

**US-JAPAN COOPERATIVE MEDICAL SCIENCE PROGRAM**  
**40th Tuberculosis and Leprosy Research Conference**

**THURSDAY, JULY 28**

8:00 a.m. **REGISTRATION**

8:30 a.m. **OPENING REMARKS:**  
**Steven Reed, US Tuberculosis and Leprosy Panel**  
**David McMurray, Chair, US Tuberculosis and Leprosy Panel**

**SESSION 1**

**Co-chairs: Steven Reed, Yukio Koide**

8:40 a.m. Human T cell driven identification of CD8+ antigens in Mtb  
**David M Lewinsohn**

9:00 a.m. Antigen-specific CD8+ T cell and protective immunity to tuberculosis  
**Samuel Behar**

9:20 a.m. Differential activation of gamma-9 delta-2 T cells by live BCG and isopentenyl pyrophosphate: relevance for TB protective immunity  
**Charles Spencer**

9:40 a.m. IL-1 at the early stage of monocyte differentiation to dendritic cells impairs functional activities of dendritic cells  
**Masahiko Makino**

10:00 a.m. **BREAK**

10:20 a.m. Foxp3-expressing T regulatory cells accumulate in the lungs after aerosol infection and suppress immunity to *Mycobacterium tuberculosis*  
**Kevin Urdahl**

10:40 a.m. Protection against *Mycobacterium bovis* Bacille Calmette-Guérin infection in IL-15 deficient mice  
**Yasunobu Yoshikai**

11:00 a.m. Candidate selection for TB vaccine development  
**Steven Reed**

11:20 a.m. The vaccine potential of *M. tuberculosis* promiscuous peptides  
**Homayoun Shams**

11:40 p.m. Novel vaccination (HVJ-liposome / HSP65 DNA+ IL-12 DNA and recombinant 72f BCG) against tuberculosis using cynomolgus monkey  
**Masaji Okada**

12:00 p.m.     **LUNCH / POSTER SESSION 1**

**SESSION 2**

**Co-chairs: David McMurray, Yasunobu Yoshikai**

- 1:30 p.m.     Immunization with a Sindbis virus based DNA vaccine expressing antigen 85B induces protective immunity against *M. tuberculosis* that is dependent on acquired and innate immune mechanisms  
**Sheldon Morris**
- 1:50 p.m.     Intratracheal administration of third-generation lentivirus vectors encoding MPT51 and hsp65 from *M. tuberculosis* induce specific T cell responses in the lung  
**Yukio Koide**
- 2:10 p.m.     Memory T lymphocytes generated by BCG vaccination reside within a subset of CD44<sup>lo</sup> CD62L<sup>hi</sup> population  
**Andre Kipnis**
- 2:30 p.m.     DNA augments antigenicity of mycobacterial DNA-binding protein 1 and confers protection against *Mycobacterium tuberculosis* infection in mice  
**Sohkichi Matsumoto**
- 2:50 p.m.     **BREAK**
- 3:10 p.m.     Genetic analysis of host immunity to experimental infection with virulent *Mycobacterium tuberculosis*: identification of the *lpr1* gene within the *sst1* locus and immunological analysis of its function in controlling innate immunity  
**Igor Kramnik**
- 3:30 p.m.     Identification of mycobacterial genes that affect interactions with macrophages  
**Jeffrey D. Cirillo**
- 3:50 p.m.     Toll-like receptor-dependent innate immune responses in mycobacterial infection  
**Kiyoshi Takeda**
- 4:10 p.m.     A polymorphism in human Toll-like Receptor 1 encodes a variant that impairs tuberculosis signaling  
**Thomas Hawn**
- 5:30 p.m.     **DINNER CRUISE: Meet in hotel lobby for transportation to boat dock.**

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**FRIDAY, JULY 29**

**SESSION 3**

**Co-chairs: Linda Adams, Isamu Sugawara**

- 8:00 a.m. Dendritic cell maturation is suppressed by *Mycobacterium leprae*  
**Gilla Kaplan**
- 8:20 a.m. Genes in the *Mycobacterium tuberculosis hspX* operon may be associated with hypervirulence and immune modulation  
**Frederick D. Quinn**
- 8:40 a.m. Polymorphism of the 5' flanking region of the IL-12 receptor  $\beta 2$  gene partially determines the clinical types of leprosy through impaired transcriptional activity  
**Hideki Ohyama**
- 9:00 a.m. Pulmonary *Mycobacterium avium* complex infection: association with *NRAMP1* gene polymorphism  
**Naoto Keicho**
- 9:20 a.m. **BREAK**
- 9:40 a.m. TNF and tuberculosis: role in granuloma formation and maintenance  
**P. Ling Lin**
- 10:00 a.m. Inhibition of TNF or LT-alpha impairs control of *Mycobacterium leprae* growth in mouse foot pads and is accompanied by dysregulated granuloma formation  
**Linda Adams**
- 10:20 a.m. Nerve damage in a mouse model of *Mycobacterium ulcerans* infection  
**Masamichi Goto**
- 10:40 a.m. Advances in molecular epidemiology of leprosy  
**Varalakshmi Vissa**
- 11:00 a.m. **LUNCH: ON YOUR OWN**

