



SAPIENZA
UNIVERSITÀ DI ROMA

NETADIS MTR Meeting

Araks Martirosyan

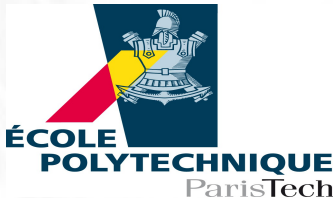
Paris, 23.01.2014

My Way



SAPIENZA
UNIVERSITÀ DI ROMA

PhD, Applications of Statistical Physics and Information Theory
on Biology



Stage, Modeling of Cell Metabolism



MS-2, Theoretical Physics and Applications/ Complex Systems



Stage, Virus Evolution Models



MS-1, Theoretical Physics

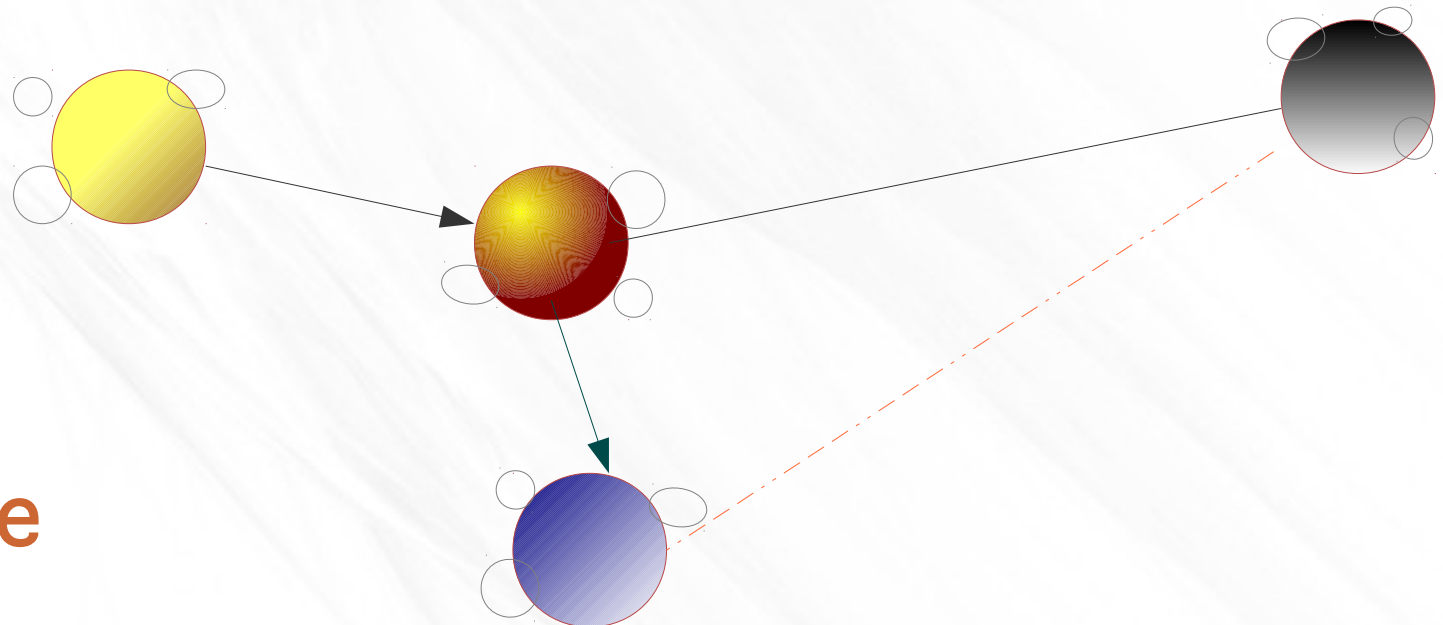
BS, Applied Physics and Mathematics

Project

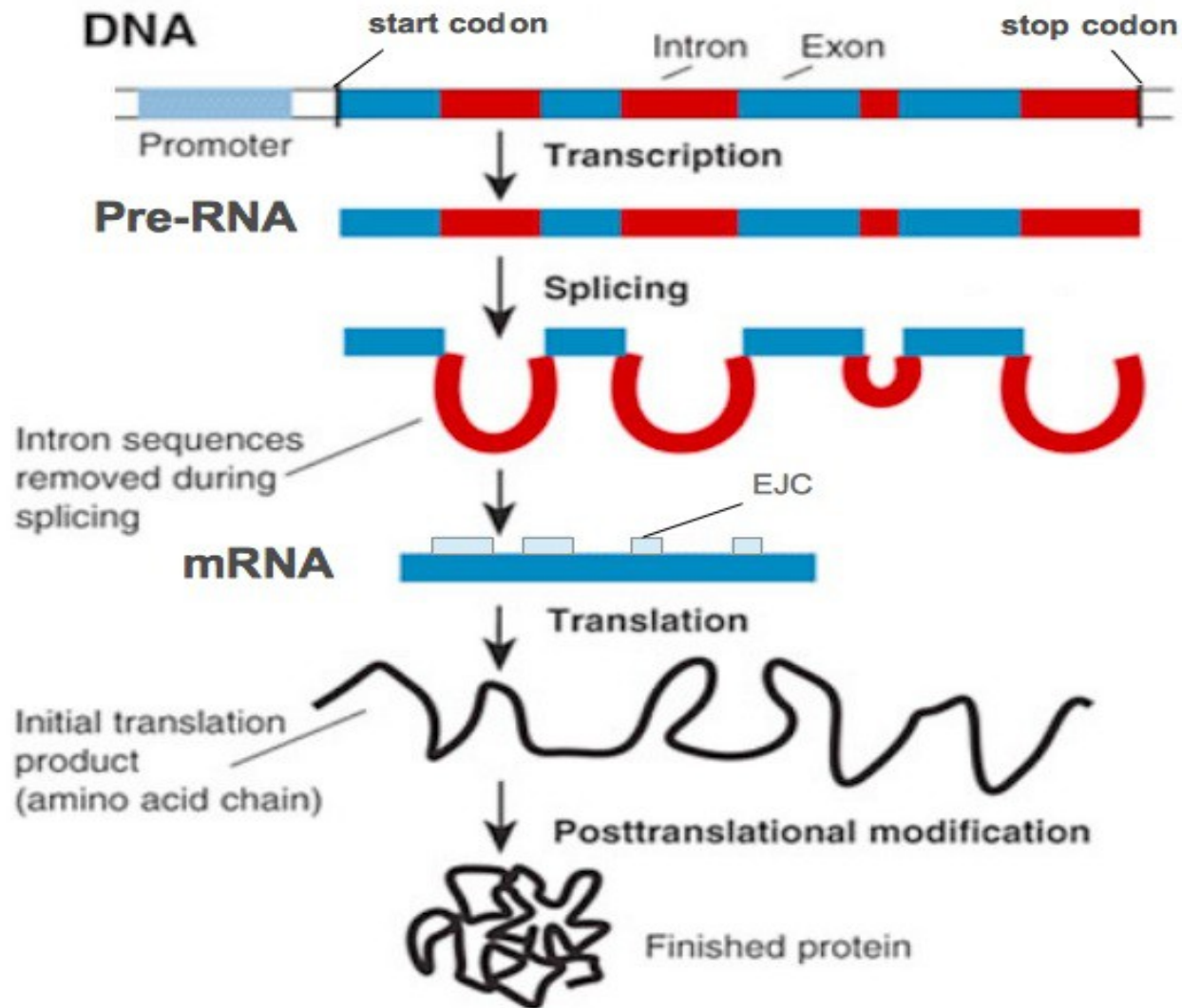
STATISTICAL PHYSICS APPROACH TO POST-TRANSCRIPTIONAL REGULATION

Advisors: Enzo Marinari, Andrea De Martino

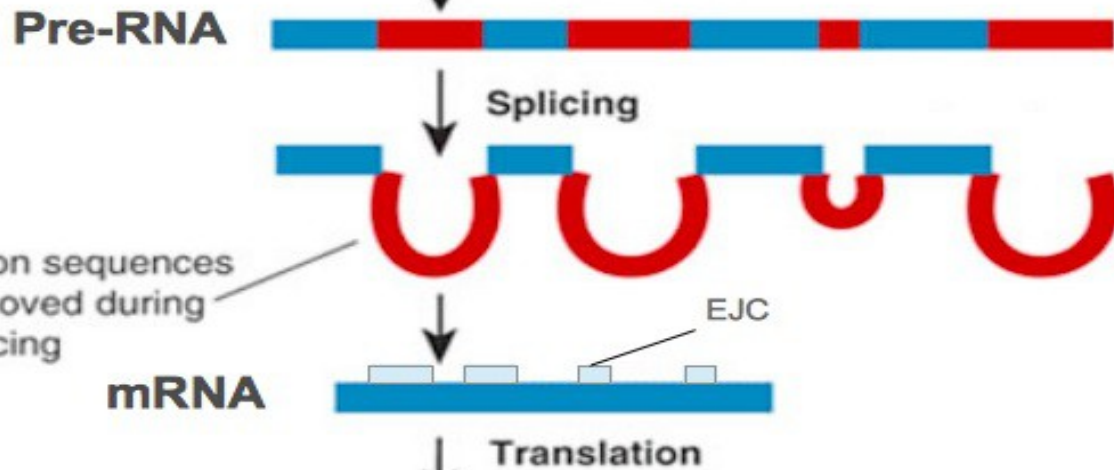
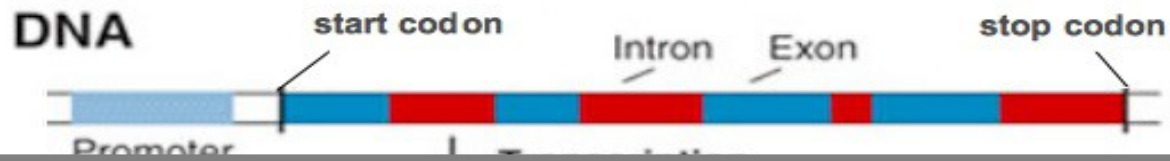
+ noise



