

XENON PHARMACEUTICALS INC.

Proxy Form - Annual Meeting of Shareholders of Xenon Pharmaceuticals Inc. (the "Corporation") held on June 4, 2024 (the "Meeting")

Notes to Proxy

1. This proxy must be signed by a holder or his or her or its attorney duly authorized in writing. If you are an individual, please sign exactly as your name appears on this proxy. If the holder is a corporation, a duly authorized officer or attorney of the corporation must sign this proxy, and if the corporation has a corporate seal, its corporate seal should be affixed.
 2. If the common shares of the Corporation (the "**Common Shares**") are registered in the name of an executor, administrator or trustee, please sign exactly as your name appears on this proxy. If the Common Shares are registered in the name of a deceased or other holder, the proxy must be signed by the legal representative with his or her name printed below his or her signature, and evidence of authority to sign on behalf of the deceased or other holder must be attached to this proxy.
 3. **A shareholder has the right to appoint a person to attend and act for him or her or it and on his or her or its behalf at the Meeting other than the persons designated in this form of proxy.** Such right may be exercised by filling in the name of such person in the blank space provided and striking out the names of management's nominees. A person appointed as nominee to represent a shareholder need not be a shareholder of the Corporation. **A person appointed as your proxyholder must be present at the Meeting to vote.**
 4. Beneficial holders may be forwarded either a form of proxy already signed by the intermediary or a voting instruction form to allow them to direct the voting of Common Shares they beneficially own. Beneficial holders should follow instructions for voting conveyed to them by their intermediaries. Some holders may own Common Shares as both a registered and a beneficial holder; in which case you may receive more than one Proxy Statement and Management Information Circular and will need to vote separately as a registered and beneficial holder.
 5. If Common Shares are held by two or more individuals, any one of them present or represented by proxy at the Meeting may, in the absence of the other or others, vote at the Meeting. However, if one or more of them are present or represented by proxy, they must vote together the number of Common Shares indicated on the proxy.
 6. This proxy confers discretionary authority on the person appointed hereby to vote in his or her discretion with respect to amendments or variations to the matters identified in the Notice of Meeting accompanying this proxy and any other matters which may properly come before the Meeting or any adjournment or postponement thereof.
- All holders should refer to the Proxy Statement and Management Information Circular for further information regarding completion and use of this proxy and other information pertaining to the Meeting.

This proxy is solicited by and on behalf of the management and the Board of Directors of the Corporation.

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

ANNUAL MEETING OF SHAREHOLDERS OF XENON PHARMACEUTICALS INC.

June 4, 2024

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.

FAX AND EMAIL - You may alternatively fax your proxy to 718-765-8730 or scan and email to proxy@equiniti.com.

TELEPHONE - Call toll-free **1-800-PROXIES** (1-800-776-9437) in the United States or **1-201-299-4446** from foreign countries from any touch-tone telephone and follow the instructions. Have your proxy card available when you call.

MAIL - Complete, sign, date and mail your proxy card in the envelope provided.

ONLINE AT THE MEETING - To vote during the Meeting, please visit <https://web.lumiconnect.com/254509977> and log in with your control number. The password will be "xenon2024" (case sensitive).

ALL PROXIES MUST BE RECEIVED BY 11:59 P.M. (EDT) ON JUNE 3, 2024.



COMPANY NUMBER	
ACCOUNT NUMBER	

PLEASE MARK YOUR VOTE IN BLUE OR BLACK INK AS SHOWN HERE

MANAGEMENT RECOMMENDS VOTING "FOR" ALL OF THE FOLLOWING ITEMS.

- | | FOR | AGAINST | |
|---|--------------------------|--------------------------|--------------------------|
| 1. Election of Directors | | | |
| Dawn Svoronos | <input type="checkbox"/> | <input type="checkbox"/> | |
| Gillian Cannon | <input type="checkbox"/> | <input type="checkbox"/> | |
| Steven Gannon | <input type="checkbox"/> | <input type="checkbox"/> | |
| Elizabeth Garofalo | <input type="checkbox"/> | <input type="checkbox"/> | |
| Justin Gover | <input type="checkbox"/> | <input type="checkbox"/> | |
| Pat Machado | <input type="checkbox"/> | <input type="checkbox"/> | |
| Ian Mortimer | <input type="checkbox"/> | <input type="checkbox"/> | |
| Gary Patou | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Compensation of Named Executive Officers | | | |
| Approve, on an advisory basis, the compensation of the Corporation's named executive officers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Amendment to the Amended and Restated 2014 Plan | | | |
| Approve certain amendments to the Amended and Restated 2014 Equity Incentive Plan, including to increase the maximum number of Common Shares available for issuance thereunder by 5,200,000 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Appointment of Auditor | | | |
| Appoint KPMG LLP as the Corporation's auditor to hold office until the next annual meeting of the Corporation or until their successors are duly elected | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Remuneration of Auditor | | | |
| Authorize the Audit Committee of the board of directors of the Corporation to fix the remuneration to be paid to the auditor of the Corporation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

I/We authorize you to act in accordance with my/our instructions set out above. I/We hereby revoke any proxy previously given with respect to the Meeting. **If no voting instructions are indicated above, this Proxy will be voted FOR all of the foregoing items by any of the proxyholders appointed by management of the Corporation or, if you appoint another proxyholder, as that other proxyholder sees fit.** On any amendments or variations proposed or any new business properly submitted before the Meeting, I/We authorize you to vote as you see fit.

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.

Appointment of Proxyholder

I/We being holder(s) of Common Shares of Xenon Pharmaceuticals Inc. (the "Corporation"), hereby appoint Ian Mortimer, President and Chief Executive Officer of the Corporation or failing him, Sherry Aulin, Chief Financial Officer of the Corporation OR, instead of any of the foregoing

Print the name of the person you are appointing if this person is someone other than the individuals listed above as proxy of the undersigned, to attend, act and vote on behalf of the undersigned in accordance with the direction provided on all the foregoing matters and any other matter that may properly come before the Annual Meeting of Shareholders of the Corporation to be held at 11:30 a.m. PDT on June 4, 2024, to be held virtually via live webcast at <https://web.lumiconnect.com/254509977>, and at any and all adjournments or postponements thereof in the same manner, to the same extent and with the same powers as if the undersigned were personally present, with full power of substitution.

Request for Financial Statements

In accordance with Canadian securities regulations, shareholders may elect to receive Interim Financial Statements and related MD&As, and may elect to not receive Annual Financial Statements and related MD&As.

Instead of receiving the financial statements by mail, you may choose to view these documents on SEDAR at www.sedarplus.ca.

I am a shareholder of the Corporation, and as such request the following:

Annual Financial Statement with MD&A

(Mark this box if you would NOT like to receive the Annual Financial Statements and related MD&A)

Interim Financial Statement with MD&A

(Mark this box if you would like to receive the Interim Financial Statements and related MD&A)

If you are casting your vote online and wish to receive financial statements, please complete the online request for financial statements following your voting instructions.

If the cut-off time has passed, please fax this side to 718-765-8730.

Signature of Shareholder Date: Signature of Shareholder 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. All proxies must be received by 11:59 P.M. EDT on Monday, June 3, 2024.