ASHWANTH CHRISTOPHER FRANCIS

Nationality: Indian

Date of Birth: 27th August 1982

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EDUCATION

2014 **Ph.D.** in Molecular Biology, Summa (70/70)
Scuola Normale Superiore (SNS), Pisa, Italy.

2005 **MASTER OF SCIENCE** (**Biotechnology**), First Class with Distinction
LOYOLA COLLEGE, Chennai, India (Madras University)

2003 **BACHELOR OF SCIENCE** (**Microbiology**), First Class
HINDUSTAN COLLEGE OF ARTS & SCIENCE, Chennai, India (Madras University)

EMPLOYMENT HISTORY

2018-*Present* **Instructor** Dept. Pediatrics and Infectious Diseases, Emory University, Atlanta, USA.

2014-2018 **Postdoctoral Fellow** Dept. Pediatrics Infectious diseases Emory University, Atlanta, USA.

2012-2013 **Laboratory Instructor** Gene-Therapy, (MS) Univ. of Trento, Italy

2010-2013 **Laboratory Instructor** Molecular Virology**,** (BS) Univ. of Trento, Italy

Jul-Sep, 2006 **Research Officer**, Dept. Molecular Virology, Christian Medical College (CMC), Vellore, INDIA

Jul-Dec, 2005 **Lecturer**, Dept. Biotechnology. Hindustan College of Arts & Science, India

GRANTS

2018-2019 **PI** on the Collaborative Development Project (CDP) grant from the HIV Macromolecular Interactions and Impact on Viral Evolution of Drug Resistance (HIVE) NIH/NIGMS (2 U54 GM103368)

2017-2018 **co-PI** (with Dr. Elizabeth Wright and Dr. Gregory Melikian) on the Collaborative Development Project (CDP) grant from the HIV Macromolecular Interactions and Impact on Viral Evolution of Drug Resistance (HIVE) NIH/NIGMS (2 U54 GM103368)

HONORS, FELLOWSHIPS

2011-2013 Assegno di Ricerca*, NEST-CNR Pisa, Italy

2010-2011 Assegno di Ricerca*, Univ. of Trento, Italy

2010 Premio di Studio**,** Telethon, Italy

2006-2010 International Ph.D. Fellowship, Scuola Normale Superiore, Pisa Italy.

**Assegno di Ricerca is a research grant/fellowship that is obtained through a competitive interview.*
**Premio di Studio is a study prize won through merit.*

REVIEWING DUTIES

2015 – 2018 Invited reviewer for Plos One, AIDS Research and Human Retroviruses, MDPI-journals Viruses, Molecules.

2018 Invited reviewer for the research foundation – Flanders (FWO)

TEACHING EXPERIENCE

2014-*Present* **Laboratory Mentor** work-study students, Emory University.
Atlanta, GA. 30322 USA.

2012-2013 **Laboratory Instructor** Gene-Therapy laboratory course, (MS)
University of Trento, Italy.

2010-2013 **Laboratory Instructor** Molecular Virology laboratory course, (BS)
University of Trento, Italy.

2005 **Lecturer,** Dept. Biotechnology. Hindustan College of Arts & Science.
Chennai, India.

My teaching experience includes lectures and laboratory classes for bachelor and masters' students in the US, Italy and in India. I have kept in touch with several of my past students and also provided guidance for their career development. The topics of my lectures and laboratory courses included Emergent viruses, Retroviruses, Gene therapy, qPCR technology, Immuno-technology, Cell Biology, Animal Biotechnology, Molecular Genetics, Molecular Biology and Microbiology.

TALKS

Title: Visualization of the productive uncoating of single HIV-1 in living cells. Frontiers in Retrovirology conference, KU Leuven, Belgium. September 2018.

Title: Live-cell imaging of single HIV-1 uncoating, nuclear import and infection. Cold Spring Harbor Laboratory meeting on Retroviruses May-2018.

