Standing Committee on Biosafety

The original Biosafety Committee was appointed by ASM Council in 1987 to advise the ASM on biosafety matters. The then existing Special Interest Group (SIG) for Microbiological Safety had the role of planning workshops and symposia on safety matters at ASM National Conferences. This safety SIG is no longer functional, with many of the SIG roles now adopted by the Standing Committee.

Members of the Standing Committee on Biosafety are appointed by the ASM Council. The committee can have up to 13 members; the current committee has representatives from most States with a good cross section of scientific expertise and experience in matters relating to laboratory safety and policy. The committee membership is reviewed by ASM council every 2 years.

The committee operates under defined terms of reference:

- To formulate biosafety policy for the Australian Society for Microbiology.
- To advise the Society on biosafety issues.
- To prepare and update pathogen risk groups and containment levels in collaboration with the SIGs and other relevant professional bodies
- To liaise on biosafety issues with the Office of the Gene Technology Regulator.
- To present to Council minutes of formal meetings of the Committee and reports on matters pertaining to biosafety.

As a whole, the committee meets at least once a year at the ASM Annual General Meeting to report on the year's work and to conduct general business. During the year, members communicate by e-mail or teleconferencing as necessary.

Chair: Lee Smythe

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Current members of the committee are:

- Lee Smythe (Chair)
- Carolyn Woodruff (Secretary)
- John Andrew
- Marie Gerard
- Peter Hallsworth
- Ian Sampson
- Lindsay Sly
- Sandra Thomas
- Bronwyn Underwood

Most recently, the Committee was responsible for organising a Symposium on Biosafety and Ethics at the ASM 2004 National Conference in Sydney. The ASM council supported an overseas speaker, Professor Ron Atlas from the University of Louisville, and two experts from within Australia. The aim of the symposium was to try and re-identify biosafety in the Society andå move towards laboratory biosafety workshops for future ASM conferences.

The committee has representation on Standards Australia subcommittees for reviewing existing standards covering Safety in the Laboratories and Biological Safety Cabinets and most recently for the development of a standard for the surface transport of biologicals.

A recent resignation was Colin Ludford. Colin was an original member of the ASM SIG for Microbiological Safety in 1985 and served on the standing committee up until 2004. Colin represented the Standing Committee, as chair of the standards subcommittee CH26/3 for revision of 2243.3 Safety in Laboratories from about 1986-2004 and as a long-term member of the ME 60 sub committees for Biological Safety Cabinets and Clean Rooms. The hard work and dedication by such members as Colin are highly valued and provide the basis for good biosafety standards in our workplaces.

Should ASM members require further information on the Standing Committee or issues dealt with by the committee, they should contact myself using the indicated contact details.

SCIENCE PRIZES

The 2005 Prime Minister's Prizes for Science are now open for nominations

Closing date: Friday, 8 April 2005

DEST are seeking nominations to any of the following five awards:

- The Prime Minister's Prize for Science.
- Science Minister's Prize for Life Scientist of the Year.
- Malcolm McIntosh Prize for Physical Scientist of the Year.
- Prime Minister's Prize for Excellence in Science Teaching in Primary Schools.
- Prime Minister's Prize for Excellence in Science Teaching in Secondary Schools.

Information about the prizes and the online nomination process is available on http://sciencegrants.dest.gov.au/scienceprize/pages/home.aspx

Contact information

Science Prizes Secretariat, Department of Education, Science and Training
Tel: (02) 6240 5066
Fax: (02) 6123 6168
E-mail: pmprize@dest.gov.au

Standing Committee on Clinical Microbiology

New members 2005-2006

In response to the call for expressions of interest by senior scientific microbiologists and medical microbiologists to join the committee, I am very pleased to announce the appointment (subject to ratification by the National Council of ASM) of the following new members.

Dr John Andrew

Dr Andrew is a medical microbiologist and the Director of Microbiology at Gribbles Pathology. He is Victorian based. He has also been selected as the representative of the ASM on the National Pathology Accreditation Advisory Council (NPAAC), a commonwealth government committee that sets standards for diagnostic pathology laboratories.

Dr John Merlino

Dr Merlino is a senior microbiology scientist at Concord Repatriation General Hospital, Sydney, NSW. He is also the National Convenor/Chair of the ASM antimicrobials special interest group.

Ms Rosemary Privett

Ms Privett is a microbiology scientist in charge of the diagnostic laboratory at the Sydney Adventist Hospital, NSW. She also represents ASM on the NPAAC sub-committee looking into the issue of uncertainty of measurement in diagnostic pathology laboratories.

