NANOGEN INC
Form S-3
August 20, 2001

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As filed with the Securities and Exchange Commission on August 20, 2001

Registration No. 333-

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT
Under
The Securities Act of 1933

NANOGEN, INC.

(Exact name of Registrant as specified in its charter)

Delaware	**3826**	**33-0489621**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

10398 Pacific Center Court
San Diego, CA 92121
(858)410-4600

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Vera P. Pardee, Esq.
Vice President, General Counsel and Secretary
10398 Pacific Center Court
San Diego, CA 92121
(858)410-4600

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

John L. Donahue, Esq.
Wilson Sonsini Goodrich & Rosati
Professional Corporation
650 Page Mill Road
Palo Alto, CA 94304
(650) 493-9300

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

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:**/x/**

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 delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box./ /

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Unit(1)	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee
Common Stock, $0.001 par value per share	416,666 shares	$6.38	$2,658,329	$665

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933 based on a per share price of the average of the high and low reported sales prices of the Registrant's common stock on the Nasdaq National Market on August 14, 2001.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

SUBJECT TO COMPLETION, DATED AUGUST 20, 2001

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

NANOGEN, INC.

416,666 Shares

Common Stock

This prospectus relates to 416,666 shares of our common stock that may be sold from time to time by the selling securityholders identified in this prospectus. We will not receive any proceeds from the sale of the shares offered by this prospectus.

Our common stock is quoted on the Nasdaq National Market under the symbol "NGEN". On August 17, 2001, the last reported sale price for our common stock on the Nasdaq National Market was $7.01 per share.

Investment in the securities involves risks. See "Risk Factors" beginning on page 2 of this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is August , 2001.

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. We have not authorized anyone else to provide you with different information. The selling securityholders will not make an offer of the shares of our common stock in any state where the offer is not permitted. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents.

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THE COMPANY

We integrate advanced microelectronics and molecular biology into a core technology platform with potentially broad and diverse commercial applications in the fields of genomics, biomedical research, medical diagnostics, drug discovery, forensics, agriculture, environmental testing and potentially the electronics and telecommunications industries. The first application we have developed, the NanoChip System, is an integrated bioassay system consisting of the NanoChip Molecular Biology Workstation and the NanoChip Cartridge. The NanoChip Workstation is comprised of two automated instruments and the NanoChip Cartridge, a consumable cartridge, which incorporates a proprietary microchip. The NanoChip System provides a flexible tool for the rapid identification and precision analysis of biological test samples containing charged molecules.

We were incorporated in California in November 1991 and we reincorporated in Delaware in November 1997. Our corporate offices are located at 10398 Pacific Center Court, San Diego, California 92121 and our telephone number is (858) 410-4600.

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

In addition to the other information contained in this prospectus, investors should carefully consider the risk factors disclosed in this prospectus, including those beginning on page 2, in evaluating an investment in our common stock. This prospectus and the documents incorporated herein by reference include "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. All statements other than statements of historical fact are "forward-looking statements" for purposes of these provisions, including any projections of earnings, revenues or other financial items, any statements of the plans and objectives of management for future operations, any statements concerning proposed new products or services, any statements regarding future economic conditions or performance, and any statement of assumptions underlying any of the foregoing. In some cases, forward-looking statements can be identified by the use of terminology such as "may", "will", "expects", "plans", "anticipates", "estimates", "potential", or "continue" or the negative thereof or other

comparable terminology. Although we believe that the expectations reflected in the forward-looking statements contained herein and in such incorporated documents are reasonable, there can be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including but not limited to the risk factors set forth below and for the reasons described elsewhere in this prospectus. All forward-looking statements and reasons why results may differ included in this prospectus are made as of the date hereof, and we assume no obligation to update any such forward-looking statement or reason why actual results might differ.

RISK FACTORS

You should carefully consider the risks described below before making a decision to invest in our common stock. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties not presently known to us or that we do not currently believe are important to an investor may also harm our business operations. If any of the events, contingencies, circumstances or conditions described in the following risks actually occur, our business, financial condition or our results of operations could be seriously harmed. If that occurs, the trading price of our common stock could decline, and you may lose part or all of your investment.

Our products may not be successfully developed, which would harm us and force us to curtail or cease operations.

We are at an early stage of development. We currently have only two products for sale, our NanoChip Molecular Biology Workstation and our NanoChip Cartridge. All of our other potential products are under development. Our NanoChip System or our other products may not be successfully developed or commercialized on a timely basis, or at all. If we are unable, for technological or other reasons, to complete the development, introduction or scale-up of manufacturing of our new products, or if our products do not achieve a significant level of market acceptance, we would be forced to curtail or cease operations.

Our success will depend upon our ability to overcome significant technological challenges and successfully introduce our products into the marketplace. A number of applications envisioned by us will require significant enhancements to our basic technology platform. There can be no assurance that we can successfully develop such enhancements.

Lack of market acceptance of our technology would harm us.

We may not be able to develop commercially viable products. Even if we develop a product it may not be accepted in the marketplace. If we are unable to achieve market acceptance, we will not be able to generate sufficient product revenue to become profitable. We may also be forced to carry greater inventories of our products for longer periods than we may have anticipated. If we are unable to sell the inventory of our products in a timely fashion and at anticipated price levels, we may not become profitable. In addition, we may have to take accounting charges and reduce the value of our product inventory to its net realizable value. Market acceptance will depend on many factors, including our ability to:

- convince prospective strategic partners and customers that our technology is an attractive alternative to other technologies;
- manufacture products in sufficient quantities with acceptable quality and at an acceptable cost; and
- sell, place and service sufficient quantities of our products.

