

## **Bacteriophage Annals - Fall, 2002**

by  
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### **Greetings United Phage Workers!**

**The year 2002 annual ASM meeting:** For those of you unable to make it, Division M made a fine showing at the ASM meeting in Salt Lake City. There were excellent sessions on a variety of phage-oriented topics. Highlights included Roger Hendrix's Divisional Lecture on phage genomics and evolution. The divisional chair, Debbie Hinton, deserves kudos from all of us for her highly successful efforts in putting together a fine program. She was such a fervent advocate of Division M that she narrowly avoided time in the SLC hoosegow.

#### **Awards:**

A new Division M award, the **Nestlé Award**, an amount of \$1000, to be given to the author(s) of the best phage paper in the Journal of Bacteriology during the preceding year, was announced at the Division M business meeting SLC. This award has generously been funded by **Nestlé**. The first awards committee consisted of the Division M chair for 2000, Ry Young, the 2001 Chair, Debbie Hinton, and the 2002 chair-elect, Mike Feiss. The first **Nestlé Award**, for the year 2001, was announced at the meeting. The winning paper, chosen from a field of 26 excellent papers, was:

**Wagner PL, Neely MN, Zhang X, Acheson DW, Waldor MK, and Friedman DI. (2001) Role for a phage promoter in Shiga toxin 2 expression from a pathogenic *Escherichia coli* strain. J Bacteriol 183:2081-5.**

!!!JUST FOR GRADUATE STUDENTS!!! In 2003 we will be awarding the first **Gisela Mosig / New England Biolabs** student travel award for excellence in phage molecular biology. This prestigious \$500 award, generously funded by **New England Biolabs, Inc.**, will sponsor a graduate student to attend the meeting.

#### **Future Meetings:**

The **103<sup>rd</sup> General ASM Meeting will be held May 18 - 22, 2003 in Washington DC**. A Call for Abstracts will be available at the ASM web site, in electronic format, from August onwards. Authors may begin Abstract submissions after September 24, 2002.

The XVIIIth Biennial Conference on Phage/Virus Assembly will be held at the Woods Hole Oceanographic Institute, Woods Hole, Massachusetts, May 31 - June 5, 2003. The meeting will be hosted by Jon King's lab; the web site is [www.phagevirusassembly.org](http://www.phagevirusassembly.org).

**Program development for the annual ASM meeting:** I've learned some stuff about meeting planning in the last few months. Here's some unsolicited advice about preparing and submitting session proposals for the annual ASM meeting. If you have a topic dear to your heart that perhaps has been neglected at the ASM meeting for a while, you can take action by planning a session on the topic. The division chair needs from you a rough outline of the session, including a session title, 5 proposed speakers and perhaps some alternates, their affiliations and tentative presentation topics. Ideally, this outline would be submitted to the chair sometime in June, so that the chair can (1) consider it, (2) consult with other divisional chairs to see if their divisions would be interested in co-sponsoring the session, and (3) put the session up for consideration by the group representative for an at-large session slot. These negotiations are important because the number of sessions allotted to each Division is limited. Now that I understand it, it is clear that the ASM meeting itself is a good place to plan sessions, as many potential speakers are there. Will your proposed session actually happen? Well, it depends on a number of things, including how many slots M has, how many proposed sessions are in the hopper, the timeliness of the proposed session, and, for some cross-cultural sessions, the willingness of other Divisions to co-sponsor the session. This year, there have been

seven sessions proposed, and, M has two guaranteed slots and a shared session with Division S (DNA viruses). For several of the other proposed sessions, we are pursuing co-sponsorships with other Divisions and Groups.

**Membership:** Wanna T-shirt? As always, Division M is looking for new members. We continue to be a small division, small enough that we may be blue-listed again. We are also looking for folks already in M who haven't coughed up for this year to do so.

Why should you join Division M? (1) Well, the quality of the science being done by M'ers is very high (see refs below). One could do worse, in terms of one's career development, than hang around with bright, interactive scientists. (2) The small size of Division M makes for this strongly interactive group, in which materials and ideas are freely shared. In fact, to maintain the friendly, intimate spirit of M, we may someday have to put a cap on it. In the cap-less present though, there's a fashion aspect: (3) new members receive a shiny Phage Workers United T-shirt. Even folks who are already members receive a shiny T-shirt for each new member they Shanghai into M.

**Celebrating Phage Research:** Here is an arbitrary but non-capricious research overview. Lists like this are generally to be avoided: as such a list never is complete. With that qualifier, there is so much exciting phage science going on, it's worth the risk to point out some examples of interesting experiments and provocative ideas. Areas of phage biology with notable recent progress include the following.

#### **Phage-based systems for knocking out and manipulating genes**

- Yu, D, Ellis, HM, Lee EC, Jenkins NA Copeland NG, and Court DL. (2000) An efficient recombination system for chromosome engineering in *Escherichia coli*. Proc Natl Acad Sci U S A. **97**:5978-83
- Datsenko KA, Wanner BL. (2000) One-step inactivation of chromosomal genes in *Escherichia coli* K-12 using PCR products. Proc Natl Acad Sci U S A. **97**:6640-5

#### **Phages and bacterial pathogenesis**

- Liu M, Deora R, Doulatov SR, Gingery M, Eiserling FA, Preston A, Maskell DJ, Simons RW, Cotter PA, Parkhill J, Miller JF. (2002) Reverse transcriptase-mediated tropism switching in *Bordetella* bacteriophage. Science **295**:2091-4.
- Huber KE, Waldor MK. (2002) Filamentous phage integration requires the host recombinases XerC and XerD. Nature **417**:656-659

#### **Phage and virus genomics: Evolutionary implications**

- Rohwer F, and R Edwards (2002) The Phage Proteomic Tree: a Genome-Based Taxonomy for Phage J. Bacteriol. **184**: 4529-4535.
- Lawrence, JG, GF Hatfull, and Hendrix RW (2002) Imbroglions of viral taxonomy: Genetic exchange and failings of phenetic approaches. J. Bacteriol. **184**, 4891-4905.

#### **Phage assembly**

- Kanamaru S, Leiman PG, Kostyuchenko VA, Chipman PR, Mesyanzhinov VV, Arisaka F, Rossmann MG. (2002) Structure of the cell-puncturing device of bacteriophage T4. Nature **415**:553-7.
- Conway JF, Wikoff WR, Cheng N, Duda RL, Hendrix RW, Johnson JE, Steven AC. (2001) Virus maturation involving large subunit rotations and local refolding. Science **292**:744-8.
- Smith DE, Tans SJ, Smith SB, Grimes S, Anderson DL, Bustamante C. (2001) The bacteriophage phi29 portal motor can package DNA against a large internal force. Nature **18**:748-52.

#### **Regulation of gene action**

- Dodd, IB, Perkins, AJ, Tsemitsidis, D, and JB Egan (2001) Octamerization of  $\lambda$  CI repressor is needed for effective repression of  $P_{RM}$  and efficient switching from lysogeny. Genes Dev. **15**:3013-3022
- Pande S, Makela A, Dove SL, Nickels BE, Hochschild A, Hinton DM.(2002) The bacteriophage T4 transcription activator MotA interacts with the far-C-terminal region of the sigma70 subunit of *Escherichia coli* RNA polymerase. J Bacteriol. **184**:3957-64