

**ATHAR ANSARI**

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**DEPARTMENT/COLLEGE**

Biological Sciences/College of Liberal Arts and Sciences, Wayne State University, Detroit, Michigan  
Molecular Biology and Genetics Program/Karmanos Cancer Institute, Detroit, Michigan

**PRESENT RANK**

Associate Professor of Biological Sciences, Wayne State University (August 2012 to present)  
Scientific Member of Tumor Biology and Microenvironment Program at Karmanos Cancer center (May 2010 to present)

**WSU APPOINTMENT HISTORY**

2012/ Associate Professor  
2006/ Assistant Professor

**FACULTY APPOINTMENTS AT OTHER INSTITUTIONS (Years and Rank)**

Assistant Professor (July 2005- July 2006)  
Department of Chemistry and Biochemistry  
University of Regina, Regina, Saskatchewan, Canada

Adjunct Assistant Professor (July 2000- June 2005)  
Department of Biochemistry/Pharmacology  
University of Medicine and Dentistry of New Jersey  
Piscataway, NJ 08554

**EDUCATION**

Post-doctoral fellow (June 1995-October 2000)  
Dept of Pharmacology, Laboratory of Dr. Marc Gartenberg  
Robert Wood Johnson Medical School  
University of Medicine & Dentistry of New Jersey

Post-doctoral fellow (April 1993- May 1995)  
Dept of Biochemistry, Laboratories of Dr. Danny Reinberg & Dr. Beate Schwer  
Robert Wood Johnson Medical School  
University of Medicine & Dentistry of New Jersey

Ph.D. (1986-1993) University of Delhi, India

Title of thesis: Purification and characterization of a protein kinase from dwarf pea epicotyls that phosphorylates and regulates RNA polymerase II activity in vitro.

## HONORS/AWARDS

- 'Career Development Chair Award' conferred by the Wayne State University for 2013-2014
- Editorial board of Journal of Biological Chemistry selected the paper [Mukundan B and Ansari A (2011) A novel role of Mediator subunit Srb5/Med18 in termination of transcription] as 'Paper of the week'.
- Annual Meeting Compendia of American Society of Biochemistry and Molecular Biology (2010) recognized the work from the lab (El Kaderi et al., 2009, J. Biol. Chem. 284, 25015-25025) as one of the six significant papers recently published in the Journal of Biological Chemistry on the initiation of transcription in recent years (<http://www.jbc.org/site/meeting2010/dna/>).
- 'Excellence in Teaching Award' by College of Liberal Arts and Sciences, Wayne State University (2009)

## GRANTS AWARDED

*Funding Agency:* National Science Foundation

*Title:* An investigation into a novel role of Rat1 termination factor in splicing of mRNA.

*Period of Coverage:* November 15, 2019 to October 30, 2021

*Amount:* \$269, 285

*Funding Agency:* National Science Foundation

*Title:* Regulation of transcription by promoter-terminator interaction

*Period of Coverage:* September 15, 2010 to September 14, 2017

*Amount:* \$718, 281

*Funding Agency:* 'Grant Boost Award' from Office of Vice President of Research at Wayne State University

*Title:* An investigation into the intron-mediated regulation of transcription by the looped gene architecture

*Period of Coverage:* June 2017 to June 2019

*Funding Agency:* 'Grant Boost Award' from Office of Vice President of Research at Wayne State University

*Title:* Role of gene looping in intron-mediated regulation of transcription

*Period of Coverage:* 1 year (January 2014 to December 2015)

*Amount:* \$35,000

*Funding Agency:* Canada's NSERC-Discovery grant (RGPIN 326768-06) entitled "Chromatin-mediated transcriptional regulation by the environment in *Saccharomyces cerevisiae*" (2006).