In addition, our technology platform could be harmed by limited funding available for product and technology acquisitions by our customers, internal obstacles to customer approvals of purchases of our products and market conditions in general.

Commercialization of some of our potential products depends on collaborations with others. If our collaborators are not successful or if we are unable to find collaborators in the future, we may not be able to develop these products.

Our strategy for the research, development and commercialization of some of our products requires us to enter into contractual arrangements with corporate collaborators, joint venture partners, licensors, licensees and others. Our success depends in part upon the performance by these collaboration partners and potential collaboration partners of their responsibilities under these

arrangements. Some collaborators may not perform their obligations as we expect or we may not derive any revenue or other benefits from these arrangements.

We have collaborative agreements with a health care company, a pharmaceutical company and a developer and manufacturer of instrumentation products and we entered into a joint venture with the research and development subsidiary of a pharmaceutical company. We do not know whether the collaborators will successfully develop and market any products under our respective agreements. Moreover, some of our collaborators are also researching competing technologies targeted by our collaborative programs. We may be unsuccessful in entering into other collaborative arrangements to develop and commercialize our products. In addition, disputes may arise over ownership rights to intellectual property, know-how or technologies developed with our collaborators.

We currently have agreements with Aventis, Becton Dickinson and Hitachi, Ltd. that contemplate the commercialization of products resulting from agreements between the parties. In addition, we have a manufacturing and distribution agreement with Hitachi. In June 2001, we also entered into a joint venture, Nanogen Recognomics GmbH, with Aventis Research and Technologies & Co. KG, in which we own 60% of the stock of Nanogen Recognomics and Aventis R&T owns the remaining 40%. Nanogen Recognomics seeks to combine our NanoChip technology and Aventis R & T's intellectual property and expertise in synthetic oligonucleotide chemistry and advanced molecular biology to develop new products and applications for the NanoChip system. These collaborations may not be successful.

We have a history of net losses. We expect to continue to incur net losses and we may not achieve or maintain profitability.

We began selling our first two products in the second quarter of 2000, but we did not sell significant quantities of our first products during fiscal 2000 or during the six months ended June 30, 2001. From our inception to June 30, 2001, we have incurred cumulative net losses totaling approximately $108.9 million. Moreover, our negative cash flow and losses from operations will continue to increase for the foreseeable future. We may never generate sufficient product revenue to become profitable. We also expect to have quarter-to-quarter fluctuations in revenues, expenses and losses, some of which could be significant. The amount and timing of product revenue recognition may depend on whether potential customers for the NanoChip System choose to enter into title transfer or non-title transfer transactions.

To develop and sell our products successfully, we will need to increase our spending levels in research and development, as well as in selling, marketing and administration. We will have to incur these increased spending levels before knowing whether our products can be sold successfully.

We may need additional capital in the future. If additional capital is not available, we may have to curtail or cease operations.

We may need to raise more money to continue the research and development necessary to bring our products to market and to establish manufacturing and marketing capabilities. We may seek additional funds through public and private stock offerings, arrangements with corporate partners, borrowings under lease lines of credit or other sources. If we cannot raise more money we will have to reduce our capital expenditures, scale back our development of new products, reduce our workforce and license to others products or technologies that we otherwise would seek to commercialize ourselves. The amount of money we will need will depend on many factors, including among others:

- the progress of our research and development programs;
- the commercial arrangements we may establish;
- the time and costs involved in:
  - scaling up our manufacturing capabilities;

  - meeting regulatory requirements, including obtaining necessary regulatory clearances or approvals;

filing, prosecuting, defending and enforcing patent claims and litigation; and

the scope and results of our future preclinical studies and clinical trials, if any.

Additional capital may not be available on terms acceptable to us, or at all. Any additional equity financing may be dilutive to stockholders, and debt financing, if available, may include restrictive covenants.

Competing technologies may adversely affect us.

We expect to encounter intense competition from a number of companies that offer products in our targeted application areas. We anticipate that our competitors in these areas will include:

health care and other companies that manufacture laboratory-based tests and analyzers;

diagnostic and pharmaceutical companies; and

companies developing drug discovery technologies.

If we are successful in developing products in these areas, we will face competition from established companies and numerous development-stage companies that continually enter these markets.

In many instances, our competitors have substantially greater financial, technical, research and other resources and larger, more established marketing, sales, distribution and service organizations than us. Moreover, these competitors may offer broader product lines and have greater name recognition than us and may offer discounts as a competitive tactic.

In addition, several development-stage companies are currently making or developing products that compete with or will compete with our potential products. Our competitors may succeed in developing, obtaining FDA approval or marketing technologies or products that are more effective or commercially attractive than our potential products, or that render our technologies and potential products obsolete.

As these companies develop their technologies, they may develop proprietary positions that may prevent us from successfully commercializing products.

Also, we may not have the financial resources, technical expertise or marketing, distribution or support capabilities to compete successfully in the future.

The uncertainty of patent and proprietary technology protection may adversely affect us.

