

ANNUAL MEETING OF STOCKHOLDERS OF REGENERX BIOPHARMACEUTICALS, INC.

September 10, 2014

GO GREEN

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NOTICE OF INTERNET AVAILABILITY OF PROXY MATERIAL:

The Company's Proxy Statement for the 2014 Annual Meeting of Stockholders and Annual Report on Form 10-K for the year ended December 31, 2013 are available at:
<http://regenerxbiopharmaceuticals.investorroom.com>

Please sign, date and mail
your proxy card in the
envelope provided as soon
as possible.

↓ Please detach along perforated line and mail in the envelope provided. ↓

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**THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" PROPOSALS 1, 2, 3, AND 5 AND FOR ONE YEAR ON ITEM 4.
PLEASE SIGN, DATE AND RETURN PROMPTLY IN THE ENCLOSED ENVELOPE. PLEASE MARK YOUR VOTE IN BLUE OR BLACK INK AS SHOWN HERE**

1. Proposal to elect five directors to the Board of Directors.

- FOR ALL NOMINEES
- WITHHOLD AUTHORITY FOR ALL NOMINEES
- FOR ALL EXCEPT (See instructions below)

- NOMINEES:**
- Allan L. Goldstein
 - J. J. Finkelstein
 - Joseph C. McNay
 - Mauro Bove
 - R. Don Elsey

INSTRUCTIONS: To withhold authority to vote for any individual nominee(s), mark "FOR ALL EXCEPT" and fill in the circle next to each nominee you wish to withhold, as shown here: ●

2. To approve an amendment to the 2010 Equity Incentive Plan.

FOR AGAINST ABSTAIN

3. To approve, on a non-binding and advisory basis, named executive officer compensation.

FOR AGAINST ABSTAIN

4. To recommend, on a non-binding and advisory basis, the frequency of the vote on named executive officer compensation.

1 year 2 years 3 years ABSTAIN

5. Proposal to ratify the appointment of CohnReznick LLP as the independent registered public accounting firm of the Company for fiscal 2014.

FOR AGAINST ABSTAIN

NOTE: In their discretion, the proxies are authorized to vote on any other business properly brought before the meeting or any adjournment or postponement thereof.

THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS GIVEN, WILL BE VOTED FOR PROPOSALS 1, 2, 3, and 5 and for ONE YEAR on Item 4.

To change the address on your account, please check the box at right and indicate your new address in the address space above. Please note that changes to the registered name(s) on the account may not be submitted via this method.

Signature of Stockholder Date: Signature of Stockholder Date:

Note: Please sign exactly as your name or names appear on this Proxy. When shares are held jointly, each holder should sign. When signing as executor, administrator, attorney, trustee or guardian, please give full title as such. If the signer is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If signer is a partnership, please sign in partnership name by authorized person.

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PROXY VOTING INSTRUCTIONS

INTERNET - Access "www.voteproxy.com" and follow the on-screen instructions or scan the QR code with your smartphone. Have your proxy card available when you access the web page.



TELEPHONE - Call toll-free **1-800-PROXIES** (1-800-776-9437) in the United States or **1-718-921-8500** from foreign countries from any touch-tone telephone and follow the instructions. Have your proxy card available when you call.

Vote online/phone until 11:59 PM EST the day before the meeting.

MAIL - Sign, date and mail your proxy card in the envelope provided as soon as possible.

IN PERSON - You may vote your shares in person by attending the Annual Meeting.

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COMPANY NUMBER	
ACCOUNT NUMBER	

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▼ Please detach along perforated line and mail in the envelope provided IF you are not voting via telephone or the Internet. ▼

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PLEASE SIGN, DATE AND RETURN PROMPTLY IN THE ENCLOSED ENVELOPE. PLEASE MARK YOUR VOTE IN BLUE OR BLACK INK AS SHOWN HERE

1. Proposal to elect five directors to the Board of Directors.

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- 2. To approve an amendment to the 2010 Equity Incentive Plan. FOR AGAINST ABSTAIN
- 3. To approve, on a non-binding and advisory basis, named executive officer compensation. FOR AGAINST ABSTAIN
- 4. To recommend, on a non-binding and advisory basis, the frequency of the vote on named executive officer compensation. 1 year 2 years 3 years ABSTAIN
- 5. Proposal to ratify the appointment of CohnReznick LLP as the independent registered public accounting firm of the Company for fiscal 2014. FOR AGAINST ABSTAIN

INSTRUCTIONS: To withhold authority to vote for any individual nominee(s), mark "FOR ALL EXCEPT" and fill in the circle next to each nominee you wish to withhold, as shown here: ●

NOTE: In their discretion, the proxies are authorized to vote on any other business properly brought before the meeting or any adjournment or postponement thereof.

THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS GIVEN, WILL BE VOTED FOR PROPOSALS 1, 2, 3, and 5 and for ONE YEAR on Item 4.

To change the address on your account, please check the box at right and indicate your new address in the address space above. Please note that changes to the registered name(s) on the account may not be submitted via this method.

Signature of Stockholder Date: Signature of Stockholder Date:

Note: Please sign exactly as your name or names appear on this Proxy. When shares are held jointly, each holder should sign. When signing as executor, administrator, attorney, trustee or guardian, please give full title as such. If the signer is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If signer is a partnership, please sign in partnership name by authorized person.

REGENERX BIOPHARMACEUTICALS, INC.
ANNUAL MEETING OF STOCKHOLDERS
Wednesday, September 10, 2014
11:00 a.m. (Eastern Daylight Time)
RegeneRx Biopharmaceuticals, Inc.
15245 Shady Grove Road
Rockville, Maryland 20850

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REGENERX BIOPHARMACEUTICALS, INC.

Proxy for Annual Meeting of Stockholders on September 10, 2014

This proxy is solicited by the Board of Directors.

The undersigned, a stockholder of RegeneRx Biopharmaceuticals, Inc., hereby appoints Mr. J.J. Finkelstein and Mr. Dane Saglio, and each of them, as proxies, with full power of substitution, to vote on behalf of the undersigned the number of shares which the undersigned is then entitled to vote, at the Annual Meeting of Stockholders of RegeneRx Biopharmaceuticals, Inc. to be held at the RegeneRx Biopharmaceuticals office facility's meeting room at 15245 Shady Grove Road, Rockville, Maryland 20850, on September 10, 2014 at 11:00 a.m. Eastern Daylight Time, and at any and all adjournments or postponements thereof, with all the powers which the undersigned would possess if personally present.

When properly executed, the appointed proxies will vote this proxy on the proposals set forth herein as directed by the stockholder, but if no direction is made in the space provided, this proxy will be voted **FOR** the election of all nominees for director, **FOR** the approval of the RegeneRx Biopharmaceuticals, Inc. amendment to the 2010 Equity Incentive Plan, **FOR** the approval on a non-binding and advisory basis of named executive officer compensation, for approval of a **ONE YEAR** frequency for the vote on named executive officer compensation, **FOR** the ratification of CohnReznick LLP's appointment as our independent registered public accounting firm for fiscal 2014, and in their discretion upon such other business as may properly come before the Annual Meeting of Stockholders or any adjournment or postponement thereof.

The undersigned hereby revokes all previous proxies relating to the shares covered hereby and acknowledges receipt of the Notice and Proxy Statement relating to the Annual Meeting of Stockholders.

(Continued and to be signed on the reverse side.)