Channel: Gene Expression



Focus: the role of miRNAs for PTR



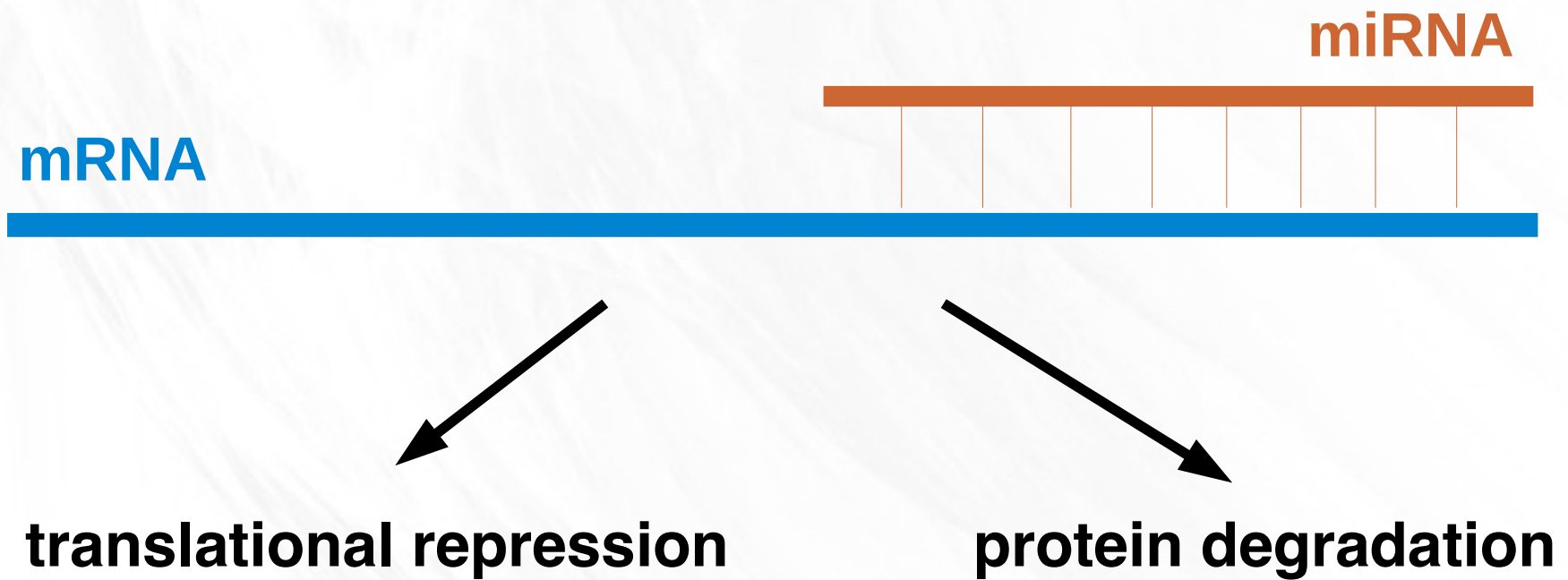
Initial translation product
(amino acid chain)