Our success will depend in part on obtaining and maintaining meaningful patent protection on our inventions, technologies and discoveries. Our ability to compete effectively will depend on our ability to develop and maintain proprietary aspects of our technology, and to operate without infringing the proprietary rights of others, or to obtain rights to third-party proprietary rights, if necessary. Our pending patent applications may not result in the issuance of patents. Our patent applications may not have priority over others' applications, and even if issued, our patents may not offer protection against competitors with similar technologies. Any patents issued to us may be challenged, invalidated or circumvented and the rights created thereunder may not afford us a competitive advantage.

We also rely upon trade secrets, technical know-how and continuing inventions to develop and maintain our competitive position. Others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology and we may not be able to meaningfully protect our trade secrets, or be capable of protecting our rights to our trade secrets. We seek to protect our technology and patents, in part, by confidentiality agreements with our employees and contractors. Our employees may breach their

existing Proprietary Information, Inventions, and Dispute Resolution Agreements and these agreements may not protect our intellectual property. This could have a material adverse effect on us.

Our products could infringe on the intellectual property rights of others, which may subject us to future litigation and cause us to be unable to license technology from third parties.

Our commercial success also depends in part on us neither infringing valid, enforceable patents or proprietary rights of third parties, nor breaching any licenses that may relate to our technologies and products. We are aware of other third-party patents that may relate to our technology. It is possible that we may unintentionally infringe these patents or other patents or proprietary rights of third parties. We may in the future receive notices claiming infringement from third parties as well as invitations to take licenses under third-party patents. Any legal action against us or our collaborative partners claiming damages and seeking to enjoin commercial activities relating to our products and processes affected by third-party rights may require us or our collaborative partners to obtain licenses in order to continue to manufacture or market the affected products and processes. In addition, these actions may subject us to potential liability for damages. We or our collaborative partners may not prevail in an action and any license required under a patent may not be made available on commercially acceptable terms, or at all.

There are many U.S. and foreign patents and patent applications held by third parties in our areas of interest, and we believe that, besides our current litigation with CombiMatrix and Dr. Montgomery described below, there may be significant other litigation in the industry regarding patent and other intellectual property rights. Additional litigation could result in substantial costs and the diversion of management's efforts regardless of the result of the litigation. Additionally, the defense and prosecution of interference proceedings before the U.S. Patent and Trademark Office, or USPTO, and related administrative proceedings would result in substantial expense to us and significant diversion of effort by our technical and management personnel. We may in the future become subject to USPTO interference proceedings to determine the priority of inventions. In addition, laws of some foreign countries do not protect intellectual property to the same extent as do laws in the U.S., which may subject us to additional difficulties in protecting our intellectual property in those countries.

We are aware of U.S. and corresponding foreign patents and applications which are assigned to Affymax Technologies, N.V., and Affymetrix, Inc. which relate to certain devices having 1,000 or more groups of oligonucleotides occupying a total area of less than 1 cm^2, 400 different oligonucleotides per cm^2 on a substrate, and for gene expression, more than 100 different oligonucleotides at a density greater than about 60 different oligonucleotides per 1 cm^2. In the event that we proceed with the development of arrays with more than 400 groups of oligonucleotides, or for gene expression, with more than 100 different oligonucleotides, we expect to design our devices through, among other things, the selection of the physical dimensions, methods of binding, selection of support materials and intended uses of the device to avoid infringing these patents. We may not be able to design around these patents. We are aware of U.S. and European patents and patent applications owned by Isis Innovations Ltd. or Isis Innovations (E. M. Southern). We have opposed one allowed European patent which had broad claims to array technology for analyzing a predetermined polynucleotide sequence. Isis Innovations' position with respect to the opposed patent is that the claims relate to what it terms the "diagnostic mode." Those claims have now all been narrowed to the point that if the claims are accepted by the European Patent Office, they would not be infringed by our technology. On May 5, 1998, the Opposition Division of the European Patent Office issued a provisional nonbinding opinion that the claims should be revoked. If the claims of the original European patent survive the opposition or if an application relating to arrays issues in another country with claims as broad as the original European patent, we would be subject to infringement claims that could delay or preclude sales of some or all of our anticipated diagnostic products.

We were and are currently involved in intellectual property litigation that was and is costly, time-consuming and may impact our competitive position.

In April 2000, we filed a complaint for declaratory judgment against Motorola, Beckman and MIT in the United States District Court for the Southern District of California. Prior to the filing of the complaint, the parties had been involved in licensing discussions concerning U.S. Patent No. 5,693,939 entitled "Optical and Electrical Methods and Apparatus For Molecule Detection" (the " 939 patent") which was licensed by MIT to Beckman in 1993 and to Genometrix, Inc. or Genometrix in 1994. Genometrix subsequently granted its sublicensing rights to Motorola in 1999. The inventions claimed in the 939 patent were made with United States government funding through a grant from the Department of the Air Force. The complaint sought, among other things, a declaration that we are entitled to a license to the government funded 939 patent and, in the event we proceed to take a license, that we are not required to obtain a license from both Motorola and Beckman. Alternatively, the complaint sought a declaratory judgment that the claims of the 939 patent were invalid and not infringed by us.

In May 2000, we reached a settlement with Beckman and dismissed Beckman from the lawsuit without prejudice. In connection with the settlement, we secured a license to the 939 patent from Beckman. The action continued against Motorola and MIT. Motorola filed a counterclaim against us in May 2000, claiming infringement of the 939 patent and seeking monetary damages and injunctive relief. Motorola's counterclaim asserted that it had exclusive rights to certain claims in the 939 patent. In October 2000, our motion for leave to amend the complaint to add Genometrix as a defendant was granted.