Title: Uncoating at the nuclear pore is a pre-requisite for HIV-1 nuclear import. Cold Spring Harbor Laboratory meeting on Retroviruses May-2017.

Title: Real-time visualization of Single HIV-1 uncoating *in vitro* and in living cells. Cold Spring Harbor Laboratory meeting on Retroviruses May-2016.

Title: Second Generation Imaging of Nuclear/Cytoplasmic HIV-1 Complexes. Selected oral presentation at *"Italian experience in biomedical research: Young minds at work"* held at Desenzano del Garda (BS), November 7-8, 2013.

INVITED LECTURES

2019, January 7th – University College of London, UK
2019, January 8th – King's College London, UK

LANGUAGE PROFICIENCY

Tamil - Mother tongue
English – Excellent/ Native speaker
Italian – Good

KEY PUBLICATIONS

Francis AC, Melikyan GB. Single HIV-1 Imaging Reveals Progression of Infection through CA-Dependent Steps of Docking at the Nuclear Pore, Uncoating, and Nuclear Transport. Cell host & microbe. 2018; 23(4):536-548.e6. PMCID: PMC5901770

Sood C*, **Francis AC***, Desai TM, Melikyan GB. An improved labeling strategy enables automated detection of single-virus fusion and assessment of HIV-1 protease activity in single virions. The Journal of biological chemistry. 2017;292(49):20196-20207.PMCID: PMC5724006 *(* denotes equal contribution)*

Francis AC, Marin M, Shi J, Aiken C, Melikyan GB. Time-Resolved Imaging of Single HIV-1 Uncoating In Vitro and in Living Cells. PLoS pathogens. 2016;12(6):e1005709. PMCID: PMC4913920

Francis AC, Di Primio C, Quercioli V, Valentini P, Boll A, Girelli G, Demichelis F, Arosio D, Cereseto A. Second generation imaging of nuclear/cytoplasmic HIV-1 complexes. AIDS research and human retroviruses. 2014; 30(7):717-26. PMCID: PMC4077004

OTHER PUBLICATIONS

Xu JP, **Francis AC**, Meuser ME, Mankowski M, Ptak RG, Rashad AA, Melikyan GB, Cocklin S. Exploring Modifications of an HIV-1 Capsid Inhibitor: Design, Synthesis, and Mechanism of Action. J Drug Des Res. 2018;5(2). pii: 1070. Epub 2018 Aug 13. PMID: 30393786

Hammonds JE, Beeman N, Ding L, Takushi S, **Francis AC**, Wang JJ, Melikyan GB, Spearman P. Siglec-1 initiates formation of the virus-containing compartment and enhances macrophage-to-T cell transmission of HIV-1. PLoS pathogens. 2017;13(1):e1006181. PMCID: PMC5298340

Tenzer S, Moro A, Kuharev J, **Francis AC**, Vidalino L, Provenzani A, Macchi P. Proteome-wide characterization of the RNA-binding protein RALY-interactome using the in vivo-biotinylation-pulldown-quant (iBioPQ) approach. Journal of proteome research. 2013; 12(6):2869-84. PMID: 23614458

Swaminathan S, Hanna LE, Sundaramurthi JC, Leonard A, Angayarkanni B, **Francis AC**, Lakshmi S, Nayak K. Prevalence and pattern of cross-reacting antibodies to HIV in patients with tuberculosis. AIDS research and human retroviruses. 2008;24(7):941-6. PMID: 18593340

REVIEW ARTICLES

Francis AC, Melikyan GB. Live-Cell Imaging of Early Steps of Single HIV-1 Infection. Viruses. 2018; 10(5). PMCID: PMC5977268

Francis AC, Di Primio C, Allouch A, Cereseto A. Role of phosphorylation in the nuclear biology of HIV-1. Current medicinal chemistry. 2011; 18(19):2904-12. PMID: 21651489