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As filed with the Securities and Exchange Commission on August 25, 2020

Registration No. 333-

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

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ACADIA PHARMACEUTICALS INC.

(Exact name of Registrant as specified in its charter)

Delaware	**06-1376651**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

3611 Valley Centre Drive, Suite 300
San Diego, CA 92130
(858) 558-2871
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Stephen R. Davis
Chief Executive Officer
ACADIA Pharmaceuticals Inc.
3611 Valley Centre Drive, Suite 300, San Diego, CA 92130
(858) 558-2871
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Austin D. Kim	**L. Kay Chandler, Esq.**
Executive Vice President, General Counsel and Secretary	**Sean M. Clayton, Esq.**
ACADIA Pharmaceuticals Inc.	**Cooley LLP**
3611 Valley Centre Drive, Suite 300	**4401 Eastgate Mall**
San Diego, CA 92130	**San Diego, CA 92121-1909**
(858) 558-2871	**(858) 550-6000**

Approximate date of commencement of proposed sale to the public:
From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box: ☒

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box: ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		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 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Number of Shares to be Registered (1)**	**Proposed Maximum Offering Price Per Share (2)**	**Proposed Maximum Aggregate Offering Price (2)**	**Amount of Registration Fee**
Common Stock, $0.0001 par value	1,174,208	$38.42	$45,113,071.36	$5,855.68

(1) Pursuant to Rule 416 under the Securities Act, the shares being registered hereunder include such indeterminate number of additional shares of common stock as may be issuable as a result of stock splits, stock dividends or similar transactions with respect to the shares being registered hereunder.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) under the Securities Act, based upon the average of the high and low prices for the common stock on August 24, 2020, as reported by the Nasdaq Global Select Market.

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PROSPECTUS

Common Stock

This prospectus relates to the disposition from time to time of up to 1,174,208 shares of our common stock which are held by the selling stockholders identified in this prospectus. The selling stockholders acquired these shares from us in connection with our acquisition of CerSci Therapeutics Incorporated pursuant to the terms of the Agreement and Plan of Merger, dated as of August 24, 2020, by and among us, Queen Merger Sub, Inc., CerSci Therapeutics Incorporated and Shareholder Representative Services LLC.

We are not selling any common stock under this prospectus and will not receive any of the proceeds from the sale of shares by the selling stockholders.

The selling stockholders may sell the shares of common stock described in this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholders may sell their shares of common stock in the section entitled “Plan of Distribution” on page 9. The selling stockholders will bear all commissions and discounts, if any, attributable to the sale or disposition of the shares, or interests therein. We will bear all costs, expenses and fees in connection with the registration of the shares. We will not be paying any underwriting discounts or commissions in this offering.

Our common stock is listed on the Nasdaq Global Select Market under the symbol “ACAD”. On August 24, 2020, the last reported sale price of our common stock was $38.00 per share.

An investment in our common stock involves a high degree of risk. You should review carefully the risks and uncertainties referred to under the heading “Risk Factors” beginning on page 5 of this prospectus and under any similar headings in any amendment or supplement to this prospectus or in any filing with the Securities and Exchange Commission that is incorporated 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.

August 25, 2020

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a "shelf" registration process as a "well-known seasoned issuer," as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. Under this registration statement, the selling stockholders may sell from time to time in one or more offerings the common stock described in this prospectus.

We have not, and the selling stockholders have not, authorized anyone to provide you with information other than the information contained or incorporated by reference in this prospectus and any related prospectus supplement. No one is making offers to sell or seeking offers to buy these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus and any prospectus supplement is accurate only as of the date on the front of this prospectus or the prospectus supplement, as applicable, and that any information incorporated by reference in this prospectus or any prospectus supplement is accurate only as of the date given in the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

References in this prospectus to "ACADIA," the "Company," "we," "us" and "our" refer to ACADIA Pharmaceuticals Inc., together with our wholly-owned subsidiaries.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere or incorporated by reference into this prospectus. Because it is a summary, it does not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus carefully, including the section entitled "Risk Factors", any prospectus supplement and the documents that we incorporate by reference into this prospectus, before making an investment decision.

