

NORTHFIELD LABORATORIES INC /DE/

Form S-3

September 01, 2006

As filed with the Securities and Exchange Commission on September 1, 2006

Registration No. 333-

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

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

NORTHFIELD LABORATORIES INC.

(Exact Name of Registrant as Specified in Its Charter)

DELAWARE
(State or Other Jurisdiction of
Incorporation or Organization)

36-3378733
(I.R.S. Employer
Identification Number)

1560 SHERMAN AVENUE
SUITE 1000
EVANSTON, ILLINOIS 60201-4800
(847) 864-3500

(Address, Including Zip Code, and Telephone Number, Including Area Code,
of Registrant's Principal Executive Offices)

John J. Hinds
Vice President Finance
Northfield Laboratories Inc.
1560 Sherman Avenue
Suite 1000
Evanston, Illinois 60201-4800
(847) 864-3500

(Name, Address, Including Zip Code, and Telephone Number,
Including Area Code, of Agent For Service)

Copies to:
Craig A. Roeder, Esq.
Baker & McKenzie LLP
One Prudential Plaza
130 East Randolph Drive
Chicago, Illinois 60601
(312) 861-8000

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement as determined by market conditions and other factors.

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. o

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. o

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(c) under the Securities Act, check the following box. o

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. o

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered	Proposed maximum offering price per unit	Proposed maximum offering price(1)(2)	Registration fee
Common Stock, par value \$.01 per share(3)				
Preferred Stock, par value \$.01 per share (3)				
Depositary Shares(3)				
Stock Purchase Contracts				
Warrants(4)				
Debt Securities				
Total(5)		100%(3)	\$100,000,000(6)	\$10,700(7)

- (1) Or (i) if any debt securities are issued at an original issue discount, such greater principal amount as will result in an aggregate initial offering price equal to the amount to be registered or (ii) if any debt securities are issued with a principal amount denominated in a foreign currency or composite currency, such principal amount as will result in an aggregate initial offering price equivalent thereto in United States dollars at the time of initial offering.

- (2) These figures are estimates made solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, exclusive of accrued interest, if any, on the debt securities.
- (3) In addition to any securities that may be registered hereunder, we are also registering an indeterminate number of shares of common stock, preferred stock, depositary shares and debt securities as may be issued upon conversion, exercise or exchange of the securities issued directly hereunder. No separate consideration will be received for any shares of common stock, preferred stock, depositary shares or debt securities so issued upon conversion, exercise or exchange.
- (4)

Includes warrants to purchase common stock, preferred stock, depositary shares and debt securities.

(5) We will determine the proposed maximum offering price per unit in connection with the issuance of the securities.

(6) The securities registered hereunder may be sold separately or as units with other securities registered hereby.

(7) In accordance with Rule 457(p), the Registrant is offsetting against the applicable registration fee \$2,636 paid by the Registrant with respect to securities previously registered pursuant to Registration Statement No. 333-121622 filed on December 23, 2004, which were not sold

thereunder.

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 this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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 is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion. Dated September 1, 2006.

Prospectus

\$100,000,000

NORTHFIELD LABORATORIES INC.

Common Stock

Preferred Stock

Depository Shares

Stock Purchase Contracts

Warrants

Debt Securities

We will provide you with the specific terms of the particular securities being offered in supplements to this prospectus. You should read this prospectus and each related supplement carefully before you invest. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

Our common stock is quoted on the Nasdaq Global Market under the symbol NFLD. The last reported sale price of our common stock on August 31, 2006 was \$10.84 per share.

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 September 1, 2006.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	1
WHERE YOU CAN FIND MORE INFORMATION	1
FORWARD-LOOKING INFORMATION	2
OUR BUSINESS	3
USE OF PROCEEDS	3
RATIO OF EARNINGS TO FIXED CHARGES AND PREFERENCE DIVIDENDS	3
DESCRIPTION OF THE SECURITIES WE MAY OFFER	3
PLAN OF DISTRIBUTION	6
LEGAL MATTERS	6
EXPERTS	6
PART II. INFORMATION NOT REQUIRED IN PROSPECTUS	II-1

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a shelf registration process. Using this process, we may offer the securities described in this prospectus in one or more offerings with a total initial offering price of up to \$100,000,000 or an equivalent amount in one or more foreign currencies. We may sell these securities separately or in units. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide you a prospectus supplement that will contain information about the specific terms of that particular offering. The prospectus supplement may also add, update or change information contained in this prospectus. To obtain additional information that may be important to you, you should read the exhibits filed by us with the registration statement of which this prospectus is a part or our other filings with the SEC. You also should read this prospectus and any prospectus supplement together with the additional information described below under Where You Can Find More Information.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities we may offer pursuant to this prospectus. This prospectus, which is part of the registration statement, omits certain information, exhibits, schedules and undertakings set forth in the registration statement. For further information pertaining to us and the securities we may offer, reference is made to such registration statement and the exhibits and schedules to the registration statement. Statements contained in this prospectus as to the contents or provisions of any documents referred to in this prospectus are not necessarily complete, and in each instance where a copy of the document has been filed as an exhibit to the registration statement, reference is made to the exhibit for a more complete description of the matters involved.

