

**ABHISHEK DEY, Ph. D**  
**Ramalingaswami Fellow**  
**Department of Biotechnology**  
**NIPER-Raebareli**  
**Lucknow-226002**

**Email: [41.abhishek@gmail.com](mailto:41.abhishek@gmail.com), [rf.abhishek.dey@niperrbl.ac.in](mailto:rf.abhishek.dey@niperrbl.ac.in)**

**Phone: +91-7042263982**

## **Education**

---

<b>Jawaharlal Nehru University/ CSIR-CDRI</b> <b>Ph. D, Biochemistry and Structural Biology</b>	New Delhi/Lucknow, India December 2014
<b>Kurukshetra University</b> <b>Master of Science, Biochemistry</b>	Kurukshetra, Haryana, India July 2006
<b>Kurukshetra University</b> <b>Bachelor of Science, Biochemistry, Zoology, Chemistry</b>	Kurukshetra, Haryana, India April 2004

## **Professional Experience**

---

<b>NIPER-Raebareli</b> <b>Ramalingaswami Fellow</b>	Lucknow, UP, India December 2022-Current
<b>University of North Carolina-Chapel Hill</b> <b>Postdoctoral Research Associate</b>	Chapel Hill, NC, USA May 2020-November 2022
<b>University of North Carolina-Charlotte</b> <b>Postdoctoral Research Associate</b>	Charlotte, NC, USA August 2017-April 2020
<b>Carnegie Mellon University</b> <b>Postdoctoral Research Associate</b>	Pittsburgh, PA, USA March 2017-August 2017
<b>University of Connecticut health</b> <b>Postdoctoral Research Associate</b>	Farmington, CT, USA October 2015-March 2017
<b>PREMAS Biotech</b> <b>Analytical Scientist- QC</b>	Gurugram, Haryana, India April 2014 – July 2015
<b>CSIR-Central Drug Research Institute</b> <b>Doctoral Student</b> <b>Thesis Title:</b> Structural studies on transcriptional regulatory protein(s) from <i>Mycobacteria</i> .	Lucknow, UP, India May 2009-April 2014
<b>CSIR-Central Drug Research Institute</b> <b>Project Assistant-II</b>	Lucknow, UP, India June 2007- May 2009

**CSIR-National Botanical Research Institute**  
**Project Trainee**

Lucknow, UP, India  
July 2005- August 2005

### **Awards and Fellowships**

---

<b>Ramalingaswami Re-entry Fellowship, DBT-India</b>	2022
<b>Postdoctoral Fellowship (NIH), University of North Carolina-Chapel Hill</b>	2020-present
<b>Postdoctoral Fellowship (NSF), University of North Carolina-Charlotte</b>	2017-2020
<b>Postdoctoral Fellowship (NSF), Carnegie Mellon University</b>	2017
<b>Postdoctoral Fellowship (NIH), University of Connecticut Health</b>	2015- 2017
<b>ICMR-Senior Research Fellowship, CSIR-CDRI</b>	2011- 2014
<b>ICMR- Junior Research Fellowship, CSIR-CDRI</b>	2009- 2011
<b>David Blow Scholarship, CCP4 study weekend, UK</b>	2010

### **Teaching Experience**

---

<b>BT-650</b> Instructor, NIPER-R Topics: Analysis, Diagnostics and Cell based Screening	2023
<b>BT-660</b> Instructor, NIPER-R Topics: Sequence Analysis, Computational Biology	2023
<b>BT-810</b> Instructor, NIPER-R Topics: Protein Structure and Stability	2023
<b>BIOL 4000/5000 (Gene Silencing)</b> Assistant Instructor, UNC-Charlotte Topics: Chromatin structure, Transcription and DNA methylation, Techniques	2020
<b>BIOL 4000/5000 (Gene Silencing)</b> Assistant Instructor, UNC-Charlotte Topics: Structural and Functional importance of Ribozymes	2019
<b>BIOL 6000/8000 (Introduction to RNA Molecular Biology)</b> Assistant Instructor, UNC-Charlotte Topics: RNA structure, Telomerase RNP complex	2018
<b>Proteins: Structure and Function</b> Assistant Instructor, CSIR-CDRI Topics: Hierarchy in Protein folding and stabilizing forces	2012-2014

### **Peer-Reviewed Publications**

---

Quantitative integration of RNA structure and splicing elements to explain alternative splicing of Microtubule-Associated Protein Tau gene. Kumar J, Lackey L, Waldern JM, **Dey A**, Mathews DH, Laederach A. (2022) *eLife*,11:e73888. DOI: <https://doi.org/10.7554/eLife.73888>

Sequence and tissue targeting specificity of ZFP36L2 reveals *Elavl2* as a novel target with co-regulation potential. Redmond IC, Ardizzone M, Hekimoglu H, Hatfield BM, Waldern JM, **Dey A**, Montgomery SA, Laederach A, Ramos SBV. (2022) *Nucleic Acid Research*, **50** (7), 4068-4082.