ACADIA Pharmaceuticals Inc.

We are a biopharmaceutical company focused on the development and commercialization of innovative medicines to address unmet medical needs in central nervous system disorders. We have a portfolio of product opportunities led by our novel drug, NUPLAZID (pimavanserin), which was approved by the U.S. Food and Drug Administration, or the FDA, in April 2016 for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis, or PD Psychosis. We hold worldwide commercialization rights to pimavanserin. NUPLAZID is available in 34 mg capsule and 10 mg tablet.

We believe that pimavanserin has the potential to address important unmet medical needs in neurological and psychiatric disorders in addition to PD Psychosis and we plan to continue to study the use of pimavanserin in multiple disease states. For example, we believe dementia-related psychosis, or DRP, represents one of our most important opportunities for further exploration. In June 2020, we submitted a supplemental New Drug Application, or sNDA, for NUPLAZID for the treatment of hallucinations and delusions associated with DRP. In July 2020 the FDA notified us of acceptance of our sNDA with a PDUFA date of April 3, 2021. The FDA advised us that it has not identified any potential review issues at this point in their evaluation and at this time they are not planning to hold an Advisory Committee meeting. The sNDA is supported by results from the pivotal Phase 3 HARMONY study, which met its primary endpoint, demonstrating that pimavanserin significantly reduced the risk of relapse of psychosis by 2.8 fold compared to placebo (hazard ratio = 0.353; one-sided p=0.0023). The sNDA also includes positive efficacy results from two additional placebo-controlled studies, both of which met their respective primary endpoints: the Phase 2 (-019) study in patients with Alzheimer's disease psychosis and the Phase 3 (-020) study in patients with Parkinson's disease psychosis. The sNDA includes a large safety database from completed and ongoing studies representing over 1,500 patients with neurodegenerative disease. An estimated 8.0 million people in the United States are living with dementia, and studies suggest that approximately 30% of dementia patients, or 2.4 million people, have psychosis, commonly consisting of delusions and hallucinations. Approximately 1.2 million patients in the United States are currently treated for DRP and, of those treated, approximately two-thirds are treated with off-label anti-psychotics. In the fourth quarter of 2017, the FDA granted Breakthrough Therapy Designation for pimavanserin for the treatment of DRP.

In October 2018, we announced positive top-line results from CLARITY, a Phase 2 study evaluating pimavanserin for adjunctive treatment in 207 patients with major depressive disorder, or MDD. In July 2020, we announced that our Phase 3 CLARITY study, which combined the two identical, double-blind, placebo-controlled studies (CLARITY-2 and CLARITY-3) in 298 patients, did not achieve statistical significance on the primary endpoint. At this time we do not plan on initiating any additional Phase 3 studies to evaluate pimavanserin for the adjunctive MDD indication.

Schizophrenia remains a disease with high unmet need, and we are currently exploring the utility of pimavanserin in this area. In the fourth quarter of 2016, we initiated our ADVANCE study, a Phase 2 study that evaluated pimavanserin for the negative symptoms of schizophrenia, for which there are currently no FDA-approved therapies. Negative symptoms of schizophrenia have been associated with poor long-term

outcomes and disability even when the positive symptoms are well controlled, representing a high unmet need. In November 2019, we announced positive top-line results from our ADVANCE study that evaluated the efficacy of pimavaserin compared to placebo in 403 patients with predominantly negative symptoms of schizophrenia who have achieved adequate control of positive symptoms with their existing antipsychotic treatment. Pimavanserin demonstrated a statistically significant improvement on the study's primary endpoint, the change from baseline to week 26 on the Negative Symptom Assessment-16 (NSA-16) total score compared to placebo (p=0.043). A greater improvement in the NSA-16 total score compared to placebo was observed in patients who received the highest pimavanserin dose of 34 mg (n=107; unadjusted p=0.0065). 53.8% of patients who were randomized to receive pimavanserin completed the trial on 34 mg, 44.7% on 20 mg, and 1.5% on 10 mg. In the study, pimavanserin did not separate from placebo on the key secondary endpoint, the Personal and Social Performance scale. In the third quarter of 2020, we initiated a second pivotal study, ADVANCE-2. The Phase 3 study will evaluate the efficacy of pimavaserin 34 mg once daily compared to placebo in approximately 386 patients with predominantly negative symptoms of schizophrenia who have achieved adequate control of positive symptoms with their existing antipsychotic treatment.

