



PROGRAM

1997 GORDON CONFERENCE
ON
MICROBIAL POPULATION
BIOLOGY

**Plymouth State College, Plymouth N.H.
July 27 - August 1, 1997**

Chair: Julian Adams

Vice Chair: Susan Rosenberg

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Sunday July 27, 1997

2:00 - 11:00 p.m. Registration

6:00 - 7:00 p.m. Dinner

SESSION I. EVOLUTION OF VIRUSES AND PHAGES

7:30 p.m. - 7:45 p.m. Announcements: Julian Adams and Conference Staff

7:45 p.m. - 8:15 p.m. Introduction - Chair: *Allan Campbell* - Department of Biological Sciences, Stanford University

8:15 p.m. - 8:45 p.m. *Roger Hendrix* - Dept. of Biological Sciences, University of Pittsburgh
Genetic mosaicism in natural isolates of temperate bacteriophages

8:50 p.m. - 9:20 p.m. *Sebastian Bonhoeffer* - Dept. Zoology, University of Oxford, U.K.
Dynamics of HIV Infection

9:25 p.m. - General Discussion

Leader: *Rosemary Redfield* - Dept. Zoology, University of British Columbia, Canada.

9:45ish p.m. Reception

Monday, July 28, 1997

7:30 - 8:30 a.m. Breakfast

SESSION II. ANTIBIOTIC RESISTANCE AND EVOLUTION

9:00 - 9:30 a.m. Introduction - Chair: *Stuart Levy* - Tufts University Medical School, Boston

9:30 - 10:00 a.m. *Julian Davies* - Dept. of Microbiology, University of British Columbia, Ca
Origins of Antibiotic Resistance

10:05 - 10:30 a.m. Break and Group Photograph (Weather Permitting)

10:30 - 11:00 a.m. *Fernando Baquero Morales* - Servicio de Microbiología, Hospital Ramón y Cajal, Madrid, Spain
Selective environments and the diversity of resistance mechanisms

11:05 - 11:35 a.m. *Timothy Palzkill* - Dept. of Microbiology, Baylor College of Medicine.
Role of protein plasticity in β -lactamase evolution

11:40 a.m. General Discussion
Leader: *B. Levin* - Dept. Biology, Emory University

12:30 Lunch

1:30 - 6:00 p.m. Free Time & Poster Viewing

6:00 - 7:00 p.m. Dinner

SESSION III. EVOLUTION IN LONG TERM LABORATORY CULTURES

7:30 - 8:00 p.m. Introduction - Chair: *Michel Blot* - Institut de Biologie, Université de Grenoble, France

8:00 - 8:30 p.m. *Richard Lenski* - Center for Microbial Ecology, Michigan State University
Dynamics of adaptation and divergence during 10,000 generations of evolution in E. coli

8:35 - 9:05 p.m. *Roberto Kolter* - Dept. Microbiology and Molecular Genetics, Harvard Medical School
GASPing for life in stationary phase

9:10 p.m. General Discussion: *Susan Rosenberg* - Dept. Biochemistry, University of Alberta, Edmonton

Tuesday, July 29, 1997

7:30 - 8:30 a.m. Breakfast

SESSION IV. EVOLUTION OF VIRULENCE/PATHOGENICITY

9:00 - 9:30 a.m. Introduction - Chair: *Peter Reeves* - Dept. Microbiology, University of Sydney, Australia

9:30 - 10:00 a.m. *Matthew Waldor* - Division of Geographic Medicine and Infectious Diseases, New England Medical Center
Horizontal transfer events in the evolution of pathogenic V. cholerae

10:05 - 10:30 a.m. Break (and group photo if necessary)

10:30 - 11:00 a.m. *Thomas Cebula* - Food and Drug Administration, Washington D.C.
Significance of mutator phenotype among E. coli and S. typhimurium pathogens

11:05 - 11:35 a.m. *Daniel Dykhuizen* - Dept. Ecology and Evolution, S.U.N.Y. Stonybrook
The lyme disease agent as a stealth pathogen

11:40 a.m. General Discussion
Leader: *Richard Goldstein* - Boston University Medical School