## ESSAYS/THESES/DISSERTATIONS DIRECTED

### Thesis/Dissertation direct supervision (WSU only)

#### Ph. D.

- Banupriya Mukundan (2007-2012)  
“An investigation into the prevalence and the mechanism of gene looping in budding yeast”
- Nadra Alhusini (2008-2013)  
“An investigation into the role of CF1A 3' end processing complex in the termination and initiation/reinitiation of transcription”
- Scott Medler (2008-2014)  
“General transcription factors play dual roles in initiation and termination”
- Neha Agarwal (2010-2016)  
“An investigation into the role of gene architecture in intron-mediated enhancement of transcription”
- Zuzer Dhoondia (2014-2020)  
“Termination-independent role of Rat1 in cotranscriptional splicing in budding yeast”.
- Michael O'Brien (2018-present)  
“Novel roles of TFIIB in termination and transcription directionality”.
- Katherine Dwyer (2019- present)  
“Introns play a role functionally analogous to activators in regulating transcription”

#### M. S.

- Nadra Alhusini (2006-2008)  
“The mechanism of Ppr1-mediated transcriptional activation of *URA3* by orotic acid”
- Belal El Kaderi (2007-2008)  
“Gene looping accompanies activated transcription”
- Sarita Raghunayakula (2008-2009)  
“A role for the CF1 3' end processing complex in RNAP II-dependent gene looping in yeast”
- Shanelle Pearse (2014-2015)  
“HIV protease inhibitors in AIDS therapy”
- Ricci Tarockoff (2015-2016)  
“A role for the Mediator subunit Soh1 in RNAP II-dependent gene looping in yeast”
- Bianca Pereira (2017-2018)  
“A role for the Mediator complex in promoter directionality in yeast”
- Katherine Dwyer (2018-2019)  
“A novel role of introns in regulation of transcription by RNA polymerase II”
- Zulifa Khan (2020-present)  
“Comparative analysis of the effect of intron on different steps of gene expression”

## PUBLICATIONS

### Refereed Journal Articles \*graduate student, # undergraduate student

#### Research conducted at WSU

- (1) Dhoondia Z, Elewa H, Malik M, Arif Z, Pique-Regi R and Ansari A (2021) A termination-independent role of Rat1 in cotranscriptional splicing. **Nucleic Acid Research** (in press).  
*Research conducted entirely at Wayne State University. Z. Dhoondia was graduate students in my laboratory, while Hesham Elewa, Marva Malik and Zahidur Arif were undergraduate students. Roger Pique-Regi collaborator from WSU Medical School*
- (2) Dwyer K, Agarwal N, Pile L and Ansari A (2021) Gene architecture facilitates intron-mediated enhancement of transcription. **Frontiers in Molecular Bioscience** 8, 276.  
*Work done entirely at Wayne State University. Katherine Dwyer and Neha Agarwal are/were graduate students in my laboratory.*
- (3) O'Brien M, and Ansari A (2021) Critical role of TFIIIB in viral pathogenesis. **Frontiers in Molecular Bioscience** 8, 308.  
*Work done entirely at Wayne State University. Michael O'Brien is a graduate student in my laboratory.*
- (4) Al Husini N, Medler S, Ansari A (2020) Crosstalk of promoter and terminator during RNA polymerase II transcription cycle. **Biochimica Biophysica Acta Gene Regulatory Mechanisms** 1863, 194657  
*Work done entirely at Wayne State University. Nadra Al Husini and Scott Medler were graduate students in my laboratory.*
- (5) Fuster PA, \*O'Brien MJ, Polo NG, \*Pereira B, \*Dhoondia Z, Ansari A and Calvo O (2019) RNA polymerase II plays an active role in the formation of gene loops through the Rpb4 subunit, **Nucleic Acid Research** 47, 8975-8987.  
**6 citation, Impact Factor: 11.147**  
*Research conducted in collaboration with Olga Calvo. My lab contributed equally to the work and I am co-corresponding author in the paper. The contribution of our lab was demonstrating the contribution of Rpb4 in gene looping by 3C assay and examining its role in termination by TRO assay. B. Pereira and Z. Dhoondia, are/were graduate students in my laboratory*