In August 2018, we acquired an exclusive North American license to develop and commercialize trofinetide for Rett syndrome and other indications from Neuren Pharmaceuticals Limited. Rett syndrome is a debilitating neurological disorder that occurs predominantly in females following apparently normal development for the first six months of life. Typically, between six to eighteen months of age, patients experience a period of rapid decline with loss of purposeful hand use and spoken communication and inability to independently conduct activities of daily living. Symptoms also include seizures, disorganized breathing patterns, scoliosis and sleep disturbances. Trofinetide is a novel synthetic analog of the amino-terminal tripeptide of insulin-like growth factor 1, designed to treat the core symptoms of Rett syndrome by reducing neuroinflammation and supporting synaptic function. Trofinetide has been granted FDA Fast Track Status and an Orphan Drug Designation in the U.S. and an Orphan Designation in Europe, as well as Rare Pediatric Disease designation in the U.S. Currently, there are no approved medicines for the treatment of Rett syndrome. In October 2019, we initiated the Phase 3 LAVENDER randomized, double-blind placebo-controlled study evaluating trofinetide in girls and young women 5-20 years of age with Rett syndrome. We expect results from our LAVENDER study in the second half of 2021, but we are unable to predict with certainty how the pandemic might affect the timing for completion of the study.

In March 2020, we acquired an exclusive worldwide license to develop and commercialize novel drug candidates targeting positive allosteric modulators, or PAMs, of the muscarinic M1 receptor with the potential to treat a range of central nervous system, or CNS, disorders, from Vanderbilt University. Under the agreement, we obtained exclusive worldwide rights to certain highly selective M1 PAMs, which represent a promising approach for improving cognitive function and other neuropsychiatric symptoms in patients suffering from CNS disorders. The agreement includes a portfolio of candidates, with molecules at various stages of testing, including a lead compound in early Phase 1 testing, several additional compounds in pre-clinical development as well as any additional compounds generated in an ongoing discovery program.

We were incorporated in Delaware in January 1997. Our principal executive offices are located at 3611 Valley Centre Drive, Suite 300, San Diego, California 92130, and our telephone number at that address is (858) 558-2871. Our website address is www.acadia-pharm.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

Acquisition of CerSci Therapeutics Incorporated

On August 24, 2020, we entered into an Agreement and Plan of Merger, or the "Merger Agreement", by and among us, Queen Merger Sub, Inc., or "Merger Sub", CerSci Therapeutics Incorporated, or "CerSci", and Shareholder Representative Services LLC, and on the same day, the transactions contemplated by the Merger

Agreement closed and Merger Sub merged with and into CerSci, with CerSci as the surviving corporation and our wholly-owned subsidiary.

CerSci is a clinical-stage biotechnology company with worldwide rights to a portfolio of novel compounds for neurological conditions, including non-opioid therapies for acute and chronic pain. CerSci's lead development program is a unique Reactive Species Decomposition Accelerant, a first-in-class mechanism focused on interrupting pathways that sensitize neurons to pain. The portfolio contains additional preclinical stage molecules, including brain penetrant molecules, with potential for symptomatic and disease modifying treatment utility in neurodegenerative diseases.

Pursuant to the terms of the Merger Agreement, in connection with the closing of the transactions contemplated by the Merger Agreement, the former holders of CerSci's capital stock, warrants or options, or collectively, the "CerSci Equityholders", were entitled to $52.5 million as upfront consideration, subject to certain adjustments, $47.2 million of which was paid through the issuance of 1,174,208 shares of our common stock at closing. In addition, CerSci Equityholders may be eligible to receive up to $887.0 million in development, commercialization and sales milestones, and tiered royalties in the mid-single digits based on annual net sales, which milestones and royalties would be payable in cash. Under the terms of the Merger Agreement, we agreed to file with the SEC a registration statement on Form S-3 to register for resale of the shares of our common stock that we issued as part of the consideration for the merger at closing.

