FASEB Summer Research Conference

Posttranscriptional Control of Gene Expression

Copper Mountain, Colorado
July 16 - July 21, 2000

Conference Chairman - Bob Simons _ University of California, Los Angeles
Conference Vice Chairman - Stan Cohen _ Stanford University School of Medicine, Palo Alto

Organizing Committee
Lynne Maquat _ Roswell Park Cancer Institute, Buffalo
John McCarthy _ University of Manchester Institute of Science and Technology (UMIST)
Yoshi Nakamura _ University of Tokyo

PROGRAM

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Sunday, July 16

ARRIVAL AND RECEPTION

6:00 p.m.  Informal Reception
7:00 p.m.  Dinner
8:30 p.m.  Welcoming Remarks: Bob Simons and Stan Cohen
Monday, July 17

7:30 a.m. BREAKFAST

SESSION 1 - Ribonucleases and multicomponent degradative "machines" (chaired by Murray Deutscher)

9:00 a.m. Probing RNA recognition and cleavage by the RNaseE family using synthetic oligoribonucleotide substrates
Kenneth McDowall, University of Leeds

9:25 a.m. Identification of the gene encoding the 5S ribosomal RNA maturase in *Bacillus subtilis* suggests conservation of an RNase E-independent mechanism in low G+C Gram-positive bacteria
Ciarán Condon, Institut de Biologie Physico-Chimique, Paris

9:50 a.m. COFFEE

10:10 a.m. RNases in bacterial RNA processing and decay
Murray Deutscher, University of Miami School of Medicine

10:35 a.m. Nmd3p directs nuclear export of the 60S ribosomal subunit in yeast
Arlen Johnson, University of Texas, Austin

11:00 a.m. Ribonuclease activities on small RNAs in *Bacillus subtilis*
David H. Bechhofer, Mount Sinai School of Medicine, New York*

11:25 a.m. The TOR (target of rapamycin) signaling pathway regulates mRNA turnover in the yeast *Saccharomyces cerevisiae*.
Carolyn J. Decker, Washington State University, Pullman*

12:00-1:30 p.m. LUNCH

6:00 p.m. DINNER

SESSION 2 - More Enzymes and "machines" (chaired by A.J. Carpousis)

7:00 p.m. Going in circles: Circular *rpsT* mRNA and a looping model for degradosome action
George Mackie, University of British Columbia, Vancouver

7:30 p.m. Intercalating drugs as probes of the ribonuclease III mechanism of action
Allen Nicholson, Wayne State University, Detroit

8:00 p.m. A role for yeast RNase III in the control of stress-induced gene expression
Guillaume Chanfreau, University of California, Los Angeles

8:30 p.m. The ATPase and helicase activities of the *E. coli* RNA degradosome are coordinated by the interaction between RhlB and RNase E
A.J. Carpousis, CNRS, Toulouse

9:00 p.m. RNA degradosome proteins in *E. coli* cells
Sue Lin-Chao, Academia Sinica, Taiwan

9:30 p.m. Post-transcriptional regulation of thymidylate synthetase gene expression by LSF
Lee Johnson, Boston University*
Tuesday, July 18

7:30 a.m.  BREAKFAST

SESSION 3 - Regulation of mRNA decay (chaired by Joel Belasco)

9:00 a.m.  Control of mRNA longevity in *E. coli* by stem-loop structures within the 5’ untranslated region: influence on the susceptibility of mRNA to degradation by RNase E and RNase G
Joel Belasco, New York University School of Medicine

9:25 a.m.  Post-transcriptional Regulation of DNA Replication Genes during the Cell Cycle in *Crithidia fasciculata*
Dan S. Ray, University of California, Los Angeles*

9:50 a.m.  COFFEE

10:10 a.m.  Hfq (HF1) stimulates *ompA* mRNA decay by interfering with ribosome binding
Alex von Gabain, University of Vienna

10:35 a.m.  Regulation of mRNA abundance by receptor signaling pathways
TJ Murphy, Emory University, Atlanta*

11:00 a.m.  Regulation of ARE-mediated mRNA turnover in *Saccharomyces cerevisiae*
Stuart W. Peltz, Robert Wood Johnson Medical School-University of Medicine and Dentistry of New Jersey, Piscataway*

11:25 a.m.  Engineering mRNA stabilizing elements to achieve coordinated differential expression of two genes
Christina D. Smolke, University of California, Berkeley*

12:00-1:30 p.m.  LUNCH

SESSION 4 - Posters - 2:00 - 4:00 p.m.

6:00 p.m.  DINNER

SESSION 5 - Translation: From the beginning (chaired by Mathias Springer)

7:00 p.m.  The Structure and Function of Mammalian Initiation Factors
John Hershey, University of California, Davis

7:30 p.m.  Translation initiation by internal ribosome binding in cellular and viral mRNAs
Peter Sarnow, Stanford University School of Medicine, Palo Alto

8:00 p.m.  Alternate Readouts of the Genetic Code
Ray Gesteland, University of Utah, Salt Lake City

8:30 p.m.  A link between programmed +1 translational frameshifting and the accuracy of translational initiation
Phil Farabough, University of Maryland, Baltimore

9:00 p.m.  New modulatory features of the yeast translation factor eIF4G
John McCarthy, University of Manchester Institute of Science and Technology (UMIST)

9:30 p.m.  OPEN
Wednesday, July 19

7:30 a.m. BREAKFAST

SESSION 6 - Translation: To the end and back (chaired by Ray Gesteland)

9:00 a.m. SsrA-mediated trans-translation of the E.coli lacI mRNA and its physiological significance  
Hiroji Aiba, Nagoya University

9:25 a.m. The mysterious roles of IF3 during initiation of protein synthesis in bacteria  
Mans Ehrenberg, Uppsala University

