

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

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**SCHEDULE 14A**

**Proxy Statement Pursuant to Section 14(a) of the  
Securities Exchange Act of 1934  
(Amendment No. )**

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Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Under Rule 14a-12

**SYNLOGIC, INC.**  
(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

1) Title of each class of securities to which transaction applies:

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2) Aggregate number of securities to which transaction applies:

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3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

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4) Proposed maximum aggregate value of transaction:

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5) Total fee paid:

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- Fee paid previously with preliminary materials.
  - Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing:

1) Amount previously paid:

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2) Form, Schedule or Registration Statement No:

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3) Filing party:

4) Date Filed:

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The following disclosure was included in the Quarterly Report on Form 10-Q of Synlogic, Inc. filed with the Securities and Exchange Commission on May 15, 2018:

As more fully described below, on May 10, 2018, we announced a CEO transition, appointing our Chief Medical Officer, Aoife Brennan, M.B., B.Ch., to serve as Interim President and Chief Executive Officer as successor to Jose Carlos Gutiérrez-Ramos, Ph. D. and naming our existing Chairman of the Board of Directors (the “Board”), Peter Barrett, to serve as the Executive Chairman of the Board and oversee a Board committee to conduct a search for a permanent CEO.

### **Separation of Chief Executive Officer and Resignation as Director**

On May 10, 2018, Jose-Carlos Gutiérrez-Ramos notified our Board of his resignation as our President and Chief Executive Officer and as a member of our Board, effective immediately. Dr. Gutiérrez-Ramos’s resignation was not as a result of any disagreement with us on any matters related to our operations, policies or practices.

On May 10, 2018, we entered into an agreement (the “Letter Agreement”) with Dr. Gutiérrez-Ramos related to his resignation that provides Dr. Gutiérrez-Ramos severance and other benefits consistent with the terms of Dr. Gutiérrez-Ramos’s employment offer letter dated March 20, 2015 as amended to date, previously filed as Exhibits 10.8 and 10.9 to our Annual Report on Form 10-K for the year ended December 31, 2017 (filed with the SEC on March 20, 2018). In addition, pursuant to the terms of the Letter Agreement, Dr. Gutiérrez-Ramos will continue to vest in his previously granted restricted stock award grant dated May 14, 2015 until November 15, 2018.

The Letter Agreement includes a release of claims by Dr. Gutiérrez-Ramos against us. In connection with the entry into the Letter Agreement, Dr. Gutiérrez-Ramos agreed that he would continue to be subject to the Invention and Non-Disclosure Agreement and the Non-Compete and Non-Solicitation Agreement between us and Dr. Gutiérrez-Ramos that contains a covenant protecting our confidential information. In addition, Dr. Gutiérrez-Ramos agreed to be subject to a covenant not to make any statements that are professionally or personally disparaging about or adverse to our interests (including our officers, directors and employees) including, but not limited to, any statements that disparage any person, product, service, finances, financial condition, capability or any other aspect of our business, and that Dr. Gutiérrez-Ramos will not engage in any conduct that is intended to harm professionally or personally our reputation (including our officers, directors and employees).

The foregoing summary of the Letter Agreement does not purport to be complete and is subject to, and qualified in its entirety by, the full text of the Letter Agreement, which is attached as Exhibit 10.2 to our Quarterly Report on Form 10-Q filed with the SEC on May 15, 2018.

### **Appointment of Interim President and Chief Executive Officer**

In connection with Dr. Gutiérrez-Ramos’s resignation, on May 10, 2018, the Board appointed Aoife M. Brennan as our Interim President and Chief Executive Officer while the Board conducts a search for our next Chief Executive Officer. Dr. Brennan, age 43, has served as our Chief Medical Officer since the Merger and as Private Synlogic’s Chief Medical Officer since September 2016. No family relationships exist between Dr. Brennan and any of our directors or executive officers. There are no arrangements or understandings between Dr. Brennan and any other person pursuant to which Dr. Brennan was selected as the Interim President and Chief Executive Officer, nor are there any transactions to which we are or were a participant and in which Dr. Brennan has a material interest subject to disclosure under Item 404(a) of Regulation S-K. The Board has not yet determined whether any adjustments with respect to compensatory arrangements with Dr. Brennan will be made in connection with her appointment as Interim President and Chief Executive Officer.

Dr. Brennan joined Private Synlogic in September 2016 as Chief Medical Officer and is responsible for the oversight and direction of our clinical development strategy and operations. From May 2011 to August 2016, Dr. Brennan was Vice President and Head of the Rare Disease Innovation Unit at Biogen, a biotechnology company, where she was responsible for research and development of the Biogen rare disease portfolio, which involved programs ranging from pre-clinical to commercial, including the approval of ALPROLIX™, ELOCTATETM and SPINRAZATM. From 2008 to 2011, Dr. Brennan was director of clinical development at Tolerx, Inc., a start-up biotechnology company focusing on immunotherapy for Type 1 diabetes. Dr. Brennan holds a medical degree from Trinity College in Dublin, Ireland and completed post-graduate training in internal medicine, endocrinology and

metabolism. Dr. Brennan also completed post-doctoral training in clinical research and metabolism at the Beth Israel Deaconess Medical Center in Boston and is a graduate of the Harvard Medical School Scholars in Clinical Science Program.

#### **Related Changes in the Board of Directors**

In connection with Dr. Gutiérrez-Ramos's resignation as a member of our Board, the Board reduced the size of our Board from seven directors to six directors and the number of Class I Directors of the Board was reduced from two to one.