12:30 Lunch

1:00 - 6:00 p.m. Free Time & Poster Viewing

6:00 - 7:00 p.m. Dinner

SESSION V. GENOME STRUCTURE

7:30 - 8:00 p.m. Introduction Chair: *John Roth* - Dept. of Biology, University of Utah

8:05 - 8:35 p.m. *Ruth Hall* - C.S.I.R.O., North Ryde Australia
The role of gene cassettes and integrons in genome evolution

8:40 - 9:10 p.m. *Abigail Salyers* - Dept. of Microbiology, University of Illinois
Congugative transposons: a new family of integrative gene transfer elements

9:15 p.m. General Discussion
Leader: *Howard Ochman* - Dept. Biology, University of Rochester, Rochester, N.Y.

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Wednesday, July 30, 1997

7:30 - 8:30 a.m. Breakfast

SESSION VI. APPLICATION OF THE INFORMATION FROM GENOME PROJECTS TO QUESTIONS IN MICROBIAL EVOLUTION.

9:00 - 9:30 a.m. Introduction - Chair: *Paul Sharp* - Dept. Genetics, University of Nottingham, U.K.

9:35 - 10:05 a.m. *Steve Oliver* - Manchester Biotechnology Center, Manchester U.K. M60 1QD UK
Gene and genome evolution in yeast

10:05 - 10:30 a.m. Break

10:30 - 11:00 a.m. *Henry M. Krisch* - CNRS, Toulouse, France
The Role of Genomic Polymorphism in the Evolution of the T-even Bacteriophages

11:05 - 11:35 a.m. *Gary Olsen* - Dept. Microbiology, University of Illinois, Urbana
Tracing the histories of genes in prokaryotes

11:40 a.m. General Discussion

Leader: *George Weinstock* - Dept. Biochemistry, University of Texas Medical School, Houston

12:30 Lunch

1:00 p.m. - 6:00 p.m. Free Time & Poster Viewing

6:00 p.m. - 7:00 p.m. Dinner

SESSION VII. MACROEVOLUTIONARY QUESTIONS AND MICROBES

7:30 - 8:00 p.m. Introduction - Chair: *Daniel Hartl* - Dept. Organismal and Evolutionary Biology, Harvard University

8:00 - 8:30 p.m. *Margaret Saks* - Division of Biology, California Institute of Technology, Pasadena
An experimental approach to the question of the evolution of the genetic code

8:35 - 9:05 p.m. *Nancy Moran* - Dept. Ecology and Evolutionary Biology, University of Arizona
Evolution of prokaryotic endosymbionts in insects

9:05 p.m. General Discussion

Leader: *Peg Riley* - Dept. Biology, Yale University

Thursday, July 31, 1997

7:30 - 8:30 a.m. Breakfast

SESSION VIII. HORIZONTAL TRANSFER

9:00 - 9:30 a.m. Introduction Chair: *Elizabeth Raleigh* - New England Bio Labs, Beverly MA

**9:30 - 10:00 a.m. *Ichizo Kobayashi* - University of Tokyo, Department of Molecular Biology
*Sex and selfish genes***

10:05 - 10:30 Break

**10:30 - 11:00 a.m. *Miroslav Radman* - Institut Jacques Monod, Paris France
*Control of Interspecies recombination and the definition of species***

**11:05 - 11:35 a.m. *Michael Lorenz* - Universität Oldenberg, Germany
*Natural transformation in the soil***

**11:40 a.m. General Discussion
Leader: *David Shub* - Dept. Biology, S.U.N.Y. Albany**

12:30 Lunch

1:00 - 6:00 p.m. Free Time & Poster Viewing

6:00 - 7:30 p.m. Dinner

SESSION IX - PLENARY LECTURE

7:45 - 8:00 p.m. Elections for new chair and Introduction - *Julian Adams*

**8:00 - 8:45 P.M. PLENARY LECTURE
John Maynard Smith - School of Biological Sciences, University of Sussex, U.K.
*Population structure and evolution in prokaryotes***

**8:45 - 9:00 p.m. Discussion/Response
Richard Moxon - Institute of Molecular Medicine, University of Oxford**

**9:00 p.m. Open Discussion
Leader: *Julian Adams***