- (6) Ansari A (2019) Recent Trends in Eukaryotic Transcription: Crucial Role of Gene Architecture in Transcriptional Regulation. **J Cytol Molecul Biol.** 4, 2  
**0 citation**
- (7) \*Al Husini N, Sharifi A, Mousavi SA, Chitsaz H and Ansari A (2017) Genomewide analysis of Clp1 function in transcription in budding yeast. **Scientific Reports** 7, 6894.  
*This study extends the research published in PLOS Genetics in 2013. Here we did a genomewide analysis of the role of CF1A in transcription. My graduate student Al Husini performed all molecular studies while trainees in Dr. Chitsaz' s group at University of Colorado performed bioinformatics analysis.*  
**0 citation, Impact Factor: 4.011**
- (8) \*Dhoondia Z, \*Tarockoff R, \*Alhusini N, \*Medler S, \*Agarwal N and Ansari A (2017) Analysis of termination of transcription using BrUTP-strand-specific transcription run-on (TRO) approach. **Journal of Visualized Experiments** 121: e55446.  
**5 citation, Impact Factor: 1.108**  
*Research conducted entirely at Wayne State University. Z. Dhoondia, R Tarockoff, N Alhusini, S Medler and N Agarwal are/were graduate students in my laboratory.*
- (9) \*Agarwal N and Ansari A (2016) Enhancement of transcription by a splicing-competent intron is dependent on promoter directionality. **PLOS Genetics** 12: e1006047  
**20 citation, Impact Factor: 5.224**  
*Research conducted entirely at Wayne State University. N Agarwal was a PhD student in my laboratory.*
- (10) Cloutier SC, Wang S, Ma WK, \*Al Husini N, \*Dhoondia Z, Ansari A, Pascuzzi PE and Tran EJ (2016) Regulated Formation of lncRNA-DNA Hybrids Enables Faster Transcriptional Induction and Environmental Adaptation. **Molecular Cell** 61, 393-404.  
**72 citation, Impact Factor: 14.548**  
*Research done in collaboration with Dr. EJ Tran at University of Purdue. Nadra Alhusini and Zuzer Dhoondia were graduate students in my laboratory. The contribution of my lab was directed towards understanding the role of gene architecture in lncRNA-mediated regulation.*
- (11) \*Medler S and Ansari A (2015) Gene looping facilitates TFIIH kinase-mediated termination of transcription. **Scientific Reports** 5, 12586.  
*Research conducted entirely at Wayne State University. S. Medler was a PhD student in my laboratory.*  
**13 citation, Impact Factor: 4.011**

- (12) \*Al Husini N, #Kudla P and Ansari A (2013) A role for CF1 3' end processing complex in promoter-associated transcription. ***PLOS Genetics*** 9: e1003722.  
**28 citation**, *Impact Factor: 5.224*  
*Research conducted entirely at Wayne State University. N Al Husini was a PhD student in my laboratory and Paul Kudla was an undergraduate student.*
- (13) \*Mukundan B and Ansari A (2013) Srb5-mediated termination of transcription is dependent on gene looping. ***J. Biol. Chem.*** 288, 11384-11394.  
**41 citation**, *Impact Factor: 4.106*  
*Research conducted entirely at Wayne State University. B. Mukundan was a PhD student in my laboratory.*
- (14) \*El Kaderi B, \*Medler S and Ansari A (2012) Analysis of interactions between genomic loci through chromosome conformation capture (3C). ***Current Protocols in Cell Biology*** 56(22.15), 1-22.  
**16 citation**  
*Research conducted entirely at Wayne State University. B El Kader and S. Medler were graduate students in my laboratory.*
- (15) \*Moabbi AM, \*Agarwal N, \*El Kaderi B and Ansari A (2012) Intron-mediated transcriptional regulation is dependent on gene looping. ***P. Natl. Acad. Sci. USA.*** 109, 8505-8510.  
**77 citation**, *Impact Factor: 9.580*  
*Research conducted entirely at Wayne State University. AM Moabbi, N Agarwal and B El Kaderi were graduate students in my lab.*
- (16) \*Mukundan B and Ansari A (2011) A novel role for Mediator complex subunit Srb5/Med18 in termination of transcription. ***J. Biol. Chem.*** 286, 37053-37057.  
**57 citation**, *Impact Factor: 4.106*  
**Selected as a Journal of Biological Chemistry “Paper of the week” by the editorial board members and associate editors. The criterion for selection is that the paper should be in the top 1 percent of manuscripts that are reviewed in a year in significance and overall importance.**  
*Research conducted entirely at Wayne State University. B. Mukundan was a PhD student in my laboratory.*
- (17) \*Medler S, \*Al Husini N, \*Ragunayakula S, \*Mukundan B, #Aldea A and Ansari A (2011) Evidence for a complex of TFIIB with poly(A) polymerase and cleavage factor I subunits required for gene looping. ***J. Biol. Chem.*** 286, 33709-33718.  
**48 citations**, *Impact Factor: 4.106*

