



# MINIM



Volume 21, Issue 4-5

BIOCHEMISTRY NEWSLETTER

April/May 2007

## CHAIRMAN'S CORNER

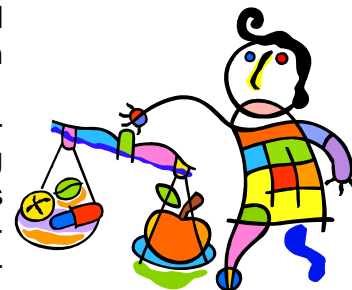
### *Nutrition and Obesity - Fall 2007 Seminar Series*

Written by Dr. Kiran Chada

The incidence of obesity has reached epidemic proportions in the United States and worldwide. The US National Center for Health Statistics (2006) reports that fully one-third of American adults are obese, having a Body Mass Index (BMI) exceeding 30. Statistics from the International Task Force on Obesity reports that number to be 300 million adults worldwide. In children, the occurrence of obesity has doubled in the last thirty years and it is now estimated that one in five children in the United States is overweight.

Obesity is a primary condition predisposing patients to the development of a number of other serious and common diseases including type II diabetes, cardiovascular disease, and certain cancers. This substantial fraction of the adult US population makes obesity the second leading cause of preventable death in the United States, contributing to 400 thousand deaths annually.

The biochemical basis of obesity is the theme of the Department of Biochemistry's Fall 2007 Seminar Series. This timely series and the graduate course (BIOC 5087) that coincides with it, are being organized by Dr. Kiran Chada. Among the featured speakers is Dr. Jeffrey Friedman (HHMI and Rockefeller University), who cloned the *ob* allele from mice, one of the first genes to be identified in the control of satiety. BIOC 5087 is open to all students who have completed the first year Molecular Biosciences core curriculum.



### *Departmental News*

Congratulations to **Ann Stock** who was elected to Fellowship in the American Academy of Microbiology.

Congratulations to **Kavitha Sarma** (Danny Reinberg's lab) who defended her thesis entitled, "Regulation of Repressive Lysine Methyl Marks: H4K20 and H3K27 Methylation" on March 15, 2007.



Congratulations to **Takeshi Yoshida** (Masayori Inouye's lab) who defended his thesis entitled, "Studies on Molecular Mechanism of Gene Regulation of *ompF* and *ompC* by EnvZ-OmpR Phosphorelay System in *Escherichia Coli*" from Nagoya University, School of Bioagricultural Sciences, Japan on March 23, 2007.

(Continued on page 2)

**Departmental (continued from page 1)**

Congratulations to **Vasanti Anand** (Smita Patel's lab) who defended her thesis entitled, "Mechanism of Transcription Elongation Catalyzed by Single Subunit Bacteriophage T7 RNA Polymerase" on April 20, 2007.

**Raymond Habas** was awarded a grant from the March of Dimes entitled, "Understanding how Wnt signaling regulates cellular motility during gastrulation" in the amount of \$297,000 for three years effective 06/01/07-05/31/10.

*Seminars/Presentations*

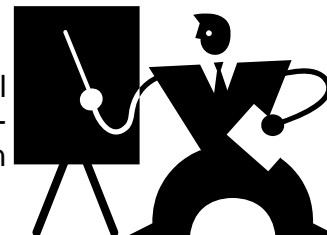
**Mike Hampsey** presented a seminar entitled, "DNA loops and RNA polymerase II transcription" at Purdue University on March 20, 2007.

**Masayori Inouye** presented a lecture entitled, "Single Protein Production in Living Cells" on April 6, 2007 at the Kyorin Pharmaceutical Company, Japan.

**Masayori Inouye** presented a talk entitled, "Single Protein Production in Living Cells" at the NIH PSI Bottlenecks Workshop from March 18 - 20, 2007.

**Raymond Habas** was an invited speaker at the Mid-Atlantic Regional Society for Developmental Biology Meeting held at Princeton on March 30-31, 2007 and presented a seminar entitled, "Dissecting the molecular mechanisms of Wnt signaling."

**Akira Sato** (Habas lab) presented a poster at the Mid-Atlantic Regional Society for Developmental Biology Meeting on March 30-31, 2007 entitled, "Characterization of a novel modulator of Wnt signaling" and won the best poster award.