Our stockholders are not considered third-party beneficiaries under the Merger Agreement and should not rely on the representations, warranties, covenants or any descriptions thereof as characterization of the actual state of facts of condition of us, CerSci or any of our respective subsidiaries.

Throughout this prospectus, when we refer to the shares of our common stock, the offer and sale of which are being registered on behalf of the selling stockholders on the registration statement of which this prospectus is a part, we are referring to the shares of common stock held by former holders of the capital stock of CerSci, that we agreed to register pursuant to the Merger Agreement. When we refer to the "selling stockholders" in this prospectus, we are referring to former holders of the capital stock, warrants and options of CerSci.

The Offering

Common Stock to be Offered by the Selling Stockholders	1,174,208 shares
Use of Proceeds	We will not receive any proceeds from the sale of the shares of common stock covered by this prospectus
Nasdaq Global Select Market Symbol	ACAD

The selling stockholders named in this prospectus may offer and sell up to 1,174,208 shares of our common stock issued by us pursuant to the Merger Agreement. We agreed to file the registration statement to which this prospectus forms a part to register these shares pursuant to the Merger Agreement.

RISK FACTORS

An investment in our common stock involves a high degree of risk. Prior to making a decision about investing in our common stock, you should consider carefully the specific risk factors discussed in the sections entitled “Risk Factors” contained in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2020, as filed with the SEC which is incorporated in this prospectus by reference in its entirety, as well as any amendment or updates to our risk factors reflected in subsequent filings with the SEC, including any prospectus supplement hereto. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us, or that we currently view as immaterial, may also impair our business. If any of the risks or uncertainties described in our SEC filings or any additional risks and uncertainties actually occur, our business, financial condition, results of operations and cash flow could be materially and adversely affected. In that case, the trading price of our common stock could decline and you might lose all or part of your investment.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains, and the documents incorporated by reference herein and any applicable prospectus supplement may contain, forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to statements about:

- the benefits to be derived from NUPLAZID® (pimavanserin) and other drug candidates;
- the potential market opportunities for pimavanserin and other drug candidates;
- our strategy for the commercialization of NUPLAZID;
- our plans for exploring and developing pimavanserin for indications other than in Parkinson's disease psychosis;
- our plans and timing with respect to seeking regulatory approvals;
- the potential commercialization of any of our drug candidates that receive regulatory approval;
- the progress, timing, results or implications of clinical trials and other development activities involving NUPLAZID and other drug candidates;
- our strategy for discovering, developing and, if approved, commercializing drug candidates;
- our existing and potential future collaborations;
- our estimates of future payments, revenues and profitability;
- our estimates regarding our capital requirements, future expenses and need for additional financing;
- the potential or expected impact of the global COVID-19 pandemic on our business; and
- possible changes in legislation.

In some cases, you can identify forward-looking statements by terms such as "may", "will", "should", "could", "would", "expects", "plans", "anticipates", "believes", "estimates", "projects", "predicts", "potential" and similar expressions (including their use in the negative) intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading "Risk Factors" in our SEC filings, and may provide additional information in any applicable prospectus supplement. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement.

You should read this prospectus, the registration statement of which this prospectus is a part, the documents incorporated by reference herein, and any applicable prospectus supplement completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of shares of our common stock by the selling stockholders pursuant to this prospectus.

Each selling stockholder will pay any underwriting discounts and commissions and any expenses incurred by the selling stockholder for brokerage, accounting, tax or legal services or any other expenses incurred by such selling stockholder in disposing of shares covered by this prospectus. We will bear all other costs, fees and expenses incurred in effecting the registration statement of which this prospectus forms a part, including, without limitation, all registration fees, any applicable listing fees of the Nasdaq Global Select Market and fees and expenses of our counsel and our accountants.