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You can read and copy any materials we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You can obtain information about the operations of the SEC Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains information we file electronically with the SEC, which you can access over the Internet at www.sec.gov. You may also access the information we file electronically with the SEC through our web site at www.northfieldlabs.com.

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 you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede some of this information. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act), until we sell all of the securities covered by this prospectus. The documents we incorporate by reference are:

- our Current Report on Form 8-K/A filed with the SEC on August 18, 2006;
- our Annual Report on Form 10-K for the year ended May 31, 2006; and

- the description of our common stock contained in our Registration Statement on Form 8-A, Registration No. 33-76856, filed with the SEC on March 25, 1994, including any amendments or reports filed for the purpose of updating this description.

Information in Current Reports on Form 8-K furnished to the SEC, including under Item 2.02 or 7.01 of Form 8-K prior, on or subsequent to the date hereof is not being and will not be incorporated herein by reference.

You may request a copy of these filings (other than an exhibit to the filings unless we have specifically incorporated that exhibit by reference into the filing), at no cost, by writing or telephoning us at the following address:

Northfield Laboratories Inc.
1560 Sherman Avenue
Suite 1000
Evanston, Illinois 60201-4800
(847) 864-3500

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. We may only use this prospectus to sell securities if it is accompanied by a prospectus supplement. We are only offering the securities in states where the offer is 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.

FORWARD-LOOKING INFORMATION

This prospectus and the documents we incorporate by reference contain forward-looking statements concerning, among other things, our prospects, clinical and regulatory developments affecting our potential product and our business strategies. These forward-looking statements are identified by the use of such terms as *intends*, *expects*, *plans*, *estimates*, *anticipates*, *forecasts*, *should* and *believes* and are in certain cases followed by a cross reference to *Risk Factors*.

These forward-looking statements involve risks and uncertainties. Actual results may differ materially from those predicted by the forward-looking statements because of various factors and possible events, including those discussed under *Risk Factors*. Because these forward-looking statements involve risks and uncertainties, actual results may differ significantly from those predicted in these forward-looking statements. You should not place undue weight on these statements. These statements speak only as of the date of this prospectus or, in the case of any document incorporated by reference, the date of that document.

All subsequent written and oral forward-looking statements attributable to Northfield or any person acting on our behalf are qualified by the cautionary statements in this section. We do not undertake any obligation to update or publicly release any revisions to forward-looking statements to reflect events, circumstances or changes in expectations after the time such statement is made.

OUR BUSINESS

Northfield Laboratories Inc. is a leader in developing a hemoglobin-based oxygen-carrying red blood cell substitute for the treatment of urgent, large volume blood loss in trauma and resultant surgical settings. The initial indication we are seeking for our product, PolyHeme[®], is the early treatment of urgent, life-threatening blood loss following trauma when donated blood may not be immediately available. We believe that this indication addresses a critical unmet medical need, since some trauma patients bleed to death before they have access to blood.

Our principal executive offices are located at 1560 Sherman Avenue, Suite 1000, Evanston, Illinois 60201-4800, and our telephone number is (847) 864-3500. We maintain an Internet Web site at www.northfieldlabs.com. We make available free of charge on our Web site our Form 10-Ks, Form 10-Qs, Form 8-Ks and other documents that we file with or furnish to the SEC as soon as reasonably practicable after filing with the SEC. The information contained on our website, or on other websites linked to our website, is not a part of this document.

USE OF PROCEEDS

Unless we inform you otherwise in the prospectus supplement, we intend to use the proceeds from the sale of securities offered by us for general corporate purposes. Our specific use of the proceeds from the sale of securities offered by us will be described in the prospectus supplement that will accompany this prospectus. Pending any specific application, we may initially invest funds in short-term marketable securities.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERENCE DIVIDENDS

We reported no revenues or earnings during our last five fiscal years. During this period, we did not have any debt or related interest expense and were not a party to any capital lease arrangements. No preference securities were outstanding during this period.