**Deepak Khadka** (Habas lab) presented a poster at the Mid-Atlantic Regional Society for Developmental Biology Meeting on March 30-31, 2007 entitled, "Profilin1 and Profilin2 are non-redundant effectors for Daam1 in non-canonical Wnt signaling and have distinct functions in gastrulation."

**Wei Liu** (Habas Lab) presented a poster at the Mid-Atlantic Regional Society for Developmental Biology Meeting on March 30-31, 2007 entitled, "Characterization of a new factor in non-canonical Wnt signaling."

**Smita Patel** presented a seminar in the Department of Biochemistry and Molecular Biology at the U. of Florida Medical School in March 2007 on "DNA replication: roles of helicase and polymerase proteins."

**Smita Patel** was invited to talk at the American Physical Society meeting in Denver, CO in March 2007 on the "Mechanism of DNA helicases."

## Publications

Picha, K.M., **Patel, S.S.**, Mandiyan, S., Koehn, J. and Wennogle, L.P. (2007) The role of the C-terminal domain of protein tyrosine phosphatase-1B in phosphatase activity and substrate binding. *J. Biol. Chem.* 282(5):2911-7.

Singh, K., Srivastava, A., **Patel, S.S.** and Modak, M.J. (2007) Participation of the Fingers Subdomain of *Escherichia coli* DNA Polymerase I in the Strand Displacement Synthesis of DNA. *J. Biol. Chem.* 282(14):10594-604.

Gao, R., Mack, T.R. and **Stock, A.M.** (2007) Bacterial response regulators: versatile regulatory strategies from common domains. *Trends Biochem. Sci.* 23(5):225-34.

Shimazu, T., Degenhardt, K., Nur-E-Kamal, A., Zhang, J., Yoshida, T., Zhang, Y., Mathew, R., White, E. and **Inouye, M.** (2007) NBK/BIK antagonizes MCL-1 and BCL-XL and activates BAK-mediated apoptosis in response to protein synthesis inhibition. *Genes Dev.* 21(8):929-41.



D'Armiento, J., Imai, K., Schiltz, J., Kolesnekova, N., Sternberg, D., Benson, K., Pardo, A., Selman, M., Smolarek, T., Vundavalli, M., Sonnet, J., Szabolcs, M. and **Chada, K.** (2007) Identification of the benign mesenchymal tumor gen HMGA2 in lymphangiomyomatosis. *Cancer Res.* 67(5):1902-9.

### In Press:

He, X and **Habas, R.** (2007). Moving to a Wnt Rap. *Current Biology.*

Yin, C., Khan, J.A., Swapna, G.V., Ertekin, A., Krug, R.M., Rong, L. and **Montelione, G.T.** (2007) Conserved surface features form the double-stranded RNA-binding site of non-structural protein 1 (NS1) from influenza A and B viruses. *J. Biol. Chem.*

Aramini, J.M., Rossi, P., Anklin, C., Xiao, R. and **Montelione, G.T.** (2007) Microgram-scale protein structure determination by NMR. *Nat. Methods.*

Donmez, I., Rajagopal, V., Jeong, Y-J., and **Patel, S.S.** (2007) Unwinding Activity of Ring Shaped and Non-Ring Shaped Helicases is Sensitive to Base Pair Stability. *J. Biol. Chem.*

**Phadtare, S.**, Kazakov, T., Bubunenko, M., Court, D.L., Pestova, T. and Severinov, K. (2007) Transcription antitermination by translation initiation factor IF1. *J. Bacteriol.*

Friedland, N., Mack, T.R., Yu, M., Hung, L.W., Terwilliger, T.C., Waldo, G.S. and **Stock, A.M.** (2007) Domain Orientation in the Inactive Response Regulator Mycobacterium tuberculosis MtrA Provides a Barrier to Activation(.). *Biochemistry.*

### Submitted:

Bandwar, R.P., Ma, N., Emanuel, S.A., Anikin, M., Vassilyev, D.G., **Patel, S.S.** and McAllister, W.T. (2007) The Transition To An Elongation Complex By T7 Rna Polymerase Is A Multistep Process.