MBC Prion Expert Wins Awards


Misfolding and aggregation of prion proteins have been linked to severe human and animal maladies such as bovine spongiform encephalitis, also known as Mad-Cow Disease, and its human counterpart, Creutzfeld-Jakob Disease. It has been postulated that the infectious agent of prion diseases, PrPSc, is the normal prion...
Dr. Jennie Hunter-Cevera, UMBI President, and all of the Center Directors met at their annual retreat on May 28, 2004. Held informally and off campus, it is a chance for them to discuss cross-center issues and develop long-term plans. It is also a chance for them to catch up on what other Centers have been doing and to strengthen inter-center bonds. While staff and faculty may not notice the difference, a united leadership can only benefit all of UMBI in the long run.

The Maryland State Legislature and Governor Erhlich approved both cost of living and merit raises for all state employees. The last cost of living increase was in January of 2002 and merit raises have not been allowed since 2001. This time cost of living increases were given as an across the board amount instead of a percentage, having a greater impact on those employees in the lower end of the salary scale who are most affected by changes in the cost of living. It is the merit raises, however, that are most welcomed. All state employees are looking forward to some reward for their hard work and dedication in whatever capacity they serve the state.

MBC wishes to congratulate Dr. Jennie Hunter-Cevera, UMBI President, on winning the USFCC/J. Roger Porter Award. The Award, supported by the United States Federation for Culture Collections (USFCC) and The American Society for Microbiology (ASM), recognizes individuals who have “demonstrated the importance of microbial biodiversity through sustained curatorial or stewardship activities for a major resource used by the scientific community.” The award was given at the annual meeting of the ASM in New Orleans, LA. Dr. Hunter-Cevera also delivered the Award Lecture, entitled “Cultural Experiences of Thinking Like a Microbe.” Her work on isolating and screening microorganisms and on maintaining culture collections is well known.

MBC Professor, Joseph Kao, along with UMB colleagues Mordecai Blaustein and Donald R. Matteson has written a new text book entitled *Cellular Physiology*. The book is part of the Mosby Physiology Monograph Series published by Elsevier Mosby of Philadelphia, PA. It came out in June.
Heart Research in New Hampshire

Several members of the Institute for Molecular Cardiology attended one of the many Gordon Research Conferences (GRC) organized by the American Association for the Advancement of Science (AAAS). The conferences are unique in both their format and the range of scientific disciplines covered—everything from atomic interactions to neural development to rock formation. Each conference is designed to focus on one narrow area and provide a forum for discussion of differing views. They last a week, are usually held on a campus of a small college and attendee numbers are limited. The small groups and informal atmosphere make these meetings particularly intense but exhilarating. Attendees come back enthusiastic and full of ideas.

MBC Director, W. Jonathan Lederer, was a discussion leader for the conference entitled “Cardiac Regulatory Mechanisms” held at Colby-Sawyer College in New London, New Hampshire, June 6-11, 2004. He chaired the session “Excitation-Contraction Coupling in Normal and Diseased Hearts.” MBC faculty members Drs. Silvia Guatimosim and Long-Sheng Song presented a joint poster entitled “Quasi-diastolic Sparks Contribute to Diastolic Signaling Dysfunction.” This poster included co-authors S. Reiken, K. Gerber and A. Marks from Columbia University; M.A. Matlib from University of Cincinnati; and W. J. Lederer. Graduate student Andy Ziman, at his first Gordon Conference, also presented a poster, “E-C Coupling and Cell Organization in Developing Cardiac Myocytes” with co-authors Nicholas Geisse and Kevin Kit Parker at Harvard and Cecilia Frederick and W. J. Lederer from MBC. First year Research Associate, Dr. N. Leticia Gomez, also attended. All of the participants came back energized and anxious to work on the new ideas generated at this year’s GRC.

Cicadas Continued

Tim’s yard was an extremely good example of how bad it could get.

The periodic cicada’s life cycle is quite unusual. It spends most of its life in the larval stage, feeding underground. The infestation is quite uneven. The longer the ground has been undisturbed the heavier the emergence. Thus newer homes where not as severely impacted as older neighborhoods. After the non-feeding adults emerge, they molt once leaving empty brown shells. The females home in on the males’ “singing” and mate. The females then lay eggs in the tips of tree branches by making a series of small slits in the bark. The adults die after they have procreated, leaving a layer of carcasses on top of the molted shells. The eggs eventually hatch and the larvae fall to the ground and burrow in to eat for seventeen years. The leaves on branch tips often die from the egg laying, leaving trees with many brown tips. While some of these branches will leaf out next year, many die and break off. This could be considered nature’s way of pruning but home owners would prefer to do it themselves.

The cicadas’ return was the main topic of conversation for most of June. MBC Administrative Assistant and unofficial morale officer, Tongo Best, has proposed celebrating the end of the cicadas with a party. It is scheduled for July, somewhat after the end of the insects’ cyclical demise but no one is likely to forget what is was like when they were here!
Prion Award Continued

protein (PrP) itself converted into a β-sheet-rich conformation. Persistent failure to reconstitute infectivity in vitro has raised growing skepticism regarding the sufficiency of PrP alone to form an infectious agent. The studies presented at the Paris meeting dramatically increase our understanding of the biochemical nature of the prion protein as an infectious agent and provides fundamental insight into the mechanisms of infectious prion biogenesis. Dr. Baskakov’s research is focused on developing an conversion system enabling the reconstitution of an infectious isoform of a prion protein in vitro.

Second NCBI Workshop

The second part of a NCBI Bioinformatics Workshop sponsored by the Program Project Grant, “Local Signals and Macromolecular Architecture in Heart”, Terry Rogers, PI. was held May 25, 2004. This part was just as well attended as the first (Inside MBC, Vol. 7, No. 1) and focused on exploring 3D molecular structure using NCBI applications. These applications take a protein sequence and create possible three dimensional (tertiary) structures based on the functional elements encoded in the protein that govern the folding, twisting or looping of proteins. The course discusses the principles behind the applications, the modifiable parameters and the effect of modifications on possible candidate structures. As proteins act in three dimensional space, the tertiary structure is critical for understanding protein function. The members of the program project include Dr. W. J. Lederer and others in MBC’s Institute of Molecular Cardiology.

Synthesis, conformation, and immunogenicity of monosaccharide-centered multivalent HIV-1 gp41 peptides containing the sequence of DP178. BIOORGANIC & MEDICINAL CHEMISTRY 12 (12): 3141-3148 JUN 15 2004

Talks and Travels


Dr. Ilia Baskakov, Invited speaker, “The Protein Only Hypothesis of Prion Propagation: Myth or Fact?”, Institut de Genetique Humaine, CNRS, Montpellier, France, June 1, 2004 and Laboratoire de Biophysique Moléculaire et Cellulaire, Département de Recherche Fondamentale sur la Matière Condensée, CEA-Grenoble, France, June 3, 2004.


Dr. Bruce Vogel, Seminar Speaker, Max-Planck-Institute for Biochemistry, Martinsried, Germany, “Tissue Morphogenesis in C. elegans: The role of the extracellular matrix”, May 4, 2004 and Max-Planck-Institute for Molecular Genetics, Berlin, Germany “Epithelial Morphogenesis in C. elegans: The role of the extracellular matrix”, May 6, 2004