In July 2001, we reached a settlement with Motorola, Genometrix and MIT. Pursuant to the settlement, Nanogen secured from Motorola a license to and freedom to operate under Claims 16 and 39 of the 939 Patent. In exchange, Nanogen agreed to pay the parties involved a total of $2.5 million in cash and $2.5 million in Nanogen common stock. The settlement does not include any cross-licensing provisions of Nanogen technology to Motorola, Genometrix or MIT. Nanogen's lawsuit and Motorola's counterclaim have now been dismissed. We have expended considerable financial resources and managerial efforts prosecuting, defending and settling the lawsuit and counterclaim.

In November 2000, we filed a complaint against CombiMatrix Corp. ("CombiMatrix") and Dr. Donald Montgomery in the United States District Court for the Southern District of California. Dr. Montgomery is a former Nanogen employee now affiliated with CombiMatrix.

The Nanogen complaint alleges that the naming of Dr. Montgomery as the sole inventor on U.S. Patent No. 6,093,302, entitled "Electrochemical Solid Phase Synthesis" (the " 302 patent"), and assignment of the 302 patent to CombiMatrix were incorrect and that the invention was made by Nanogen employees. The Complaint also alleges that inventions disclosed in the patent were Nanogen trade secrets and that CombiMatrix and Dr. Montgomery misappropriated these trade secrets by their actions, including publishing those trade secrets in patent applications. Nanogen's complaint seeks correction of inventorship, assignment of rights in the patent to Nanogen, an injunction preventing disclosure of trade secrets and damages for trade secret misappropriation.

On December 15, 2000, CombiMatrix and Dr. Montgomery filed a motion to dismiss Nanogen's complaint. On January 29, 2001, the motion was denied as to all claims except a claim for conversion, as to which the motion was granted without prejudice. We elected not to amend our complaint as to the conversion claim. On March 9, 2001, CombiMatrix and Dr. Montgomery answered Nanogen's complaint, asserted various affirmative defenses and filed a counterclaim for breach of contract against Nanogen for unspecified damages allegedly arising from the filing of the complaint at a time when CombiMatrix had announced its intent to make an initial public offering of its shares. The counterclaim asserts that Nanogen, by filing its complaint, breached a settlement agreement entered into between

Nanogen and Dr. Montgomery in 1995. On May 14, 2001, Nanogen filed a motion to dismiss CombiMatrix's counterclaim, which was denied on July 27, 2001.

No assurances can be given that we will prevail in the lawsuit or that we can successfully defend ourselves against the counterclaim. We will have to expend considerable financial resources and managerial efforts prosecuting the lawsuit and defending against Dr. Montgomery's and CombiMatrix's counterclaim. We may not prevail in the action, which could have a material adverse effect on us.

The regulatory approval process is expensive, time consuming, uncertain and may prevent us from obtaining required approvals for the commercialization of our products.

We anticipate that the manufacturing, labeling, distribution and marketing of any potential diagnostic products we may develop will be subject to regulation in the U.S. and other countries. These regulations could subject us to several problems such as:

failure to obtain necessary regulatory approvals or clearances for our products on a timely basis, or at all;

delays in receipt of or failure to receive approvals or clearances;

the loss of previously received approvals or clearances;

limitations on intended uses imposed as a condition of approvals or clearances; or

failure to comply with existing or future regulatory requirements.

In the U.S., the Food and Drug Administration, or FDA, regulates as medical devices most test systems, kits, and *in vitro* reagents that are marketed for human diagnostic use. Pursuant to the Federal Food, Drug, and Cosmetic Act, the FDA regulates the preclinical and clinical testing, design, safety, effectiveness, manufacture, labeling, distribution and promotion of medical devices. We will not be able to commence marketing or commercial sales in the U.S. of these products until we receive clearance or approval from the FDA, which can be a lengthy, expensive and uncertain process. We have not applied for FDA or other regulatory approvals with respect to any of our products under

development. We may experience difficulties that could delay or prevent the successful development, introduction and marketing of proposed products. Regulatory clearance or approval of any proposed products may not be granted by the FDA or foreign regulatory authorities on a timely basis, if at all.

Noncompliance with applicable FDA requirements can result in:

- criminal prosecution, civil penalties, other administrative sanctions, or judicially imposed sanctions such as injunctions;
- recall or seizure of products;
- total or partial suspension of production; and
- failure of the government to grant premarket clearance or premarket approval for devices or withdrawal of marketing clearances or approvals once granted.

The FDA also has the authority to request the recall, repair, replacement or refund of the cost of any regulated device that may eventually be manufactured or distributed by us. Any devices manufactured or distributed by us pursuant to FDA clearance or approvals are subject to thorough and continuing regulation by the FDA and certain state agencies, including the California Department of Health Services.

We depend on suppliers for materials that could impair our ability to manufacture our products.