*Research conducted entirely at Wayne State University. S. Medler, N. Al Husini, S. Raghunayakula and B. Mukundan were graduate students in my laboratory. A. Aldea was an undergraduate researcher in my laboratory.*

- (18) \*El Kaderi B, \*Medler S, \*Raghunayakula S and Ansari A (2009) Gene looping is conferred by activator-dependent interactions between transcription initiation and termination machineries. **J. Biol. Chem.** 284, 25015-25025.

**71 citations**, Impact Factor: 4.106

**Selected by 'American Society of Biochemistry and Molecular Biology' as one of the six significant papers recently published in the Journal of Biological Chemistry on initiation of transcription. It was reprinted in the Annual Meeting Compendia in 2010.**

(<http://www.jbc.org/site/meeting2010/dna/>)

*Research conducted entirely at Wayne State University. B. El Kaderi, S. Medler and S. Raghunayakula were graduate students in my laboratory.*

- (19) Hampsey M, Singh BN, Ansari A, Laine JP, Krishnamurthy S (2011) Control of eukaryotic gene expression: Gene loops and transcription memory. **Adv. Enzyme Reg.** 51,118-125.

**90 citations**

*Research done in collaboration with Dr. Hampsey at Rutgers University. The contribution of my lab was about 25 %.*

- (20) Singh BN, Ansari A, and Hampsey M (2009) Detection of gene loops by 3C in yeast. **Methods** 48, 361-367.

**31 citations**, Impact Factor: 3.782

*Research done in collaboration with Dr. Hampsey at Rutgers University. I conceived the idea for detection of gene loops by a new 3C approach and standardized the protocol. The contribution of my lab towards the paper was about 60 %.*

Prior publications (Before WSU)

- (21) Ansari A and Hampsey M (2005) A role for CPF 3'-end processing machinery in RNAP II dependent gene looping **Genes Dev.** 19, 2969-2978.

**(276 citations, Impact Factor: 8.990)**

- (22) Heine M, Cramm-Behrens CI, Ansari A, Chu H-P, Ryazanov AG, Naim HY and Jacob R (2005) Alpha-Kinase1, a New component in Apical Protein Transport. **J. Biol. Chem.** 280, 25637-25643.

**(57 citations, Impact Factor: 4.106)**

- (23) Ryazanova LV, Dorovkov MV, Ansari A and Ryazanov AG (2004) Characterization of the Protein Kinase Activity of TRPM7/Chak1, a Protein Kinase Fused to TRP Ion Channel. **J. Biol. Chem.** 279, 3708-3716.