SELLING STOCKHOLDERS

We are registering for resale an aggregate of 1,174,208 shares of our common stock that may be sold by the selling stockholders set forth herein. The shares registered hereby were issued to the former holders of the capital stock, warrants and options of CerSci in connection with the closing of the merger pursuant to the Merger Agreement and were issued pursuant to the exemption from the registration requirements provided in Section 4(a)(2) of the Securities Act for transactions by an issuer not involving any public offering.

Pursuant to the Merger Agreement, we agreed to file with the SEC a registration statement on Form S-3 to register for resale the shares of our common stock that we issued as part of the consideration for the merger at closing. We agreed to promptly file any documents with the SEC as may be necessary to keep such registration statement effective for a period of six months, or if earlier, the date on which all such shares of common stock have been sold pursuant to an effective registration statement, or prospectus supplement. We also agreed to use reasonable best efforts to make available to the selling stockholders the benefits of Rule 144 of the Securities Act and any other rule or regulation of the SEC that may at any time permit a holder to sell shares of our common stock to the public without registration until the date on which all such shares of common stock have been sold pursuant to an effective registration statement, or prospectus supplement.

Beneficial ownership is determined in accordance with the rules of the SEC, and includes voting or investment power with respect to our common stock. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons named in the table below have sole voting and investment power with respect to all shares of common stock that they beneficially own, subject to applicable community property laws.

The selling stockholders may sell some, all or none of their respective shares of common stock offered by this prospectus from time to time. We do not know how long the selling stockholders will hold their respective shares of common stock covered hereby before selling them. Other than the Merger Agreement and the agreements contemplated thereby, we currently have no agreements, arrangements or understandings with the selling stockholders regarding the sale of any of the shares of common stock being offered hereunder.

	Shares Beneficially Owned Prior to Offering		Maximum Number of Shares to be Sold Pursuant to this Prospectus	Shares Beneficially Owned After Offering (2)	
Name of Selling Stockholder	Number	Percent		Number	Percent
All Selling Stockholders (1)	1,174,208	*	1,174,208	–	*

* Represents beneficial ownership of less than one percent of the outstanding shares of our common stock.

(1) The selling stockholders collectively beneficially own less than one percent of the outstanding shares of our common stock.

(2) The selling stockholders may offer and sell all or part of the common stock covered by this prospectus, but no estimates can be made as to the amount of shares of common stock that will be held by the selling stockholders after the completion of this offering.

PLAN OF DISTRIBUTION

The selling stockholders and any of their pledgees, assignees and successors-in-interest may, from time to time in one or more transactions on Nasdaq or any other organized market where our shares of common stock may be traded, sell any or all of their shares of our common stock offered hereby through underwriters, dealers or agents, directly to one or more purchasers or through a combination of any such methods of sale. The selling stockholders may distribute the shares of our common stock offered hereby from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

The selling stockholders may use any one or more of the following methods when selling the shares offered hereby:

- 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;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers
- one or more block trades in which the broker-dealer will attempt to sell the shares as agent or principal of all such shares held by the selling stockholder;
- 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;
- short sales;
- agreements between broker-dealers and the selling stockholder to sell a specified number of such shares at a stipulated price per share; and
- any other method or combination of methods of sale permitted pursuant to applicable law.

The selling stockholders may also sell shares pursuant to Rule 144 under the Securities Act, if available, rather than under this prospectus.

If the selling stockholders effect such transactions by selling shares of common stock offered hereby 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 offered hereby for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of common stock offered hereby or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of common stock offered hereby in the course of hedging in positions they assume. The selling stockholders may also sell shares of

common stock offered hereby short and 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 offered hereby to broker-dealers that in turn may sell such shares.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of common stock 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 under this prospectus or any amendment to this prospectus under Rule 424(b)(3), or other applicable provision of the Securities Act, supplementing or 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 the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer participating in the distribution of the shares of common stock offered hereby may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares of common stock purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Any such discounts, concessions, commissions and similar selling expenses, if any, attributable to the sale of shares will be borne by a selling stockholder. The selling stockholders may agree to indemnify any agent, dealer or broker-dealer that participates in transactions involving sales of the shares if liabilities are imposed on that person under the Securities Act. At the time a particular offering of the shares of common stock offered hereby is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or reallowed or paid to broker-dealers.