Posttranslational modification

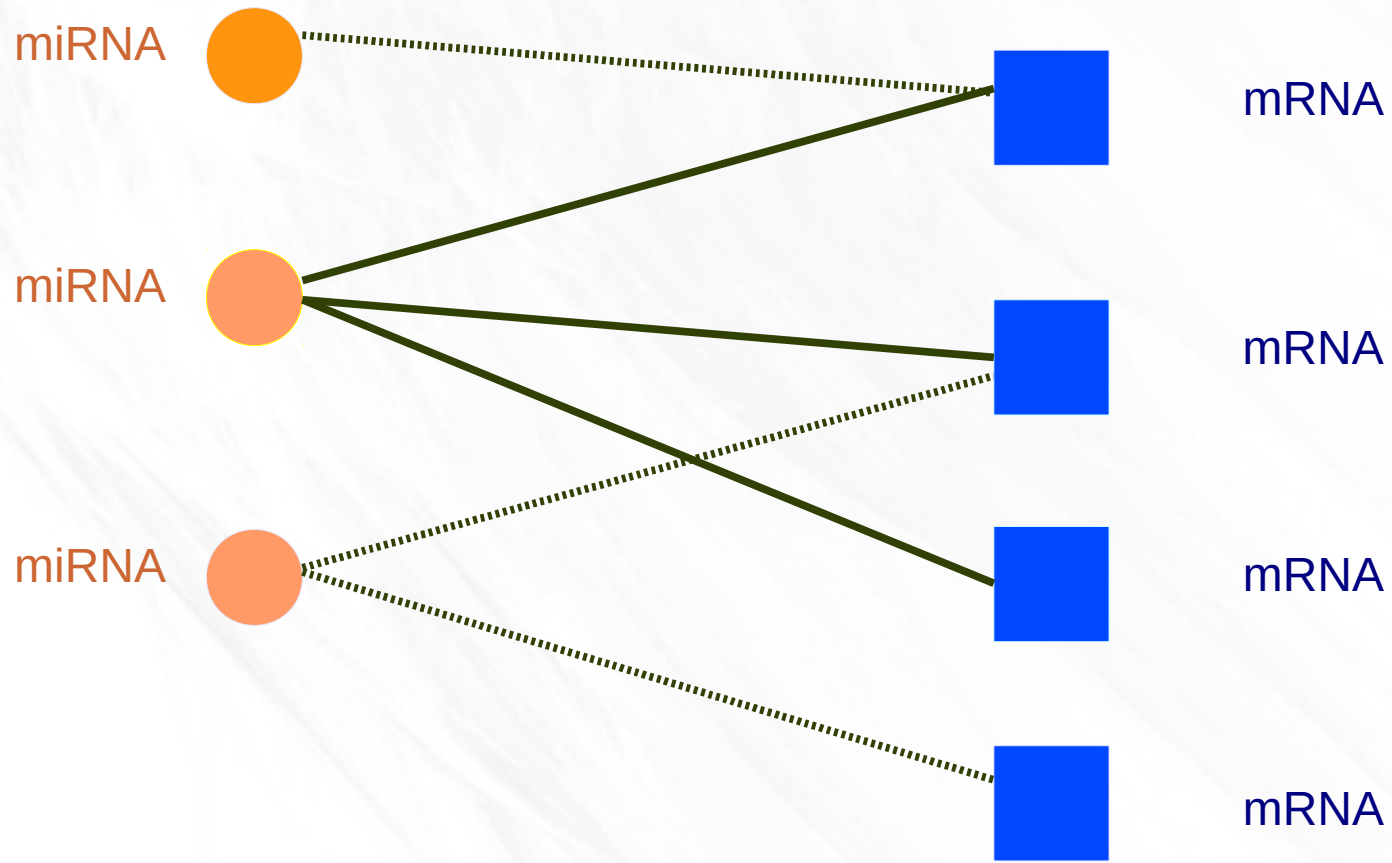


Post
Transcriptional
Regulation

MiRNA (microRNA)



Databases => Network



Tasks

Research skills
and
techniques

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Group Meetings

1. Seminar Cycle,
2. Journal Club,
3. Department Seminars.

Local Courses

1. *Introduction to Information, Physics and Computation* by I. P. Castillo,
2. *Spin glasses* by A. Cavagna,
3. *Theory of Structural Glasses* by L. Leuzzi,
4. *Bayes Inference and Learning* by J. Raymond,
5. *Random Graphs* by M. Isopi.

Tasks

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Schools/Workshops/Conferences

1. *“Statistical Physics and Information Processing in Biology”*, December 10-11, 2012, IHP, Paris;
2. *“Statistical Mechanics of Biological Cooperativity”*, May 22-25, 2013, Åland;
3. *“Physics of Complex Systems”*, May 20- June 14, 2013, Trieste;
4. *“Fundamental Problems in Statistical Physics XIII”*, June 16-29, 2013 , Leuven;
5. *NETADIS 1st Summer School*, September 8-33, 2013, Hillrød.

Tasks

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MiRNA-mediated effects on PTR

Quantify of the role of
miRNAs for PTR

Integrate miRNAs
to other PTR

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MiRNA-mediated effects on PTR

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Integrate miRNAs
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Collaboration with:

M. Figliuzzi, ENS, Paris;

R. Zecchina, A. Pagnani, C. Bosia, C. Baldassi, HUGEF, Torino;

C. Giorgi, European Brain Research Institute, Rome.

1st secondment,
September-October,
2013, Torino

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Communication Skills

articles

seminars

posters

work with
experimental
groups

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Research skills
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Future

high profile
post-doc position

permanent
position

Thank you!