9:50 a.m. COFFEE

10:10 a.m. Probing ribosomal P-site function with mutations and drugs  
Bob Simons, University of California, Los Angeles

10:35 a.m. The mechanism and accuracy for deciphering stop codons by tripeptide 'anticodon' of polypeptide release factors  
Yoshi Nakamura, University of Tokyo

11:00 a.m. Inhibitors of the RRF (ribosome recycling factor) reaction. It’s significance in the action of RRF, a near perfect tRNA mimic  
Akira Kaji, University of Pennsylvania, Philadelphia*

11:25 a.m. Estradiol up-regulates estrogen receptor mRNA via discrete sequences of the message  
Nancy H. Ing, Texas A&M University, College Station*

12:00-1:30 p.m. LUNCH

SESSION 7 - Afternoon Round-Table Discussion - 2:00-3:30 p.m. - "To be announced"

6:00 p.m. DINNER

SESSION 8 - Regulating translation by diverse mechanisms (chaired by Alan Hinnebusch)

7:00 p.m. Quantity surveying at the post-transcriptional level: the need for numbers to understand translational control  
Maartin de Smit, Erasmus University, Rotterdam

7:30 p.m. Mechanism of translational control in yeast by phosphorylation of initiation factor 2  
Alan Hinnebusch, National Institutes of Health, Bethesda

8:00 p.m. Mimicry between mRNA and tRNA recognition by E. coli threonyl-tRNA synthetase  
Mathias Springer, Institut de Biologie Physico-Chimique, Paris

8:30 p.m. fhlA antisense regulation by OxyS RNA  
Shoshy Altuvia, Hebrew University-Hadassah Medical School, Jerusalem

9:00 p.m. The translational regulation of RpoS in response to some environmental signals is mediated by two small RNAs: DsrA and RprA  
Nadim Majdalani, National Institutes of Health, Bethesda*

9:30 p.m. Cold-temperature reversal of polynucleotide phosphorylase translational repression  
Rudy Beran, University of California, Los Angeles*
Thursday, July 20

7:30 a.m. BREAKFAST

SESSION 9 - The complex roles of 3'-polyadenylation (chaired by Philippe Regnier)

9:00 a.m. Polyadenylation in *Escherichia coli* is an integral feature of mRNA decay
Sydney Kushner, University of Georgia, Athens

9:30 a.m. Metabolism of bacterial poly(A) tails and mRNA stability
Philippe Regnier, Institut de Biologie Physico_Chimique, Paris

9:50 a.m. COFFEE

10:10 a.m. Polyadenylation and Degradation of mRNA in the Chloroplast and Bacteria
Gadi Schuster, Technion_Israel Institute of Technology, Haifa

10:35 a.m. The Chloroplast mRNA 3'-End Nuclease Complex: Structure, Function and Regulation
Sacha Baginsky, University of California, Berkeley

11:00 a.m. Three stories about RNA processing and decay
Stan Cohen, Stanford University, Palo Alto

11:25 a.m. The functions and targets of yeast PUF proteins: Puf5p binds to and activates *DHH1* mRNA in *S. cerevisiae*
Jeff Coller, University of Wisconsin, Madison

12:00-1:30 p.m. LUNCH

SESSION 10 - Afternoon Round Table Discussion - 2:00-3:30 p.m. - "To be announced"

6:00 p.m. DINNER

SESSION 11 - Connections between translation and decay (chaired by Lynn Maquat)

7:00 p.m. Interactions between mRNA and decapping factors in the mRNP complex at the time of decapping
Sundaresan Tharun, University of Arizona, Tucson

7:30 p.m. Regulation of events in translation termination by components of the nonsense-mediated mRNA decay pathway
Allan Jacobson, University of Massachusetts Medical School, Worcester

8:00 p.m. Search for factors required for nonsense-mediated mRNA decay in mammalian cells: identification and characterization of splicing factors that constitute mRNP and human orthologues to *S. cerevisiae* Upf2p and *S. cerevisiae* Upf3p/*C. elegans* SMG4
Lynn Maquat, Roswell Park Cancer Institute, Buffalo

8:30 p.m. Interplay between translation and mRNA decay in E. coli and T7 bacteriophage
Marc Dreyfus, CNRS, Paris

9:00 p.m. The relation between bacterial transcriptional and post-transcriptional factors in the regulation of cell growth and survival
Cecilia Maria Arraiano, Universidade Nova de Lisboa, Oeiras

9:30 p.m. OPEN
**Friday, July 21**

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<tr>
<th>Time</th>
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<tr>
<td>7:30</td>
<td>BREAKFAST</td>
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<td><strong>SESSION 12 - Emerging themes (chaired by Pam Green)</strong></td>
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| 9:00 a.m. | Cold Shock Protein CsdA, a DEAD-Box Protein Positively Affects Heat Shock Protein Synthesis at Low Temperatures  
Pamela Jones, University of Georgia, Athens |
| 9:25 a.m. | Characterization of the developmental regulation and functional properties of Drosophila ribonucleases  
Sarah Newbury, University of Oxford* |
| 9:50 a.m. | COFFEE                                      |
| 10:10 a.m. | Application of Genetic and Genomic Approaches to the Study of mRNA Stability in Arabidopsis  
Pam Green, Michigan State University, East Lansing |
| 10:35 a.m. | Emerging features of mRNA degradation in bacteria revealed by the filamentous phage genomic mRNAs  
Deborah A Steege, Duke University Medical Center, Durham* |
| 11:00 a.m. | FRAP/mTOR signaling to translation initiation  
Brian Raught, McGill University, Montreal |

**DEPARTURE**

*Speakers chosen from submitted abstracts.*