*In vivo* Architecture of the Telomerase RNA Catalytic Core in *Trypanosoma brucei*. **Dey A**, Eklund AM, Klotz K, Saha, A., Davis J, Li, B. Laederach A, Chakrabarti K. (2021) *Nucleic Acid Research*, **49** (21), 12445-12466.

To knot or not to knot: Multiple conformations of the SARS-CoV-2 frameshifting RNA element. Schlick T, Zhu Q, **Dey A**, Jain S, Yan S, and Laederach A. (2021) *Journal of American Chemical Society*, **143** (30), 11404-11422.

The RNA Structurome in the Asexual Blood Stages of Malaria Pathogen *Plasmodium falciparum*. Alvarez DR, Ospina A, Barwell T, Zheng B, **Dey A**, Li C, Basu S, Shi X, Kadri S, Chakrabarti K. (2021) *RNA Biology*, **18** (12), 2480-2497.

Innately water soluble isatoic anhydrides with modulated reactivities for RNA SHAPE analysis Fessler A\*, **Dey A**\*, Finis DS, Flower AJ, Chakrabarti K, Ogle C (2020). *Bioconjugate Chemistry*, **31**, (3), 884-888. \* **Equal Contribution**

The *Non-Coding RNA* Journal Club: Highlights on Recent Papers—7. **Dey A**, Chakrabarti K, et. al. (2019), *Non-coding RNA*, **2019**, **5**, 40.

Water-soluble isatoic anhydrides: a platform for RNA-SHAPE analysis and protein bioconjugation. Fessler A, **Dey A**, Garmon CB, Finis DS, Saleh N, Fowler AJ, Jones DS, Chakrabarti K and Ogle C (2018), *Bioconjugate Chemistry*, **29**, 3196-3202.

Sequence variation of rare outer membrane protein  $\beta$ -barrel domains in clinical strains provides insights into the evolution of *Treponema pallidum* subsp. pallidum, the Syphilis Spirochete. Kumar S, Caimano M.J, Anand A, **Dey A**, Hawley K.L, et.al (2018), *mBio*, **9** (3), e01006-18.

Current perspectives of telomerase structure and function in eukaryotes with emerging views on telomerase in human parasites. **Dey A**, Chakrabarti K (2018), *International Journal of Molecular Sciences*, **19**, 333.

Peptide uptake is essential for *Borrelia burgdorferi* viability and involves structural and regulatory complexity of its oligopeptide transporter. Groshong A.M, **Dey A**, Bezsonova I, Caimano M, Radolf J.D. (2017), *mBio*, **8** (6), e02047-17.

The major outer sheath protein forms distinct conformers and multimeric complexes in the outer membrane and periplasm of *Treponema denticola*. Puthenveetil R, Kumar S, Caimano M.J\*, **Dey A\***, Anand A\*, Vinogradova O, Radolf, J.D. (2017), *Nature Scientific Reports*, **7 (13260)**, 13550-13556. \***Equal contribution**

Crystal Structure of *Mycobacterium tuberculosis* H37Rv AldR (rv2779c), a regulator of the ald gene: DNA-binding and identification of small-molecule inhibitors. **Dey A**, Shree, S, Pandey, S.K., Tripathi, R. P., Ramachandran, R. (2016), *Journal of Biological Chemistry*, **291 (23)**, 11967-11980.

Cloning, Overexpression, Purification, and preliminary X-ray analysis of a feast/famine regulatory protein (Rv2779c) from *Mycobacterium tuberculosis* H37Rv. **Dey A**, Ramachandran, R. (2014) *Acta Crystallographica Sect F*, **F70**, 97–100. (Crystal image on cover of ActaF 2015)

Ligand-induced structural transitions, mutational analysis and ‘open’ quaternary structure of the *M. tuberculosis* Feast/Famine Regulatory protein (Rv3291c). Shrivastava, T, **Dey A**, Ramachandran, R (2009) *Journal of Molecular Biology*, **392**, 1007–1019.

### **Conference/Meetings and Invited talks**

---

**Dey A**, Laederach A, Conformational “ON” and “OFF” switch of RNA Frameshift element regulating Programmed Ribosomal Frameshifting in SARS-CoV-2 virus, **RNA society of North Carolina-2022**, NC, USA.

