UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 14, 2019

SPERO THERAPEUTICS, INC.
(Exact Name of registrant as specified in its charter)

Delaware	**001-38266**	**46-4590683**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

675 Massachusetts Avenue, 14th Floor
Cambridge, Massachusetts 02139
(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: (857) 242-1600

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☒

Item 2.02. Results of Operations and Financial Condition.

On March 14, 2019, Spero Therapeutics, Inc. (the "Company") issued a press release announcing its results for the fourth quarter and full year ended December 31, 2018. A copy of the press release is furnished as Exhibit 99.1 hereto.

The information contained in this Item 2.02 and in the press release furnished as Exhibit 99.1 hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that Section or Sections 11 and 12(a)(2) of the Securities Act of 1933, as amended, or incorporated by reference in any filing with the U.S. Securities and Exchange Commission made by the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit 99.1 Press Release, dated March 14, 2019

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

SPERO THERAPEUTICS, INC.

Date: March 14, 2019

By: /s/ Joel Sendek
Joel Sendek
Chief Financial Officer and Treasurer

Exhibit 99.1

Spero Therapeutics Announces Fourth Quarter and Full Year 2018 Operating Results and Provides Pipeline Review

Anticipated 2019 Events include Enrollment in the Planned SPR994 Pivotal Phase 3 Clinical Trial and Top-Line Data from SPR720 and SPR206 Phase 1 Clinical Trials in 2H19

CAMBRIDGE, Mass., March 14, 2019 — Spero Therapeutics, Inc. (Nasdaq:SPRO), a multi-asset clinical-stage biopharmaceutical company focused on identifying, developing and commercializing treatments in high unmet need areas involving multi-drug resistant (MDR) bacterial infections and rare diseases, today announced financial results for the fourth quarter and full year ended December 31, 2018 and provided a pipeline review.

“In 2018, we made significant progress advancing our pipeline candidates, all of which are designed to address serious unmet needs of multi-drug resistant infections,” said Ankit Mahadevia, M.D., Chief Executive Officer of Spero Therapeutics. “SPR994 is now entering a single pivotal Phase 3 clinical trial required for regulatory approval in cUTI, after we successfully identified a dose based on a completed Phase 1 clinical trial of SPR994 in 2018 and filed an IND with the FDA in early 2019. Additionally, we advanced SPR720 and SPR206 into Phase 1 clinical trials based on successful preclinical testing conducted in 2018. We look forward to an eventful 2019 with enrollment into our planned SPR994 Phase 3 trial, as well as Phase 1 data from SPR720 and SPR206 clinical trials expected in the second half of 2019.”

Recent Clinical Highlights and Upcoming Milestones

SPR994:

Spero’s lead product candidate, SPR994, is designed to be the first oral carbapenem antibiotic approved for use in adults to treat MDR Gram-negative infections. In February 2019, Spero announced the FDA’s acceptance of the IND application for SPR994 in cUTI, enabling Spero to initiate U.S. enrollment in its planned global, single pivotal Phase 3 clinical trial of SPR994 in cUTI entitled ADAPT-PO. The pivotal Phase 3 clinical trial is designed as a double-blind, double-dummy trial to compare oral SPR994 with an existing standard of care intravenous (IV) antibiotic, ertapenem, in approximately 1,200 patients randomized 1:1 in each arm. Spero has begun start-up activities for the ADAPT-PO clinical trial and anticipates opening trial sites around the end of March 2019 to support study enrollment. The trial will incorporate a lead-in cohort of 70 patients with an intensive pharmacokinetics assessment to confirm the dose and exposure in the cUTI patient population. Spero expects to receive pharmacokinetic data from the lead-in cohort in the second half of 2019.

SPR720:

SPR720 is an orally administered antimicrobial agent being developed for the treatment of a rare, orphan disease, non-tuberculous mycobacterial (NTM) infections. Pre-clinical *in vitro* and *in vivo* studies have demonstrated the potency of SPR720 against a range of bacteria that cause pulmonary NTM infections, including *Mycobacterium avium* complex and *Mycobacterium abscessus*. The collective data to date suggest that SPR720 has an acceptable safety profile, encouraging target pathogen efficacy, drug distribution to key sites of infection, such as the lung, and a wide therapeutic margin. Spero initiated a SPR720 Phase 1 clinical trial in January 2019 designed as a double-blind, placebo-controlled clinical trial to assess the safety, tolerability and pharmacokinetics of SPR720 in healthy volunteers. Spero expects to receive top-line data from the Phase 1 clinical trial in the second half of 2019.