Dr Maria Yates

Dr Yates is a medical microbiologist with Clinipath Pathology, a private diagnostic laboratory in Perth, WA.

On behalf of ASM, I welcome these four new members to the clinical microbiology committee.

Retiring members

The retiring members are:

- Dr Jock Harkness
- Dr Jan Lanser
- Dr David Looke
- Dr Arthur Morris

Dr Stephen Graves

Convenor
ASM Standing Committee on
Clinical Microbiology

Director of Microbiology
Hunter Area Pathology Service (HAPS)
Newcastle, NSW

Director
Australian Rickettsial Reference Laboratory
Geelong Hospital, VIC
Tel: (02) 4921 4420
Mobile: 0407 506 380
Fax: (02) 4921 4400
E-mail: Stephen.Graves@
hnehealth.nsw.gov.au

On behalf of ASM, I sincerely thank these four retiring members for their contributions to the clinical microbiology committee over the years during which they have been members.

Continuing members

The continuing members are as follows.

Dr Michael Leung

Dr Leung is a medical microbiologist with Western Pathology, based in Perth, WA.

Dr Alistair McGregor

Dr McGregor is a medical microbiologist with the Royal Hobart Hospital, Tasmania.

Dr Jerry Robson

Dr Robson is a medical microbiologist with Sullivan Nicholaides Pathology in Brisbane, Queensland.

Dr Peter Ward

Dr Ward is a senior microbiology scientist with the Austin Hospital in Melbourne, Victoria.

Along with the Chair (Dr Stephen Graves) and the President (ex-officio) of ASM (Prof Julian Rood, Department of Microbiology, Monash University), the committee represents a reasonably good cross-section of microbiologists in Australia with expertise in diagnostic medical microbiology. A member's term is 2 years.

Report

The committee has had a relatively quiet period since our last report (*Microbiology Australia* November 2004).

The committee received two draft documents from NPAAC for review and comment – *Requirements for Supervision of Pathology Laboratories.* (Draft, 13 September 2004) and *Guidelines for Approved Pathology Collection Centres* (Draft, 14 September 2004). There were no issues arising from these documents that were of concern to ASM. If any ASM member would like a copy of either document, please let me know.

The committee received a draft document *Guidelines for assuring quality of solid media used in Australia for the cultivation of medically important Mycobacteria* from the Culture Media and Mycobacteria Special Interest Groups of ASM. This document has been favourably peer reviewed by two overseas referees and will now be formally adopted by the ASM. Thanks to the two SIGS for their valuable work.

The role of the National Scientific Advisory Committee (NSAC) in ASM

Chair: Hatch Stokes

Professorial Fellow
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Vice-President (Scientific Affairs)
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Web: http://www.theasm.com.au

The present divisional structure of NSAC has its origins in 2001. At that time, Julian Rood prepared a position paper at the request of then President of ASM, Lyn Gilbert. This position paper was circulated to members via *Microbiology Australia* (July 2001) for comment and was formally ratified by Council, with only relatively minor changes, later that year. The new structure and membership of NSAC began to be phased in almost immediately, although it was only in 2004 that this process was completed. The Sydney 2004 Annual Scientific Meeting (ASM) was the first to have been organised via the restructured NSAC.

NSAC in its present form has a number of roles. These include:

- Providing continuity in the organisation of the programme for the ASM.
- Assisting the local organising committee (LOC) in organising the programme for the ASM.
- Managing the Visiting Speakers Programme.
- Providing recommendations to the Executive and Council for the funding of satellite meetings.
- Developing scientific policy recommendations on behalf of the Society.
- Acting as a platform for providing policy advice to government and for lobbying government on behalf of the Society.

Current members and their roles

- Hatch Stokes – Vice-President (Scientific Affairs) and Chair
- Ruth Foxwell – Deputy NSAC Chair and Division 1 Chair 2005
- Julian Rood – President ASM (ex officio)
- Mary Barton – Chair, Visiting Speakers Programme
- Bill Rawlinson – Division 2 Chair 2005
- Ipek Kurtböke – Division 3 Chair 2005
- Naresh Verma – Division 4 Chair 2005
- Robyn Wood – Division 1 Chair 2006
- Johnson Mak – Division 2 Chair 2006
- Jan Tennent – Division 3 Chair 2006
- Ruth Hall – Division 4 Chair 2006
- David Ellis – Division 1 Chair 2007
- Tuck Wong Kuk – Division 2 Chair 2007
- Vadakaptu Gupta – Division 3 Chair 2007
- Renato Morona – Division 4 Chair 2007

The structure of NSAC

The current members of NSAC are listed here. Others are frequently co-opted to the committee. At present, these include George McLean (the LOC Chair for Canberra 2005) and Ala Lew (the Scientific Programme Chair for the Gold Coast meeting in 2006). The Chair of NSAC is also the Vice-President (Scientific Affairs) and therefore a member of the Executive. The Chair is accountable to that body and reports back to it at Executive meetings.