DESCRIPTION OF THE SECURITIES WE MAY OFFER

We may offer up to \$100,000,000 of common stock, preferred stock, depositary shares, stock purchase contracts, warrants and debt securities, in one or more offerings and in any combination. A prospectus supplement, which we will provide each time we offer securities, will describe the specific amounts, prices and terms of these securities.

We may sell the securities to or through underwriters, dealers or agents or directly to purchasers. We, as well as any persons acting on our behalf, reserve the sole right to accept and to reject in whole or in part any proposed purchase of securities. Each prospectus supplement will set forth the names of any underwriters, dealers or agents involved in the sale of securities described in that prospectus supplement and any applicable fee, commission or discount arrangements with them.

COMMON STOCK

We may issue shares of our common stock either alone or underlying other registered securities convertible into or exercisable or exchangeable for shares of our common stock. Holders of our common stock are entitled to receive dividends declared by our board of directors out of funds legally available for the payment of dividends, subject to rights, if any, of preferred stock holders. Currently, we do not pay a dividend. The holders of our common stock are entitled to one vote per share and are not entitled to cumulative voting rights for the election of our directors. The holders of our common stock have no preemptive rights.

PREFERRED STOCK AND DEPOSITARY SHARES

We may issue preferred stock, in one or more series, alone or underlying other registered securities convertible into or exercisable or exchangeable for shares of our preferred stock. Our board of directors or a committee designated by the board will determine the dividend, voting and conversion rights and other provisions of the preferred stock at the time of sale. Each series of preferred stock will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of liquidation, dissolution or the winding up of Northfield, voting rights and conversion rights. We may also issue fractional shares of preferred stock that will be represented by depositary shares and depositary receipts. Each particular series of depositary shares will be more fully described in the prospectus supplement that will accompany this prospectus.

WARRANTS

We may issue warrants for the purchase of common stock, preferred stock, depositary shares or debt securities. We may issue warrants independently or together with other securities. The specific terms of any warrants will be described in the prospectus supplement that will accompany this prospectus.

STOCK PURCHASE CONTRACTS

We may issue stock purchase contracts, including contracts obligating holders to purchase from us, and us to sell to the holders, a specified number of securities, at a future date or dates, or similar contracts issued on a prepaid basis, which in each case are referred to herein as stock purchase contracts. The price per share of securities and the number of shares of securities may be fixed at the time the stock purchase contracts are issued or may be determined by reference to a specific formula set forth in the stock purchase contracts. The stock purchase contracts will require either the stock purchase price be paid at the time the stock purchase contracts are issued or that payment be made at a specified future date. The stock purchase contracts also may require us to make periodic payments to the holders of the stock purchase contracts or vice versa, and such payments may be unsecured or refunded on some basis. The specific terms of any stock purchase contracts will be described in the prospectus supplement that will accompany this prospectus.

DEBT SECURITIES

General

We may issue secured or unsecured obligations in the form of either senior or subordinated debt. The senior debt securities and the subordinated debt securities are together referred to in this prospectus as debt securities. The senior unsecured debt securities will have the same rank as all of our other unsecured unsubordinated debt. The subordinated debt securities generally will be entitled to payment only after payment of our senior debt. Senior debt generally includes all debt for money borrowed by us, except debt that is stated in the instrument governing the terms of that debt to be not senior to, or to have the same rank in right of payment as, or to be expressly junior to, the senior debt securities. We may issue debt securities that are convertible into or exchangeable for shares of common stock or other securities or property.

The senior and subordinated debt securities will be issued under separate indentures between a trustee and us. We have summarized the general features of the debt securities to be governed by the indentures. These indentures have been filed as exhibits or will be incorporated by reference into the registration statement that we have filed with the SEC of which this prospectus is a part. We encourage you to read these indentures. Instructions on how you can get copies of these documents are provided above in [Where You Can Find More Information](#).

General Indenture Provisions that Apply to Senior and Subordinated Debt

The following general indenture provisions will apply to any senior and subordinated debt securities:

- each indenture allows debt to be issued in series with terms particular to each series;
- neither indenture limits the amount of debt that we may issue or generally provides holders any protection should we engage in a highly leveraged transaction;

- the indentures allow us to merge or to consolidate with another U.S. entity or convey, transfer or lease our properties and assets substantially as an entirety to another U.S. entity, as long as certain conditions are met. If these events occur, the other company will be required to assume our responsibilities on the debt securities, and we will be released from all liabilities and obligations, except in the case of a lease;
- the indentures provide that the trustee and we may generally amend the indenture with the consent of holders of a majority of the total principal amount of the debt outstanding in any series to change certain of our obligations or your rights concerning the debt. However, to change the payment of principal, interest or adversely affect the right to convert or certain matters, every holder in that series must consent; and
- we may discharge the indentures and defease restrictive covenants by depositing sufficient funds with the trustee to pay the obligations when due, as long as certain conditions are met. The trustee would pay all amounts due to you on the debt from the deposited funds.

