is a part of this prospectus from the date of filing of those documents.

Any statements made in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or in any other subsequently filed document, which is also incorporated or deemed to be incorporated into this prospectus, modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus. The information relating to us contained in this prospectus should be read together with the information in the documents incorporated by reference.

## LEGAL MATTERS

The validity of the issuance of the Common Stock offered by this prospectus will be passed upon for us by Dechert LLP, New York, New York. Any underwriter or agent will be advised about other issues relating to any offering by its own legal counsel.

## EXPERTS

The consolidated financial statements of Diffusion Pharmaceuticals Inc. as of and for the years ended December 31, 2016 and 2015, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2016 consolidated financial statements contains an explanatory paragraph that states that the Company has suffered recurring losses from operations, has limited resources available to fund current research and development activities, and will require substantial additional financing to continue to fund its research and development activities, which raise substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of that uncertainty.

# **Diffusion<sub>2</sub>n**

**Pharmaceuticals Inc.**  
**Diffusion Pharmaceuticals Inc.**

**Common Stock**  
**Up to 12,262,447 Shares of Common Stock**  
**Offered by the Selling Stockholders**

**Prospectus**

**Dated February 14, 2018**