Outside vendors provide key components and raw materials used by us and Hitachi in the manufacture of our products. Although we believe that alternative sources for these components and

raw materials are available, any supply interruption in a limited or sole source component or raw material would harm our and Hitachi's ability to manufacture our products until a new source of supply is identified and qualified. In addition, an uncorrected defect or supplier's variation in a component or raw material, either unknown to us or Hitachi or incompatible with our or Hitachi's manufacturing processes, could harm our or Hitachi's ability to manufacture products. We or Hitachi may not be able to find a sufficient alternative supplier in a reasonable time period, or on commercially reasonable terms, if at all. If we or Hitachi fail to obtain a supplier for the manufacture of components of our potential products, we may be forced to curtail or cease operations.

We may not be able to manufacture products on a commercial scale.

We and Hitachi rely on subcontractors to manufacture the limited quantities of microchips and other components we require for use by and sale to our customers, as well as for internal and collaborative purposes.

Manufacturing, supply and quality control problems may arise as we or Hitachi either alone, together or with subcontractors, attempt to scale up manufacturing procedures. We or Hitachi may not be able to scale-up in a timely manner or at a commercially reasonable cost. Problems could lead to delays or pose a threat to the ultimate commercialization of our products and cause us to fail.

We or Hitachi or any of our contract manufacturers could encounter manufacturing difficulties, including:

- the ability to scale up manufacturing capacity;
- production yields;
- quality control and assurance; or

shortages of components or qualified personnel.

Our manufacturing facilities and those of Hitachi and any other of our contract manufacturers are or will be subject to periodic regulatory inspections by the FDA and other federal, state and international regulatory agencies and these facilities are or may become subject to Quality System Regulation, or QSR, requirements of the FDA. If we, Hitachi or our third-party manufacturers, fail to maintain facilities in accordance with QSR regulations, other international quality standards or other regulatory requirements then the manufacture process could be suspended or terminated which would harm us.

Lead times for materials, components and our products vary significantly which could lead to excess inventory levels as well as shortages of critical components or products if our supply forecasts are inaccurate.

We anticipate that our products will be manufactured based on forecasted demand and will seek to purchase components and materials in anticipation of the actual receipt of purchase orders for our products from customers. Lead times for materials, components and our products vary significantly and depend on factors such as the business practices of each specific supplier and the terms of the particular contracts, as well as the overall market demand for such materials, components and products at any given time. If the forecasts are inaccurate, we could experience fluctuations in excess inventory of our products, or shortages of critical components or products, either of which could cause our business to suffer.

We currently rely on one manufacturer of our Workstation which may delay the manufacture and shipment of our products to customers.

We have signed an exclusive manufacturing agreement with Hitachi to manufacture our NanoChip Workstation and a collaboration agreement to exclusively manufacture certain of our other products to be developed, subject to certain terms and conditions in each agreement. We have retained

exclusive rights pursuant to each agreement to manufacture the NanoChip cartridges. Pursuant to the manufacturing agreement and the collaboration agreement, each party is obligated to provide the other with certain notice periods if such party determines to curtail or terminate the manufacturing relationship. Nevertheless, while alternative manufacturers of our Workstation and other products currently exist, a lengthy process would be required to negotiate and begin work under a manufacturing agreement with a new manufacturer which could disrupt our manufacturing process and harm our business.

Energy shortages may adversely impact our operations.

California has been experiencing shortages of electrical power and other energy sources. This condition has periodically resulted in rolling brownouts, or the temporary and generally unannounced loss of the primary electrical power source. Our laboratory facility in San Diego is powered by electricity. We do not have secondary electrical power sources to mitigate the impacts of temporary or longer-term electrical outages. It is not anticipated that the power shortages will abate soon, and therefore, our operating facilities may experience brown-outs, black-outs, or other consequences of the shortage, and may be subject to usage restrictions or other energy consumption regulations that could adversely impact or disrupt our research and development, manufacturing and other activities.

The increase in the number of our sales and marketing employees may not result in increases in sales or placements of the NanoChip System.

We increased the number of employees in our sales and marketing group from 26 at December 31, 2000 to 34 at June 30, 2001. In addition, in July 2000, we incorporated a subsidiary, Nanogen Europe B.V. in The Netherlands as our European sales office. At June 30, 2001, this office employed 8 European-based sales executives and support personnel in the United Kingdom, Germany, The Netherlands and Denmark.

Developing, training and monitoring this sales and marketing force has required and will further require capital and time expenditures by Nanogen and certain of its employees. The size of our sales and marketing force may not result in increased sales or placements of the NanoChip System nor increased product revenues associated with such sales or placements. Nanogen may be required to increase or decrease the size of this sales and marketing force as deemed necessary and such increases or decreases in staff will require additional capital and time expenditures by Nanogen and its employees.

Failure to expand our international sales as we intend would reduce our ability to become profitable.

We expect that a portion of our sales will be made outside the United States. A successful international effort will require us to develop relationships with international customers and partners. We may not be able to identify, attract or retain suitable international customers and

distribution partners. As a result, we may be unsuccessful in our international expansion efforts. Furthermore, expansion into international markets will require us to continue to establish and expand foreign sales and marketing efforts, hire additional sales and marketing personnel and maintain good relations with our foreign customers and distribution partners.

International operations involve a number of risks not typically present in domestic operations, including:

currency fluctuation risks;

changes in regulatory requirements;

costs and risks of deploying the NanoChip System in foreign countries;

licenses, tariffs and other trade barriers;

political and economic instability;

difficulties in staffing and managing foreign offices;

costs and difficulties in establishing and maintaining foreign distribution partnerships;

potentially adverse tax consequences; and

the burden of complying with a wide variety of complex foreign laws and treaties.