Events of Default

Each of the following is an event of default under the indentures:

- principal not paid when due;
- any sinking fund payment not made when due;
- failure to pay interest for 30 days;
- covenants not performed for 90 days after notice; and
- certain events of bankruptcy, insolvency or reorganization of Northfield.

A prospectus supplement may describe deletions of, or changes or additions to, the events of default.

Remedies

Upon an event of default, other than a bankruptcy, insolvency or reorganization, the trustee or holders of 25 percent of the principal amount outstanding in a series may declare the outstanding principal, plus accrued interest, if any, immediately payable. However, the holders of a majority in principal amount may, under certain circumstances, rescind this action.

Indenture Provisions that Apply Only to the Subordinated Debt Securities

The subordinated indenture provides that the subordinated debt securities will be subordinated to all senior debt as defined in the subordinated indenture.

PLAN OF DISTRIBUTION

We may sell the offered securities through agents, through underwriters or dealers, directly to one or more purchasers or through a combination of any of these methods of sale. We will identify the specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation, in a prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities we may offer will be passed upon for us by Baker & McKenzie LLP, Chicago, Illinois. If securities are distributed in an underwritten offering, the underwriters will be advised by their own legal counsel with respect to any offering.

EXPERTS

The financial statements of Northfield Laboratories Inc. as of May 31, 2006 and 2005, and for each of the years in the three-year period ended May 31, 2006, and for the cumulative period from June 19, 1985 (inception) and management's assessment of the effectiveness of internal control over financial reporting as of May 31, 2006, have been incorporated by reference herein and in the registration statement in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The audit report covering the May 31, 2006, financial statements refers to a change in accounting due to the adoption of the provisions of Statement of Financial Accounting Standards No. 143, Accounting for Asset Retirement Obligations.

PART II.

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the expenses in connection with the issuance and distribution of the securities being registered, other than underwriting discounts and commissions. All of the amounts shown are estimated, except the SEC registration fee.

SEC registration fee (1)	\$ 10,700
Legal fees and expenses	50,000
Costs of printing and engraving	7,500
Fees of accountants	5,000
Miscellaneous	10,000
	\$ 83,200

(1) In accordance with Rule 457(p), we are offsetting against the applicable registration fee \$2,636 paid by us with respect to securities previously registered pursuant to Registration Statement No. 333-121622 filed on December 23, 2004, which were not sold thereunder.

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation may indemnify any person who was or is a party to or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceedings, had no reasonable cause to believe his conduct was unlawful, except that in a suit by or in the right of the corporation no indemnification may be made in respect of any claim, issue or matter as to which such person has been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery of the State of Delaware or the court

in which such action or suit was brought has determined upon application that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity or such expenses deemed proper by the court.

Our certificate of incorporation provides that we must indemnify our directors, officers, employees and agents to the fullest extent permitted by Delaware law. Our certificate of incorporation additionally requires us to advance expenses incurred by our directors, officers, employees and agents to the fullest extent permitted by Delaware law in connection with any matter with respect to which such persons may be entitled to seek indemnification.

Our certificate of incorporation also provides that, to the fullest extent permitted by Delaware law, our directors will not be liable for monetary damages for breach of the directors' fiduciary duty of care to us or our stockholders. This provision does not eliminate the duty of care and, in appropriate circumstances, equitable remedies such as an injunction or other forms of non-monetary relief will remain available under Delaware law. Each director will also continue to be subject to liability for breach of the director's duty of loyalty to us or our stockholders, for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law, for unlawful distributions to stockholders and for any transaction from which the director derives an improper personal benefit. In addition, this provision does not affect a director's responsibilities under any other laws, such as the federal securities laws or state or federal environmental laws.

We are a party to separate indemnification agreements with each of our directors and senior executive officers. These agreements require us to indemnify our directors and executive officers to the maximum extent permitted by law and to advance all expenses they may reasonably incur in connection with the defense of any claim or proceeding in which they may be involved as a party or witness. The agreements specify certain procedures and assumptions applicable in connection with requests for indemnification and advancement of expenses and also require us to continue to maintain directors and officers and fiduciary liability insurance for a six-year period following any change in control transaction. The rights provided to our directors and executive officers under their

indemnification agreements are in addition to any other rights such individuals may have under our certificate of incorporation or bylaws, applicable law or otherwise.