**SESSION 4:**

**Co-chairs: Mark Perkins, Hatsumi Taniguchi**

- 12:30 p.m. What is needed to improve diagnostics for TB and leprosy  
**Mark Perkins**

- 12:40 p.m. Genotyping of *Mycobacterium leprae* by variable number tandem repeats and its application for molecular epidemiology  
**Masanori Matsuoka**
- 1:00 p.m. Rapid detection of *Mycobacterium tuberculosis* complex from sputum samples using novel Loop-Mediated Isothermal Amplification  
**Tetsu Hase**
- 1:20 p.m. Identification of specific proteins and peptides in *Mycobacterium leprae* suitable for the selective diagnosis of leprosy  
**John S. Spencer**
- 1:40 p.m. Antibody responses to MS, MPT51 and PPE-C discriminate between latent and incipient sub-clinical TB  
**Suman Laal**
- 2:00 p.m. The tuberculin mystery: definition of the molecular composition of PPD  
**Karen Dobos**
- 2:20 p.m. Isothermal amplification of genomic DNA from the obligate intracellular pathogen *Mycobacterium leprae*  
**Richard Slayden**
- 2:40 p.m. **BREAK**

## **SESSION 5**

**Co-chairs: Patrick Brennan, Masahiko Makino**

- 3:00 p.m. The alternative sigma factor SigE and stress responses in *Mycobacterium leprae*  
**Diana Williams**
- 3:20 p.m. Lepra reactions after multidrug therapy for multibacillary (MB) leprosy  
**Ma. Victoria Balagon**
- 3:40 p.m. The role of anoxia in tuberculosis pathogenesis and chemotherapy  
**Helena Boshoff**
- 4:00 p.m. Relative fitness of drug-resistant *Mycobacterium tuberculosis*  
**Sebastien Gagneux**
- 4:30 p.m. **POSTER SESSION 2**
- 6:00 p.m. **DINNER: ON YOUR OWN**

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**SATURDAY, JULY 30**

**SESSION 6**

**Co-chairs: Tom Gillis, Masamichi Goto**

7:00 a.m. **Meet the mycobacterial experts breakfast** (Sign-up required, see registration form)

8:30 a.m. Gaps in our understanding of the disease of leprosy  
**Warwick Britton**

9:00 a.m. Nerve function impairment studies in leprosy  
**Diana Lockwood**

9:30 a.m. Toll-like receptors and innate immunity in leprosy  
**Stephan Krutzik**

10:00 a.m. **BREAK**

10:30 a.m. The armadillo model: A full spectrum host  
**Richard Truman**

11:00 a.m. The mouse model in leprosy  
**Linda Adams**

11:30 a.m. Interactions of *M. leprae* and Schwann cell and subsequent nerve damage  
**Cristina Pessolani**

12:00 a.m. Discussion

12:30 p.m. **LUNCH**

**Note:** Session 7 of the US-Japan meeting and continuation of the leprosy workshop will be held in parallel starting at 1:30 p.m. Attendance at the leprosy workshop afternoon session is limited.

**SESSION 7**

**Co-chairs: David McMurray, Masao Mitsuyama**

1:30 p.m. Immunopathology of rat tuberculosis  
**Isamu Sugawara**

- 1:50 p.m. Rocket science: *Mycobacterium marinum* phagosome escape and actin polymerization  
**Eric Brown**
- 2:10 p.m. Caspase-dependent inhibition of macrophage necrosis: A possible mechanism for intracellular survival of *Mycobacterium tuberculosis*  
**Ikuo Kawamura**
- 2:30 p.m. *Mycobacterium tuberculosis* cell wall mannosylated lipoglycans: elucidation of structural motifs that impact human macrophage recognition and response  
**Larry S. Schlesinger**
- 2:50 p.m. A eukaryotic-like protein glycosylation system exists in *Mycobacterium tuberculosis*  
**John Belisle**
- 3:10 p.m. The *mIHF* and the neighbor genes in *Mycobacterium tuberculosis* effect on the intracellular growth of *Mycobacterium smegmatis* J15CS (3)  
**Hatsumi Taniguchi**
- 3:30 p.m. *Mycobacterium tuberculosis* induces a novel mechanism of macrophage apoptosis at high multiplicities of infection  
**Hardy Kornfeld**
- 3:50 p.m. **LATE BREAKING: TBN**
- 4:00pm **CLOSING REMARKS:**  
**Masao Mitsuyama, Chair, Japan Tuberculosis and Leprosy Panel**