Under the securities laws of some states, the shares of common stock offered hereby may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock offered hereby 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.

There can be no assurance that any selling stockholder will sell any or all of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to the applicable provisions of the Exchange Act, and the rules and regulations promulgated thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of common stock offered hereby by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock offered hereby to engage in market-making activities with respect to the shares of common stock offered hereby. All of the foregoing may affect the marketability of the shares of common stock offered hereby and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock offered hereby.

Once sold under the shelf registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

LEGAL MATTERS

The validity of the common stock being offered by this prospectus will be passed upon for us by Cooley LLP, San Diego, California.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements (and schedule) included in our Annual Report on Form 10-K for the year ended December 31, 2019, and the effectiveness of our internal control over financial reporting as of December 31, 2019, as set forth in their reports, which are incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements (and schedule) are incorporated by reference in reliance on Ernst & Young LLP's reports, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and we file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement under the Securities Act with respect to the common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits which are part of the registration statement. For further information with respect to us and the common stock offered by this prospectus, we refer you to the registration statement and the exhibits filed as part of the registration statement. Our SEC filings are available to the public from the SEC's website at www.sec.gov. We maintain a website at www.acadia-pharm.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information.

We incorporate by reference the following documents we filed with the SEC pursuant to Section 13 of the Exchange Act and any future filings we will make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act after the date of this prospectus until the termination of the offering of the shares covered by this prospectus (other than information furnished under Item 2.02 or Item 7.01 of Form 8-K):

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2019;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed) filed with the SEC on April 29, 2020;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2020 and June 30, 2020;
- our Current Reports on Form 8-K filed on June 29, 2020, July 20, 2020; August 6, 2020 and August 25, 2020; and
- the description of our common stock contained in our registration statement on Form 8-A dated May 19, 2004.

You may access our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, Proxy Statement, and amendments, if any, to those documents filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at the SEC's website or our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The reference to our website does not constitute incorporation by reference of the information contained in our website. We do not consider information contained on, or that can be accessed through, our website to be part of this prospectus or the related registration statement.

You may request a copy of our SEC filings at no cost, by telephoning or writing us at the following address:

Investor Relations
ACADIA Pharmaceuticals Inc.
3611 Valley Centre Drive, Suite 300
San Diego, CA 92130
(858) 558-2871

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, payable by us in connection with the offering of common stock being registered. All amounts are estimates except the registration fee.

	Amount to Be Paid
SEC registration fee	$ 5,856
Legal fees and expenses	15,000
Accounting fees and expenses	10,000
Printing and miscellaneous	4,144
Total	$ 35,000

Item 15. Indemnification of Directors and Officers

Section 102 of the Delaware General Corporation Law allows a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit.

Section 145 of the Delaware General Corporation Law provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against amounts paid and expenses incurred in connection with an action or proceeding to which he is or is threatened to be made a party by reason of such position, if such person shall have acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interest of the corporation, and, in any criminal proceeding, if such person had no reasonable cause to believe his conduct was unlawful; provided that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the adjudicating court determines that such indemnification is proper under the circumstances.

Our amended and restated certificate of incorporation and bylaws include provisions that indemnify our directors and officers for actions taken in such capacity, if the actions were taken in good faith and in a manner reasonably believed to be in our best interests and, in a criminal proceeding, the director or officer had no reasonable cause to believe that his or her conduct was unlawful. A director or officer who is successful in defending a claim will be indemnified for all expenses incurred in connection with his or her defense. We have entered into indemnification agreements with our officers and directors that require us to indemnify such persons against any and all expenses (including attorneys' fees), witness fees, damages, judgments, fines, settlements and other amounts incurred in connection with any action, suit or proceeding, whether actual or threatened, to which any such person may be made a party by reason of the fact that such person is or was or at any time becomes a director, an officer or an employee of ACADIA or any of our affiliated enterprises, provided that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to our best interest and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful.