*(162 citations, Impact Factor: 4.106)*

- (24) Andrulis ED, Zappula DC, Ansari A, Perrod S, Laiosa CV, Gartenberg MR, Sternglanz R (2002) Esc1p, a Nuclear Periphery Protein Required for Sir4-Based Plasmid Anchoring and Partitioning. *Mol. Cell. Biol.* 22, 8292-8301. *(159 citations, Impact Factor: 3.735)*
- (25) Ansari A and Gartenberg MR (1999) Persistence of an Alternate Chromatin Structure at Silenced Loci in vitro. *Proc. Natl. Acad. Sci. (USA)* 96, 343-348. *(31 citations, Impact Factor: 9.580)*
- (26) Ansari A, Tzu-Hao Cheng and Gartenberg MR (1999) Isolation of Selected Chromatin Fragments from Yeast by Site-Specific Recombination in vitro. *Methods* 17, 104-111. *(13 citations, Impact Factor: 3.782)*
- (27) Ansari A and Gartenberg MR (1997) The Yeast Silencing Factor Sir4p Anchors and Partitions Plasmid. *Mol. Cell. Biol.* 17, 7061-7068. *(70 citations, Impact Factor: 3.735)*
- (28) Ansari A and Schwer B (1995) SLU7 and a Novel Activity SSF1 act subsequent to PRP16 in the Second Step of Yeast pre-mRNA Splicing. *EMBO J.* 14, 4001-4009. *(132 citations, Impact Factor: 11.227)*
- (29) Drapkin R, Reardon J, Ansari A, Huang JC, Zawel L, Ahn KJ, Sancar A and Reinberg D (1994) TFIIF, a Link Between RNA polymerase II Transcription and DNA Excision Repair. *Nature* 368, 769-772. *(483 citations, Impact Factor: 43.070)*
- (30) Ansari A and Sachar RC (1994) Purification and Characterization of a Protein Kinase From Dwarf Pea Epicotyls. *Phytochemistry*, 36, 553-558. *(4 citations, Impact Factor: 2.905)*
- (31) Saluja D, Ansari A, Sood A and Sachar RC (1989) Early Response to Gibberellic Acid of Monophenolase Activity in De-embryonated Half Seeds of Wheat. *Phytochemistry* 28,341-344. *(1 citation, Impact Factor: 2.905)*

#### **INVITED SEMINARS OR LECTURES PRESENTED IN LAST FIVE YEARS**

- (1) Albion College, Department of Biology, Albion, MI, (03/29/18), "When the promoter meets the terminator, the end becomes a new beginning."



- (2) Wayne State University Medical School, Department of Biochemistry, Detroit, MI, (04/07/15), "Dual role of initiation and termination factors in transcription."
- (3) Michigan State University, Department of Biochemistry and Molecular Biology, East Lansing, MI, (03/15/12), "When the promoter meets the terminator, the end becomes a new beginning."
- (4) Oakland University, Department of Biological Sciences, Rochester, MI, (11/15/11), "Gene looping: A novel transcription regulatory mechanism."
- (5) Wayne State University Medical School, Department of Biochemistry, Detroit, MI, (02/22/11), "Gene looping: Where the end meets the beginning."
- (6) Karmanos Cancer Center, Molecular Biology and Genetics Program, Detroit, MI (10/5/09), "Transcriptional regulation by gene looping in yeast."
- (7) Wayne State University, Department of Chemistry, Detroit, MI (9/21/07), "RNA Polymerase II Caught in an Efficiency Loop".

## JOURNAL/EDITORIAL/EXPERT REVIEWER ACTIVITY

### Journal Editorial activity

- (1) Invited guest editor of the of the special issue on the topic "**The Lesser Known World of RNA Polymerases**" published by 'Frontiers in Molecular Biosciences, Switzerland (2020-2021).
- (2) Invited member of the editorial board of '**Current Trends in Genetics and development**', USA (2019-present).
- (3) Invited member of the editorial board of the '**AIMS Genetics**', USA (2017-present).
- (4) Invited member of the editorial board of '**Scientific Reports**', Nature group, London (2016- present).
- (5) Invited member of the editorial board of the '**Journal of Cytology and Molecular Biology**', Avens Publishing Group, Boston, MA, USA, (2014-present).