Klotz K, **Dey A**, Saha A, Li B, Chakrabarti K Structural and Functional Profiling of telomerase RNA domain deletion mutants in *Trypanosoma brucei*, a deep-branching parasitic agent of neuropathology in mammals, **Rustbelt RNA meeting-2022**, OH, USA.

Klotz K, **Dey A**, Eklund AM, Saha, A, Davis J, Li B, Laederach A, Chakrabarti K, High-resolution profiling of Telomerase RNA structure dynamics in the eukaryotic pathogen *Trypanosoma brucei*, **Rustbelt RNA meeting-2021**, Virtual meeting, **(abstract selected for podium presentation)**

**Dey A**, Eklund AM, Saha, A, Li B, Laederach A, Chakrabarti K, Novel features of telomerase RNA folding and interactions in *Trypanosoma brucei* telomerase ribonucleoprotein complex, **RNA Society-2020**, Virtual meeting.

**Dey A**, Saha, A, Eklund AM, Laederach A, Li B, Chakrabarti K, Structural and Mechanistic insight into *T. brucei* Telomerase RNA, **Kinetoplastid Molecular and Cell Biology meeting-2019**, MA, USA.

Chakrabarti K, **Dey A**, Novel aspects of Telomerase RNA regulation in Kinetoplastid pathogen, *Trypanosoma brucei*, **Telomeres and Telomerase-2019**, Cold Spring Harbor Laboratory, NY, USA.

**Dey A, Fessler A, Ogle C, Chakrabarti K, Structural imprints of in vivo RNA folding in human parasites, Rustbelt RNA meeting-2018, OH, USA.**

**Dey A, Ravishankar R, Crystal Structure of the Feast-famine regulatory protein (Rv2779c) from *M. tuberculosis*, 42nd National Seminar on Crystallography- 2013, New Delhi, India (abstract selected for podium presentation)**

**Dey A, Ravishankar R, Structural and Functional studies of transcriptional regulatory protein (Rv2779c) from form *M. tuberculosis* H37Rv, EMBO global exchange lecture course-2012, Hyderabad, India.**

**Dey A, Shrivastava T, Ravishankar R, Feast-famine regulatory protein of *M. tuberculosis* H37Rv, Mini symposium on macromolecular crytsallography-2011, Hyderabad, India (abstract selected for podium presentation)**

### **Courses and Training**

---

**CCP4 study weekend- From Crystals to Structure with CCP4-2010, University of Nottingham, Nottingham, United Kingdom.**

### **Mentoring Experience**

---

Talaria Summer Institute Research Program	2022
Elizabeth Abrash, PhD student, UNC-Chapel Hill	2020
Tiffany Barwell, (NSF-REU), UNC-Charlotte	2019
Sarah Catherine Paschall (NSF-REU), UNC-Charlotte	2019
Diana Renteria Alvarez (Honors Student), UNC-Charlotte	2018-2019
Justin Davis, (NSF-REU), UNC-Charlotte	2018
Isabella Sabato, UNC-Charlotte	2017-2018
Debarati Bhanja, (NSF-REU), CMU	2017
Jyoti, (Project Assistant-II), CSIR-CDRI	2012-2013

### **Professional affiliation**

---

RNA Society-Postdoc member	2020-present
American Heart Association member	2018-2021
Indian Crystallographic Association member (SM 191)	2013-present

### **Scientific Outreach**

---

<b>Guest Editor, <i>Journal of Visualized Experiments (JoVE)</i> (<i>RNA Biology: Current Methods and Protocols</i>)</b>	2022
<b>Reviewer, <i>Vaccines</i></b>	2023
<b>Reviewer, <i>Non-Coding RNA Research</i></b>	2022-Present
<b>Reviewer, <i>STAR Protocols (Cell Press)</i></b>	2022-Present
<b>Reviewer, <i>RNA Biology</i></b>	2022-Present

<b>Reviewer, RNA</b>	2022-Present
<b>Reviewer, BioChem</b>	2022-Present
<b>Reviewer, Healthcare</b>	2022-Present
<b>Reviewer, Non-Coding RNA</b>	2021-Present
<b>Reviewer, International Journal of Molecular Sciences (IJMS)</b>	2021-Present
<b>Reviewer, Current Issues in Molecular Biology (CIMB)</b>	2021-Present
<b>Reviewer, Antibiotics</b>	2021-Present
<b>Reviewer, Pharmaceuticals</b>	2021-Present
<b>Judge, ENVISION Research Competition by Women in STEM (WiSTEM)</b>	2022
<b>Judge, North Carolina Student Academy of Sciences (NCSAS)</b>	2021
<b>Judge, North Carolina Science and Engineering Fair (NCSEF)</b>	2021