Our international sales and marketing efforts will also be subject to the risks associated with the imposition of legislation and regulations relating to the import or export of high technology products. We cannot predict whether tariffs or restrictions upon the importation or exportation of our products will be implemented by the United States or other countries.

We may lose money when we exchange foreign currency received from international sales into US dollars. A portion of our business is expected to be conducted in currencies other than the U.S. dollar. We recognize foreign currency gains or losses arising from our operations in the period incurred. As a result, currency fluctuations between the US dollar and the currencies in which we do business will cause foreign currency transaction gains and losses. We cannot predict the effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates. We currently do not engage in foreign exchange hedging transactions to manage our foreign currency exposure.

If we fail to manage our growth, our business could be impaired.

We expect to continue to experience growth in the number of our employees and the scope of our operating and financial systems. This growth has resulted in an increase in responsibilities for both existing and new management personnel. Our ability to manage growth effectively will require us to continue to implement and improve our operational, financial and management information systems and to recruit, train, motivate and manage our employees. We may not be able to manage our growth and expansion, which would impair our business.

We may have significant product liability exposure.

We face an inherent business risk of exposure to product liability and other claims in the event that our technologies or products are alleged to have caused harm. These risks are inherent in the testing, manufacturing and marketing of our products. We may not be able to obtain insurance for such potential liability on acceptable terms with adequate coverage, or at reasonable costs. Any potential product liability claims could

exceed the amount of our insurance coverage or may be excluded from coverage under the terms of the policy. Our insurance, once obtained, may not be renewed at a cost and level of coverage comparable to that then in effect.

If we lose our key personnel or are unable to attract and retain additional personnel, we may not be able to pursue collaborations or develop our own products.

We are highly dependent on the principal members of our scientific, manufacturing, marketing and management personnel, the loss of whose services might significantly delay or prevent the achievement of our objectives. We face competition from other companies, academic institutions, government entities and other organizations in attracting and retaining personnel.

Health care reform and restrictions on reimbursement may limit our returns on potential products.

Our ability to earn sufficient returns on our products will depend in part on the extent to which reimbursement for our products and related treatments will be available from:

government health administration authorities;

private health coverage insurers;

managed care organizations; and

other organizations.

If appropriate reimbursement cannot be obtained, we could be prevented from successfully commercializing our potential products.

There are efforts by governmental and third party payors to contain or reduce the costs of health care through various means. We expect that there will continue to be a number of legislative proposals to implement government controls. The announcement of proposals or reforms could impair our ability to raise capital. The adoption of proposals or reforms could impair our business.

Additionally, third party payors are increasingly challenging the price of medical products and services. If purchasers or users of our products are not able to obtain adequate reimbursement for the cost of using our products, they may forego or reduce their use. Significant uncertainty exists as to the reimbursement status of newly approved health care products, and whether adequate third party coverage will be available.

If ethical and other concerns surrounding the use of genetic information become widespread, we may have less demand for our products.

Genetic testing has raised ethical issues regarding confidentiality and the appropriate uses of the resulting information. For these reasons, governmental authorities may call for limits on or regulation of the use of genetic testing or prohibit testing for genetic predisposition to certain conditions, particularly for those that have no known cure. Any of these scenarios could reduce the potential markets for our products, which could seriously harm our business, financial condition and results of operations.

We use hazardous materials in our business. Any claims relating to improper handling, storage or disposal of these materials could be time consuming and costly.

Our research and development processes involve the controlled storage, use and disposal of hazardous materials including biological hazardous materials and radioactive compounds. We are subject to federal, state and local regulations governing the use, manufacture, storage, handling and disposal of materials and waste products. Although we believe that our safety procedures for handling and disposing of these hazardous materials comply with the standards prescribed by law and regulation, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated. In the event of an accident, we could be held liable for any damages that result, and any liability could exceed the limits or fall outside the coverage of our insurance. We may not be able to maintain insurance on acceptable terms, or at all. We could be required to incur significant costs to comply with current or future environmental laws and regulations.

Our stock price could continue to be highly volatile and our stockholders may not be able to resell their shares at or above the price they paid for them.

The market price of our common stock, like that of many other life sciences companies, has been highly volatile and is likely to continue to be highly volatile. The following factors, among others, could have a significant impact on the market price of our common stock:

- the results of our premarket studies and clinical trials or those of our collaborators or competitors or for DNA testing in general;
- evidence of the safety or efficacy of our potential products or the products of our competitors;
- the announcement by us or our competitors of technological innovations or new products;
- the announcement by us of acquisitions by customers of our NanoChip System or our other products;

- announcements or developments relating to our litigation against Combimatrix and Dr. Montgomery;
- developments concerning our patents or other proprietary rights or those of our competitors, including other litigation or patent office proceedings;
- loss of key personnel or the increase or decrease in size of our sales and marketing staff;
- governmental regulatory actions or the failure to gain necessary clearances or approvals;
- the ability to obtain necessary licenses;
- changes or announcements in reimbursement policies;
- developments with our subsidiaries and collaborators;
- changes in or announcements relating to acquisition programs for our products, including the expiration or continuation of our development site agreements;
- period-to-period fluctuations in sales, inventories and our operating results;
- market conditions for life science stocks in general; and
- changes in estimates of our performance by securities analysts.

Our anti-takeover provisions could discourage potential takeover attempts and make attempts by stockholders to change management more difficult.

