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

SCHEDULE 14A INFORMATION

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

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 §240.14a-12

ATYR PHARMA, 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:

(2) Aggregate number of securities to which transaction applies:

(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):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

☐ 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:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

April 2018

To our stockholders,

I want to thank you for your continued support of our mission at aTyr Pharma.

aTyr Pharma is a clinical-stage biotechnology company engaged in the discovery and clinical development of innovative medicines using its knowledge of tRNA synthetase biology.

Our mission is to translate our understanding of this newly discovered biology into novel first-in-class drug candidate programs for conditions with high unmet medical need.

Proteins derived from histidyl tRNA synthetase are present in human circulation and play an important role in modulating immune responses. We refer to the extracellular functionality of these proteins as the Resokine pathway, to differentiate them their intracellular proteins involved in protein synthesis. We are currently focused on the therapeutic translation of the Resokine pathway and are advancing two programs leveraging this knowledge, the ORCA program and the ATYR1923 program.

Our ORCA program is focused on the development of antibodies to target the Resokine pathway as a potential immuno-therapy for the treatment of cancer. In the second half of last year, we unveiled this preclinical program and subsequently initiated development on a panel of antibodies. In 2018, we expect to present and publish preclinical data in support of our ORCA program at important immunotherapy and cancer conferences.

Our ATYR1923 therapeutic candidate is focused on the development of an engineered Resokine protein as a potential therapy for the treatment of immune-mediated diseases, with early translational research indicating potential utility in interstitial lung diseases. In the fourth quarter of 2017, we initiated our first clinical trial with our ATYR1923 candidate in healthy volunteers. W e expect to report top-line results from this study in the second quarter of this year.

We embrace scientific transparency and commitment to research excellence as we chart drug targets from the Resokine family and other human tRNA synthetase genes that we hope will shape a better future of patient care. We are strengthening our mechanistic and translational research to better position ourselves for future clinical development across all of our programs. This research will allow us to better understand how to utilize the Resokine pathway as a therapeutic intervention point for our programs.

2017 was a very productive year and we have a number of insights into this Resokine pathway that we plan to publish in scientific publications and present at conferences this year. We are very excited about our programs as we advance both our ORCA program and our ATYR1923 therapeutic candidate towards meaningful patient trials.

We are committed to delivering on our mission and look forward to updating our stakeholders throughout the year.

Sincerely,

Sanjay S. Shukla, M.D., M.S.
President and Chief Executive Officer