UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

August 22, 2013 Date of Report (Date of earliest event reported)

INVIVO THERAPEUTICS HOLDINGS CORP.

(Exact Name of Registrant as Specified in Charter)

NEVADA (State or Other Jurisdiction of Incorporation) 000-52089 (Commission File Number) 36-4528166 (IRS Employer Identification No.)

One Kendall Square, Suite B14402 Cambridge, Massachusetts 02139 (Address of Principal Executive Offices) (Zip Code)

(617) 863-5500

(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

□ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

D Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Dere-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

Resignation of Francis M. Reynolds as Director and Officer

On August 22, 2013, Francis M. Reynolds tendered his resignation as Chief Executive Officer, Chief Financial Officer and President of InVivo Therapeutics Holdings Corp. (the "Company") and as a director of the Company due to his medical condition, effective immediately.

Appointment of Interim CEO and Acting CFO

On August 22, 2013, the Company announced that it has appointed Michael J. Astrue as interim Chief Executive Officer of the Company, effective immediately. Mr. Astrue, 56, currently serves as non-executive Chairman of the Board of Vivus, Inc., a Nasdaq-listed biopharmaceutical company. From February 2007 to February 2013, when he retired from public service, Mr. Astrue served as Commissioner of Social Security and as one of the six Trustees of the Medicare and Social Security Trust Funds. He also served as the interim Chief Executive Officer of Epix Pharmaceuticals, Inc., from 2005 to 2006, and as the President and Chief Executive Officer of Transkaryotic Therapies, Inc. from 2003 to 2005.

In connection with his appointment, Mr. Astrue and the Company entered into an employment agreement pursuant to which Mr. Astrue agreed to serve as interim Chief Executive Officer until January 10, 2014. Mr. Astrue will receive a salary at an annual rate of \$480,000 and is eligible to receive benefits to the same extent as provided to other senior management employees, including medical and dental benefits. In addition, at the end of the agreement term, subject to his performance of specified objectives, Mr. Astrue will receive a cash bonus equal to 50% of his total salary due under the full term of the Agreement, except that he shall not be eligible to receive the bonus if (i) the Company terminates the employment agreement as a result of a material breach by the Executive or (ii) Mr. Astrue terminates the employment agreement for any reason. If Mr. Astrue's employment is terminated prior to the end of its term (other than by the Company as a result of a material breach by Mr. Astrue or by Mr. Astrue for any reason), Mr. Astrue will receive a lump-sum payment equal to his remaining salary through the agreement term and the cash bonus, to the extent eligible.

The Company also announced the appointment of Sean Moran, 55, as acting Chief Financial Officer of the Company, effective immediately. Mr. Moran has served as the Company's Director of Finance since October 2010. Prior to joining the Company, Mr. Moran served as CFO at Celsion Corporation, a biotechnology company, from 2008 to 2010, and as CFO of Transport Pharmaceuticals, a transdermal drug delivery company, from 2006 to 2008. Mr. Moran has 16 years of CFO experience with life science and technology companies, including as CFO of Anika Therapeutics, Echo Therapeutics and SatCon Technology Corporation. Mr. Moran is a C.P.A. by training and holds an M.B.A. degree and B.S. degree in accounting from Babson College.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: August 22, 2013

INVIVO THERAPEUTICS HOLDINGS CORP.

By: /s/ Sean Moran

Sean Moran Acting Chief Financial Officer