The approval of two-thirds of our voting stock is required to approve some transactions and to take some stockholder actions, including the calling of a special meeting of stockholders and the amendment of any of the anti-takeover provisions contained in our certificate of incorporation. Further, pursuant to the terms of our stockholder rights plan adopted in November 1998, as amended, we have distributed a dividend of one right for each outstanding share of common stock. These rights will cause substantial dilution to the ownership of a person or group that attempts to acquire us on terms not approved by our board of directors and may have the effect of deterring hostile takeover attempts.

If we make any acquisitions, we will incur a variety of costs and may never realize the anticipated benefits.

If appropriate opportunities become available, we may attempt to acquire businesses, technologies, services or products that we believe are a strategic fit with our business. We currently have no commitments or agreements with respect to any material acquisitions. If we do undertake any transaction of this sort, the process of integrating an acquired business, technology, service or product may result in operating difficulties and expenditures and may absorb significant management attention that would otherwise be available for ongoing development of our business. Moreover, we may never realize the anticipated benefits of any acquisition. Future acquisitions could result in potentially dilutive issuances of equity securities, the incurrence of debt, contingent liabilities and/or amortization expenses related to certain intangible assets, which could adversely affect our results of operations and financial condition.

USE OF PROCEEDS

We will not receive any proceeds from the sale by the selling securityholders of the common stock.

SELLING SECURITYHOLDERS

We are registering the shares of common stock in order to permit the selling securityholders to offer the shares of common stock for resale from time to time. The selling securityholders were all involved in litigation with us. The shares of common stock we are registering were issued to the selling securityholders in connection with the settlement of the litigation.

The table below lists the selling securityholders and other information regarding the beneficial ownership of the common stock by each of the selling securityholders. The second column lists the shares of common stock being offered by this prospectus by each selling securityholder, and the third column assumes the sale of all of the shares offered by each selling securityholder. The selling securityholders may sell all, some or none of their shares in this offering. See "Plan of Distribution."

Name of Selling Security Holder	Common Shares Beneficially Owned Prior to Offering	Common Stock Offered By This Prospectus	% of Common Stock Owned After Sale
Motorola, Inc. 4088 Commercial Avenue Northbrook, IL 60062	0	208,333	*
Genometrix, Inc. 2700 Research Forest Drive The Woodlands, Texas 77381	0	104,167	*
Massachusetts Institute of Technology 77 Massachusetts Avenue Cambridge, MA 02139	0	29,833	*
Barry E. Burke 17 Shelburn Road Lexington, MA 02421	0	1,479	*
Chang-Lee Chen 19 Pratt's Mill Road Sudbury, MA 01776	0	1,479	*

Name of Selling Security Holder	Common Shares Beneficially Owned Prior to Offering	Common Stock Offered By This Prospectus	% of Common Stock Owned After Sale
Daniel J. Ehrlich 7 Park Ave., Unit 2 Somerville, MA 02144	0	1,479	*
Mark A. Hollis 405 Waltham Street Lexington, MA 02421	0	1,479	*
Bernard B. Kosicki 39 Fort Pond Road Acton, MA 01720	0	1,479	*
Richard H. Mathews 30 Wildes Road Chelmsford, MA	0	1,479	*

R. Allen Murphy 411 Hill Road Boxboro, MA 01719	0	1,479	*
Dennis D. Rathman 42 East Bluff Road Ashland, MA 01721	0	1,479	*
Baylor College of Medicine One Baylor Plaza Houston, TX 77030	0	17,969	*
Rajender Singh Varma 8294 Millview Drive Cincinnati, OH 45249	0	1,063	*
Michael E. Hogan 15087 Old Conroe Road Conroe, TX 77384	0	12,219	*
Houston Advanced Research Center 4800 Research Forest Drive The Woodlands, TX 77381	0	15,625	*
Mitch D. Eggers (beginning Aug. 14, 2001) 3405 Calle Del Sur Carlsbad, CA 92009	0	15,625	*

* Less than one percent

PLAN OF DISTRIBUTION

We will not receive any of the proceeds from the sale by the selling securityholders 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 securityholders may sell all or a portion of the 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 common stock is sold through underwriters or broker-dealers, the selling securityholder will be responsible for underwriting discounts or commissions or agent's commissions. The common stock may be sold 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,

(1) on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale,

(2) in the over-the-counter market,

(3) in transactions otherwise than on these exchanges or systems or in the over-the-counter market,

(4) through the writing of options, whether such options are listed on an options exchange or otherwise, or

(5) through the settlement of short sales.

If the selling securityholders effect such transactions by selling shares of common stock to or through underwriters, broker-dealers or agents, such underwriters, brokers-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling securityholders 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 (which discounts, concessions or commissions as to particular underwriters, brokers-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the common stock or otherwise, the selling securityholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the common stock in the course of hedging in positions they assume. The selling securityholders may also sell shares of common stock short and deliver shares of common stock covered by this prospectus to close out short positions, provided that the short sale is made after the registration statement is declared effective and a copy of this prospectus is delivered in connection with the short sale. The selling securityholder may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares.

The selling securityholders may 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 pursuant to the prospectus. The selling securityholders 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 the prospectus.

The selling securityholders and any broker-dealer participating in the distribution of the shares of common stock may be deemed to be "underwriters" within the meaning of the Securities Act, and any commissions paid, or any discounts or concessions allowed to any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of common stock 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 securityholder 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 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.