We have purchased an insurance policy which insures our directors and officers against certain liabilities incurred by them in the discharge of their official functions, except for liabilities resulting from their own malfeasance. The insurance policy provides coverage in the amount of \$15,000,000 for annual aggregate claims.

ITEM 16. EXHIBITS.

The exhibits listed below are filed or incorporated by reference as part of this registration statement.

NUMBER	DESCRIPTION
1.1*	Form of Underwriting Agreement.
4.1**	Form of Senior Indenture.
4.2**	Form of Subordinated Indenture.
4.3**	Form of Senior Debt Security (included as Exhibit 4.1).
4.4**	Form of Subordinated Debt Security (included as Exhibit 4.2).
4.5*	Form of Certificate of Amendment.
4.6*	Form of Preferred Stock Certificate.
4.7*	Form of Deposit Agreement.
4.8*	Form of Depositary Receipt (included in Exhibit 4.7).
4.9*	Form of Warrant Agreement.
4.10*	Form of Warrant Certificate.
5.1**	Opinion of Baker & McKenzie LLP.
23.1**	Consent of Baker & McKenzie LLP (contained in their opinion filed as Exhibit 5.1 to this Registration Statement).
23.2**	Consent of KPMG LLP.
25.1*	Form T-1 Statement of Eligibility of Trustee from Senior Indenture under the Trust Indenture Act of 1939.
25.2*	Form T-1 Statement of Eligibility of Trustee from Subordinated Indenture under the Trust Indenture Act of 1939.

* To be filed by amendment or as an exhibit to a report pursuant to

Section 13(a) or
15(d) of the
Exchange Act.

** Filed herewith.

II-2

ITEM 17. UNDERTAKINGS.

The 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:
 - (a) to include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (b) 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;
 - (c) 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 Paragraphs (1)(a), (1)(b) and (1)(c) of this section do not apply if the registration statement is on Form S-3 and 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 of 1933, as amended, to any purchaser:
 - (a) 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
 - (b) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of the 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 of 1933 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 the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means

of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

II-3

- (a) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
 - (b) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (c) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (d) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) 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 therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (7) 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 foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.
- (8) The undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.
- (9) The undersigned registrant hereby undertakes that:
- (a) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
 - (b) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus 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.
- (10) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, 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 Evanston, State of Illinois, on the 1st day of September, 2006.

NORTHFIELD LABORATORIES INC.

By: /s/ Steven A. Gould, M.D.

Steven A. Gould, M.D.
Chairman of the Board and Chief Executive Officer

We, the undersigned officers and directors of Northfield Laboratories Inc., hereby, severally constitute and appoint each of Steven A. Gould, M.D. and Jack J. Kogut our true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and registration statements filed pursuant to Rule 462 under the Securities Act of 1933, and to file the same with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto such attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that such attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

SIGNATURE	TITLE	DATE
/s/ Steven A. Gould, M.D. Steven A. Gould, M.D.	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	September 1, 2006
/s/ John J. Hinds John J. Hinds	Vice President Finance (Principal Financial and Accounting Officer)	September 1, 2006
/s/ John F. Bierbaum John F. Bierbaum	Director	September 1, 2006
/s/ Bruce S. Chelberg Bruce S. Chelberg	Director	September 1, 2006
/s/ Alan L. Heller Alan L. Heller	Director	September 1, 2006
/s/ Paul M. Ness, M.D. Paul M. Ness, M.D.	Director	September 1, 2006

EXHIBIT INDEX

NUMBER	DESCRIPTION
1.1*	Form of Underwriting Agreement.
4.1**	Form of Senior Indenture.
4.2**	Form of Subordinated Indenture.
4.3**	Form of Senior Debt Security (included as Exhibit 4.1).
4.4**	Form of Subordinated Debt Security (included as Exhibit 4.2).
4.5*	Form of Certificate of Amendment.
4.6*	Form of Preferred Stock Certificate.
4.7*	Form of Deposit Agreement.
4.8*	Form of Depositary Receipt (included in Exhibit 4.7).
4.9*	Form of Warrant Agreement.
4.10*	Form of Warrant Certificate.
5.1**	Opinion of Baker & McKenzie LLP.
23.1**	Consent of Baker & McKenzie LLP (contained in their opinion filed as Exhibit 5.1 to this Registration Statement).
23.2**	Consent of KPMG LLP.
25.1*	Form T-1 Statement of Eligibility of Trustee from Senior Indenture under the Trust Indenture Act of 1939.
25.2*	Form T-1 Statement of Eligibility of Trustee from Subordinated Indenture under the Trust Indenture Act of 1939.

* To be filed by amendment or as an exhibit to a report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934.

** Filed herewith.