We maintain directors and officers insurance providing indemnification for certain of our directors, officers, affiliates, partners and employees for certain liabilities.

Item 16. Exhibits

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation, as Amended (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q, filed August 6, 2015).
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed September 12, 2013).
4.1	Reference is made to Exhibits 3.1 and 3.2 above.
4.2	Form of common stock certificate of the Registrant (incorporated by reference to Exhibit 4.1 to Registration Statement No. 333-52492).
4.3	Form of Amended and Restated Warrant to Purchase Common Stock (superseding the form of warrant issued to certain purchasers in a private placement on December 17, 2012) (incorporated by reference to Exhibit 4.2 to the Registrant's Annual Report on Form 10-K, filed February 27, 2019).
5.1	Opinion of Counsel.
23.1	Consent of Independent Registered Public Accounting Firm.
23.2	Consent of Counsel (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page)

Item 17. Undertakings

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that subparagraphs (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions of Item 15 above, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California, on August 25, 2020.

ACADIA PHARMACEUTICALS INC.

By: /s/ Stephen R. Davis
Stephen R. Davis
Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Stephen R. Davis and Austin D. Kim, and each of them, as his or her true and lawful attorneys in fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments to this registration statement and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys in fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys in fact and agents, or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Stephen R. Davis Stephen R. Davis	Chief Executive Officer, Director *(Principal Executive Officer)*	August 25, 2020
/s/ Elena H. Ridloff Elena H. Ridloff	Executive Vice President and Chief Financial Officer *(Principal Financial Officer)*	August 25, 2020
/s/ James K. Kihara James K. Kihara	Vice President and Corporate Controller *(Principal Accounting Officer)*	August 25, 2020
/s/ Stephen R. Biggar Stephen R. Biggar	Chairman of the Board	August 25, 2020
/s/ Julian C. Baker Julian C. Baker	Director	August 25, 2020
/s/ Laura A. Brege Laura A. Brege	Director	August 25, 2020
/s/ James M. Daly James M. Daly	Director	August 25, 2020
/s/ Edmund P. Harrigan Edmund Harrigan	Director	August 25, 2020
/s/ Daniel B. Soland Daniel B. Soland	Director	August 25, 2020

Exhibit 5.1

Cooley

Sean M. Clayton
T: +1 858 550 6034
sclayton@cooley.com

August 25, 2020

ACADIA Pharmaceuticals Inc.
3611 Valley Centre Drive, Suite 300
San Diego, CA 92130

Ladies and Gentlemen:

You have requested our opinion, as counsel to ACADIA Pharmaceuticals Inc., a Delaware corporation (the "***Company***"), with respect to certain matters in connection with the filing by the Company of a Registration Statement on Form S-3 (the "***Registration Statement***") with the Securities and Exchange Commission, including a related prospectus filed with the Registration Statement (the "***Prospectus***"), covering the registration for resale of up to 1,174,208 shares of the Common Stock, $0.0001 par value, of the Company on behalf of certain selling stockholders (the "***Shares***").

In connection with this opinion, we have examined and relied upon the Registration Statement, the Prospectus, the Company's Certificate of Incorporation and Bylaws, each as currently in effect, and originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies and the due authorization, execution and delivery by all persons other than the Company of all documents where authorization, execution and delivery are prerequisites to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares have been validly issued and are fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus and to the filing of this opinion as an exhibit to the Registration Statement.

Very truly yours,

Cooley LLP

By: /s/ Sean M. Clayton
Sean M. Clayton

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in this Registration Statement (Form S-3) and related Prospectus of ACADIA Pharmaceuticals Inc. for the registration of shares of its common stock and to the incorporation by reference therein of our reports dated February 26, 2020, with respect to the consolidated financial statements and schedule of ACADIA Pharmaceuticals Inc., and the effectiveness of internal control over financial reporting of ACADIA Pharmaceuticals Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2019, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

San Diego, California
August 25, 2020