There can be no assurance that any selling securityholder 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.

The selling securityholders 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, 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 securityholders 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 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 common stock purchase agreement estimated to be $25,040 in total, including, without limitation, Commission filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, that the selling securityholders will pay all underwriting discounts and selling commissions, if any. In connection with sales made pursuant to this prospectus, we will indemnify the selling securityholders against liabilities, including some liabilities under the Securities Act, in accordance with the common stock purchase agreement or the selling securityholders will be entitled to contribution. We will be indemnified by the selling securityholders against civil liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the selling securityholders for use in this prospectus, in accordance with the related common stock purchase agreement or we will be entitled to contribution.

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 issuance of the shares of common stock being offered by this prospectus will be passed upon for us by Wilson Sonsini Goodrich & Rosati, Professional Corporation.

EXPERTS

Ernst & Young LLP, independent auditors, have audited our consolidated financial statements included in our Annual Report on Form 10-K for the three years in the period ended December 31, 2000, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our consolidated financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). In accordance with the Exchange Act, Nanogen files reports, proxy statements and other information with the Securities and Exchange Commission (the "Commission"). Such reports, proxy statements and other information filed by Nanogen may be inspected and copied at

the public reference facilities maintained by the Commission at 450 Fifth Street, N.W., Room 1024, Washington, D.C. 20549 and at the Commission's following Regional Offices': New York Regional Office, 7 World Trade Center, New York, New York, 10048; and Chicago Regional Office, Citicorp Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661-2511. Copies of such material also may be obtained at prescribed rates from the Public Reference Branch of the Commission at 450 Fifth Street, N.W., Washington, D.C. 20549-1004. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Nanogen's common stock is listed on The Nasdaq Stock Market's National Market System and such reports, proxy statements and other information concerning Nanogen may be inspected at the offices of The Nasdaq Stock Market, 1735 K Street, N.W., Washington, D.C. 20016-1506. The Commission maintains a web site at http://www.sec.gov that contains reports, proxy and information statements and other information regarding registrants that file electronically with the Commission.

The SEC allows us to "incorporate by reference" the information we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and information we later file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act until this offering is complete:

Our Annual Report on Form 10-K for the year ended December 31, 2000 (file No. 000-23541);

Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2001 and for the quarter ended June 30, 2001;

The description of our common stock which is contained in our Registration Statement on Form 8-A filed with the Commission on April 7, 1998; and

The description of our Preferred Stock Purchase Rights for Series A Participating Preferred Stock, par value $0.001 per share, contained in our Registration Statement on Form 8-A filed November 24, 1998.

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

Nanogen, Inc.
Attn: General Counsel
10398 Pacific Center Court
San Diego, California 92121
(858) 410-4600

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 Nanogen in connection with the sale of common stock being registered. All amounts are estimates except the SEC registration fee.

	Amount to be Paid
SEC registration fee	$ 665
Legal fees and expenses	15,000
Accounting fees and expenses	5,000
Miscellaneous fees and expenses	4,375
Total	$ 25,040

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933. Our amended and restated certificate of incorporation, as amended, and our amended and restated bylaws provide for indemnification of our directors, officers, employees and other agents to the maximum extent permitted by Delaware law. In addition, we have entered into indemnification agreements with our officers and directors.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

Exhibit Number	
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation, regarding legality of the securities being registered.
10.1	Common Stock Purchase Agreement dated as of August 16, 2001 among Nanogen, Inc., Motorola, Inc. and the other purchasers named therein.
23.1	Consent of Ernst & Young LLP, Independent Auditors.
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (see Exhibit 5.1).

ITEM 17. UNDERTAKINGS

(a)

We undertake:

(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 of 1933;

(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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent 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;

(2)

That, for the purpose of determining any liability under the Securities Act of 1933, 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.

(b)

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Company's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered thereby, and the offering of such securities at the time shall be deemed to be the initial bona fide offering thereof.

(c)

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act, and is, therefore, unenforceable. If a claim for indemnification against such liabilities (other than 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 Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant, Nanogen, Inc., 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 on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California, on the 20th day of August, 2001.

NANOGEN, INC.

By: /s/ HOWARD C. BIRNDORF

Howard C. Birndorf
Chairman of the Board

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Kiernan T. Gallahue and Vera P. Pardee and each of them, acting individually, as his attorney-in-fact, with full power of substitution, for him and in any and all capacities, to sign any and all amendments to this Registration Statement on Form S-3 (including post-effective amendments) and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorney to any and all amendments to the Registration Statement on Form S-3.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-3 has been signed by the following persons in the capacities and on the dates indicated.

Name	Title	Date
/s/ HOWARD C. BIRNDORF Howard C. Birndorf	Chairman of the Board (Principal Executive Officer)	August 17, 2001
/s/ GERARD A. WILLS Gerard A. Wills	Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	August 17, 2001
/s/ V. RANDY WHITE V. Randy White	Chief Executive Officer and Director	August 17, 2001
/s/ VAL BUONAIUTO	Director	August 17, 2001

Name	Title	Date
Val Buonaiuto	II 3	
Cam L. Garner	Director	
Regina Herzlinger	Director	
/s/ DAVID G. LUDVIGSON David G. Ludvigson	Director	August 17, 2001
Stelios B. Papadopoulos	Director II 4	

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