SPR206:

SPR206 is an IV-administered product candidate from Spero’s Potentiator Platform being developed as an innovative option to treat MDR Gram-negative bacterial infections. In preclinical studies, SPR206 showed

activity as a single agent against MDR and extensively drug resistant (XDR) bacterial strains, including isolates of *Pseudomonas aeruginosa*, *Acinetobacter baumannii* and carbapenem-resistant *Enterobacteriaceae*, in both *in vitro* and *in vivo* models of infection. Spero initiated a Phase 1 clinical trial of SPR206 in December 2018, designed as a double-blind, placebo-controlled, ascending dose, multi-cohort study in healthy subjects. Spero expects to receive top-line data from this trial in the second half of 2019.

Fourth Quarter and Full-year 2018 Financial Results

Spero reported a net loss for the fourth quarter and year ended December 31, 2018 of $10.6 million and $41.7 million, or $0.60 and $2.60 per common share, respectively. Net loss for the fourth quarter and year ended December 31, 2017 was $14.8 million and $46.1 million, or $1.59 and $17.82 per common share, respectively.

Grant revenue for the fourth quarter and year ended December 31, 2018 totaled $1.7 million and $4.0 million, respectively, and was comprised of reimbursement for all of the pipeline programs. Grant revenue for the year ended December 31, 2018 was $2.0 million higher than the same period of 2017 due to an increase in available awards, such as the BARDA award of up to $44.2 million announced in July 2018, as well as a greater spend on our product candidates that was reimbursable under the awarded grants.

Research and development expenses for the fourth quarter 2018 of $9.1 million were lower than $12.5 million for the same period of 2017 due to lower direct clinical trial expense in the fourth quarter 2018 and the addition of milestone payments payable in the fourth quarter 2017. Research and development expenses for the year ended December 31, 2018 were $33.9 million compared to $32.9 million for the year ended December 31, 2017, with increased expenses in 2018 versus 2017 due to greater spend on SPR994 and SPR720 program expenses partially offset by lower spend on the Potentiator Platform product candidates. The Company expects that its research and development expenses will increase throughout 2019 due to greater planned clinical spend associated with the SPR994 pivotal ADAPT-PO trial, as well as the SPR720 and SPR206 Phase 1 clinical trials, along with increased personnel spend to support such programs.

General and administrative expenses for the fourth quarter 2018 of $3.6 million were higher than $2.5 million for the same period of 2017, primarily due to increased headcount and greater costs associated with operating as a public company. General and administrative expenses for the year ended December 31, 2018 were $12.9 million compared to $10.8 million for the year ended December 31, 2017, with the increased expenses in 2018 versus 2017 primarily due to an increase in headcount partially offset by lower professional and consultant fees. The Company expects general and administrative expenses to increase in 2019 due to additional headcount and professional fees to support the advancement of its lead asset SPR994 towards regulatory approval.

As of December 31, 2018, the Company had cash and cash equivalents of $115.4 million. Spero believes that its existing cash, cash equivalents and marketable securities, together with the initial funding committed under its BARDA award, will enable funding of operating expenses and capital expenditure requirements into the second half of 2020, including through the top-line data readout of the planned pivotal ADAPT-PO clinical trial of SPR994.

Upcoming Scientific and Investor Presentations

- Corporate presentation at the Oppenheimer 29th Annual Healthcare Conference on March 20, 2019 in New York, New York
- Corporate presentation at the H. C. Wainwright Annual Global Life Sciences Conference on April 8-9, 2019 in London, England
- Multiple scientific presentations at the 29th European Congress of Clinical Microbiology and Infectious Diseases from April 13-16, 2019 in Amsterdam, Netherlands
- Corporate presentation at the 2019 Bank of America Merrill Lynch Health Care Conference from May 14-16, 2019 in Las Vegas, Nevada
- Multiple scientific presentations at American Society of Microbiology (ASM) Microbe 2019 from June 20-24, 2019 in San Francisco, California

About Spero

Spero Therapeutics, Inc. is a multi-asset, clinical-stage biopharmaceutical company focused on identifying, developing and commercializing novel treatments for multidrug-resistant (MDR) bacterial infections and rare diseases.