The Division Chairs

Divisional groupings are also indicated below. The Division Chairs are elected to NSAC for a 3 year term. Their term begins at the start of the calendar year 2 years prior to the Annual meeting for which they are responsible and they rotate off the committee at the end of the calendar year of that meeting. For example, the 2007 Chairs began their term in January this year and will complete it at the end of 2007. Similarly, the 2005 Chairs will complete their term after the Canberra meeting and will rotate off the committee at the end of this year. Towards the end of the year, we will call for expressions of interest for Division Chairs for 2008 (Melbourne meeting) by, amongst other means, advertisement in *Microbiology Australia.*

One of the great strengths of this structure is that it incorporates a regular turnover of members, thus ensuring that experienced members are present while at the same time bringing in new blood and ideas. NSAC is open to all levels of members and represents a way by which early career researchers can actively participate in the affairs of the Society. For the same type of member it can represent a useful aid to career development.

Division Chairs have the task of identifying suitable overseas invited speakers and for organising the symposium sessions within the Division for which they have responsibility. In so doing, they are expected to ensure that they construct a programme that is balanced and appeals to as broad a range of members as possible. To do this, they are expected to liaise closely with the LOC

Division groupings

- Division 1: Medical and veterinary microbiology
- Division 2: Virology
- Division 3: General, Applied and Environmental Microbiology
- Division 4: Microbial Genetics, Physiology and Pathogenesis

and with other Division Chairs, both within their own year and with Chairs of those years preceding and following. They are also expected to consult widely.

One way of doing this is by working with the SIGs. Thus, each SIG is nominally associated with a Division (see *Who's Who* in this edition) and the Chairs are expected to work closely with the SIGs. The membership is also encouraged to proactively lobby the Chairs, either directly or through the SIGs. Contact details for the Division Chairs can also be found in this issue.

NSAC, which meets by teleconference quarterly, monitors the developing programme and also acts as the forum whereby the Division Chairs can ensure balance across the entire programme of any given meeting. Through their membership of NSAC, Division Chairs also have a broader role in providing scientific input to the Executive and Council and in influencing the scientific direction of the Society.

Announcing a major review of Australian Standard Methods for Water Microbiology: the AS 4276 Series

Bruce Gray

Chair of Standards
Australian Committee FT/20
Water Microbiology
E-mail: Bruce_Gray@health.qld.gov.au

Standards Australia Committee FT/20 Water Microbiology is responsible for developing Standard Methods for the microbiological examination of water. This committee is broadly constituted, with representatives from government, the private testing sector, industry bodies, academia, and other important stakeholder groups. The committee has produced a number of Standard Methods, the most important being the AS 4276 series.

The AS 4276 series consists of Australian (and many Australian/New Zealand) Standard Methods for the examination of water for a range of microorganisms of public health and industry importance. Originally, the AS 4276 series was produced to replace the AS 1095.4.1 (1981) series *Microbiological Methods for the Dairy Industry, Part 4 - Methods for the Examination of Water and Air.*

There has been a wide acceptance and uptake of AS 4276 Standard Methods in testing laboratories. They have been accepted as fully equivalent to Standard Methods from traditional sources, principally the American Public Health Association and Report 71 from the United Kingdom. They have also been taken up into government regulations and guidance publications.

The first Standards in the AS 4276 series were published in 1995. As Standards Australia has a policy of reviewing Standards every 5 years, the committee has commenced the overdue task of reviewing these Standards. The Standards being reviewed are those for:

- General information and procedures (AS 4276.1)
- Heterotrophic colony count (AS 4276.3.1)
- Total coliforms (AS 4276.4, AS4276.5)
- Thermotolerant coliforms and E. coli (AS 4276.6, AS 4276.7)
- Faecal Streptococci (AS 4276.8, AS 4276.9)
- Pseudomonads (AS 4276.10, AS 4276.11)
- *Pseudomonas aeruginosa* (AS 4276.12. AS 4276.13)
- *Salmonella* (AS 4276.14)
- *Legionella* (AS/NZS 3896)

There is a general Standards Australia policy of adopting International Standards Organisation (ISO) Standards wherever possible, in line with obligations arising from Australia's membership of the World Trade Organisation. Therefore, the starting point for the review process is a close examination of any equivalent ISO Standard. Unless there are technical grounds for not doing so, the committee will adopt the relevant International Standard (IS) as the Australian Standard. However, the committee may decide that modifications are required to the IS. These modifications can be laid out in the Preface and Appendices, leaving the text of the IS unchanged.

