



▼ IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

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## Proxy — IDERA PHARMACEUTICALS, INC.

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### PROXY SOLICITED BY THE BOARD OF DIRECTORS

#### Annual Meeting of Stockholders — June 20, 2018

Those signing on the reverse side, revoking all prior proxies, hereby appoint(s) Mr. Vincent J. Milano and Mr. Louis J. Arcudi, III, or each or any of them with full power of substitution, as proxies for those signing on the reverse side to act and vote all shares of stock of Idera Pharmaceuticals, Inc. which the undersigned would be entitled to vote if personally present at the 2018 Annual Meeting of Stockholders of Idera Pharmaceuticals, Inc. (the "Meeting") and at any adjournment or postponement thereof as indicated upon all matters referred to on the reverse side and described in the Proxy Statement for the Meeting, and, in their discretion, upon any other matters which may properly come before the Meeting. Attendance of the undersigned at the Meeting or at any adjournment or postponement thereof will not be deemed to revoke this proxy unless those signing on the reverse side shall revoke this proxy in writing.

**THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED IN THE MANNER DIRECTED BY THE STOCKHOLDER(S) SIGNING THE REVERSE SIDE AND IN THE DISCRETION OF THE PROXIES UPON ANY OTHER MATTERS WHICH PROPERLY COME BEFORE THE MEETING. IF NO INDICATION IS MADE, THE PROXIES SHALL VOTE "FOR" THE DIRECTOR NOMINEES AND "FOR" PROPOSALS NUMBERED 2, 3, 4, AND 5.**

**PLEASE VOTE, DATE AND SIGN ON OTHER SIDE AND RETURN PROMPTLY IN ENCLOSED ENVELOPE.**

**YOUR VOTE IS IMPORTANT. PLEASE VOTE TODAY.**