### Manuscript Review

- (1) *International Journal of Molecular Sciences* (2021)
- (2) *Frontiers in Molecular Biosciences* (2021)
- (3) *Current Molecular Medicine* (2019, 2020, 2021a, 2021b)
- (4) *Journal of Cytology and Molecular Biology* (2014, 2017, 2021)
- (5) *Nucleic Acids Research* (2013, 2016, 2020)
- (6) *Scientific Reports; Nature* (2013, 2015, 2016a, 2016b, 2017a, 2017b, 2017c, 2017d, 2018a, b, c, d 2019a, b, c, d, 2020a, b)
- (7) *PLoS ONE* (2012, 2014, 2016, 2019)
- (8) *Molecular Genetics and Genomics* (2019)
- (9) *Methods* (2019)

- (10) *AIMS Genetics* (2018, 2019)
- (11) *Computational and Structural Biotechnology Journal* (2019)
- (12) *International Journal of Physics Research and Application* (2019)
- (13) *Nature Communication* (2015, 2017)
- (14) *Critical Reviews in Biochemistry and Molecular Biology* (2017)
- (15) *The Plant Cell* (2016, 2017)
- (16) *Genetics* (2016)
- (17) *FEMS Yeast Research* (2016)
- (18) *BBA – Molecular Cell Research* (2015)
- (19) *Molecular Biology Reports* (2015)
- (20) *Genome Biology* (2013)
- (21) *Transgenic Research* (2013)
- (22) *Journal of Clinical Investigation* (2013)
- (23) *Science* (2012)
- (24) *EMBO Reports.* (2012)
- (25) *BBA – Gene Regulatory Mechanisms* (2012)
- (26) *Plant Biotechnology Journal* (2012)
- (27) *Genetic Research International* (2011)
- (28) *Molecular Microbiology* (2009)

#### **Funding Agency Grant Review**

- (1) *National Science and Engineering Research Council (NSERC)*, Canada. (2009, 2012)
- (2) *National Science Foundation (NSF)*, USA (2010, 2014, 2015, 2020)  
Panelist in 2011.
- (3) *Medical Research Council (MRC)*, UK. (2014)
- (4) *Wellcome Trust (WT)*, UK (2016)
- (5) *Karmanos Cancer Institute (KCI)* Strategic Research Initiative Grant, Detroit, USA (2016)

#### **University Program Review**

- (1) Invited expert reviewer of new and interrelated programs at the **University of New Hampshire**; M.S. Biotechnology: Industrial and Biomedical Sciences and M.S. Molecular and Cellular Biotechnology. March 11- March 12, 2020

## **SERVICE**

#### **Committee Assignments in Last Five Years**

- (1) Graduate director (2019-present): *Duties include provide general guidance to graduate students about PhD or MS program requirements; monitoring lab rotations and the progress of graduate students through the program; monitoring if they are taking appropriate course and taking*

*qualifying exam on time and following all rules and regulations; acting as a liaison between graduate students, college and graduate school.*

- (2) Chair, Division of Microbiology, Molecular Biology and Biotechnology (2015-2020)
- (3) Director MS Biotechnology Program (2014-2019) *Duties included selection and monitoring progress of students through the program; help them select a laboratory and find a home for doing dissertation research.*
- (4) Biology Research Learning Community (2013-2019)
- (5) 'Career Development Chair' Selection Committee, Wayne State University (2014, 2017)
- (6) 'Dennis Smith Award' Evaluation Committee, Department of Biological Sciences (2009, 2017, 2018)
- (7) Promotion and Tenure Committee, Department of Biological Sciences (2013-2014, 2016-2017)
- (8) Salary Committee, Department of Biological Sciences (2016-2017)
- (9) Graduate Committee, Department of Biological Sciences (2007-2012, 2014-2019)
- (10) Faculty Search Committee, Department of Biological Sciences (five committees from 2008-2015)