Spero's lead product candidate, SPR994, is designed to be the first oral carbapenem-class antibiotic for use in adults to treat MDR Gram-negative infections.

Spero is also advancing SPR720, its novel oral therapy product candidate designed for the treatment of rare, orphan disease caused by pulmonary non-tuberculous mycobacterial (NTM) infections.

Spero also has a platform technology known as its Potentiator Platform that it believes will enable it to develop drugs that will expand the spectrum and potency of existing antibiotics, including formerly inactive antibiotics, against Gram-negative bacteria. Spero's lead product candidates generated from its Potentiator Platform are two IV-administered agents, SPR741 and SPR206, designed to treat MDR Gram-negative infections in the hospital setting.

For more information, visit https://sperotherapeutics.com.

Forward Looking Statements

This press release may contain forward-looking statements. These statements include, but are not limited to, statements about Spero's expectation that positive results from a single pivotal Phase 3 clinical trial of SPR994 and ancillary supportive studies to be conducted in parallel with the planned Phase 3 trial will support the approval of SPR994; the initiation, timing, progress and results of Spero's preclinical studies and clinical trials and its research and development programs, including the anticipated timing of the opening of sites to support enrollment into the planned pivotal Phase 3 clinical trial of SPR994; statements regarding management's assessment of the results of such preclinical studies and clinical trials; the timing of clinical data, including the availability of pharmacokinetic data from the lead-in cohort in the planned Phase 3 clinical trial of SPR994 and top-line data from the Phase 1 clinical trial of SPR206 and the Phase 1 clinical trial of SPR720; and Spero's cash forecast and anticipated expenses, the sufficiency of its cash resources and the availability of additional non-dilutive funding from governmental agencies beyond any initially funded awards. In some cases, forward-looking statements can be identified by terms such as "may," "will," "should," "expect," "plan," "aim," "anticipate," "could," "intent," "target," "project," "contemplate," "believe," "estimate," "predict," "potential" or "continue" or the negative of these terms or other similar expressions. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including whether the FDA will accept a single pivotal study for approval of SPR994; whether results obtained in preclinical studies and clinical trials will

be indicative of results obtained in future clinical trials; whether Spero's product candidates will advance through the preclinical development and clinical trial process on a timely basis, or at all, taking into account the effects of possible regulatory delays, slower than anticipated patient enrollment, manufacturing challenges, clinical trial design and clinical outcomes; whether the results of such trials will warrant submission for approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies; whether Spero's cash resources will be sufficient to fund its continuing operations for the periods and/or trials anticipated; and other factors discussed in the "Risk Factors" set forth in filings that Spero periodically makes with the U.S. Securities Exchange Commission. The forward-looking statements included in this press release represent Spero's views as of the date of this press release. Spero anticipates that subsequent events and developments will cause its views to change. However, while Spero may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Spero's views as of any date subsequent to the date of this press release.

Spero Investor and Media Contact:
Sharon Klahre
Director, Investor Relations
857-242-1547
IR@sperotherapeutics.com

Spero Therapeutics, Inc.
Condensed Consolidated Statements of Operations
(unaudited, amounts in thousands, except share and per share data)

	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2018	2017	2018	2017
Grant revenue	$ 1,692	$ 993	$ 3,966	$ 1,979
Operating expenses:				
Research and development	9,127	12,503	33,885	32,869
General and administrative	3,649	2,490	12,887	10,840
Total operating expenses	12,776	14,993	46,772	43,709
Loss from operations	(11,084)	(14,000)	(42,806)	(41,730)
Other income (expense)	485	(770)	1,144	(4,367)
Net loss attributable to common stockholders of Spero Therapeutics, Inc.	$ (10,599)	$ (14,770)	$ (41,662)	$ (46,097)
Net loss per share attributable to common stockholders per share, basic and diluted	$ (0.60)	$ (1.59)	$ (2.60)	$ (17.82)
Weighted average shares outstanding, basic and diluted:	17,736,996	9,273,783	16,001,832	2,586,865

Spero Therapeutics, Inc.
Condensed Consolidated Balance Sheet Data
(unaudited, amounts in thousands)

	As of December 31,	
	2018	2017
Cash, cash equivalents and marketable securities	$115,443	$87,288
Other assets	13,563	6,191
Total assets	**$129,006**	**$93,479**
Total liabilities	13,151	8,522
Total stockholder's equity	115,855	84,957
Total liabilities and stockholders' equity	**$129,006**	**$93,479**