There are advantages to harmonising with the ISO, including the wealth of information and guidance contained in their Standards. Nevertheless, the committee will reject any IS if it believes a superior Standard is possible, which would better serve the Australian and New Zealand testing community.

Part of the development of any Australian Standard is a public comment phase. This applies equally to the review of existing Standards. Organisations and individuals with an interest in these Standard Methods should anticipate the appearance of drafts for public comment.

Notice of the appearance of these drafts can be found in the Standards Australia publication *The Global Standard*, by visiting the website www.standards.com.au, or by making use of the StandardsWatch service (free email notification) provided by Standards Australia.

Australian Standards are developed by a process of consensus and public comment is an essential part of this. As reviews occur only approximately every 5 years, advantage should be taken of this opportunity to influence the development of these important national Standards.

ASM awards and prizes

Nominations are invited for the following awards and prizes. For further information, please see the ASM website: www.theasm.com.au or contact the National Office on Tel: (03) 9867 8699 or e-mail to admin@theasm.com.au

2005 Frank Fenner Award

Note: requirements for this award have changed!

Nominations for this award are invited from Associate Member, Senior Associate Member (SASM), Member (MASMs) and Fellows (FASMs) of the ASM of at least 3 years' standing at the time of application. Such members must have been engaged in research at postdoctoral level or equivalent for less than or equal to 15 years or the equivalent of less than or equal to 15 years of full-time research since acquiring their postdoctoral degree in cases of significant career interruption.

The purpose of this award is to recognise distinguished contributions in any area of Australian research in microbiology by scientists in a formative stage of their career, rather than to reward senior scientists for a lifetime of achievement. Applicants need to show that their area of research excellence was work done substantially in Australia or, for those applicants recently returned from overseas, is ongoing work in Australia that will enhance the nation's international reputation in microbiology.

This award, which consists of a bronze plaque, plus $1,000, will be presented at the following year's ASM Annual Scientific Meeting. The recipient of the 2005 Award will deliver the Frank Fenner Lecture at the 2006 meeting.

Applicants must submit a 50 word summary of their CV with their application via e-mail to: chris@theasm.com.au or to: Suite 23/20 Commercial Road Melbourne VIC 3004

Closing date for applications: 1 June 2005

ASM Research Trust Fellowship

The Research Trust aims to promote excellence in microbiology by supporting either younger microbiologists for specified research projects leading to career advancement; or Australian microbiologists returning from overseas studies to assist them to re-establish their careers in Australia.

The purpose of the Trust is to do either or both of the following:

- Fund a person to undertake scientific research in microbiology and related fields in Australia; and/or
- Fund a person employed by another body to undertake scientific research in those areas that may prove to be of value to Australia.

The award will be in the amount of up to $7,500.

Closing date for applications 1 June 2005

ASM Foundation Travel Grant

The Society's Foundation Travel Grant sponsors Australian microbiologists, especially those in the formative stages of their careers, to undertake professional development in appropriate laboratories in Australia or New Zealand. This grant provides funding to assist in financing:

- Short postgraduate refresher courses in Australian on aspects of microbiology.
- Visits by international or Australian specialist microbiologists to and within Australia for specific purposes which would benefit many members.
- Visits by Australian specialist microbiologists to international symposia or advanced courses, with the prime object of the knowledge gained being disseminated to other Australian microbiologists upon return of the specialist.
- Visits by Australian specialist microbiologists overseas on 'lecture exchange programmes' with other learned societies.
- ASM scholarships for postgraduate training of members.
- Other purposes recommended by the Foundation Committee and deemed by National Council to be consistent with the aims of the Foundation.

The ASM Foundation Travel Grant normally provides from several hundred to a maximum of $2,000 per scholarship. Applicants who have secured significant support (ca. 50%) from other sources will be assessed more favourably than those who have not.

Closing dates for applications: (bi-annually) 31 July 2005 & 31 January 2006

David White Excellence in Teaching Award

Nominations are invited for the ASM Excellence in Teaching Award from members (MASMs) of the ASM of at least 5 years' standing, to recognise excellence in the teaching of, and/or innovation in the teaching of microbiology in Australia.

The award, consisting of a bronze plaque plus $1,000, will be presented at the ASM's Annual Scientific Meeting. The recipient will be invited to conduct a workshop on some aspect of teaching of microbiology at the meeting subsequent to the year in which the award is given.

Closing date for nominations 1 June 2005

ASM Teachers' Travel Award

This is a new award to encourage ASM members involved in teaching microbiology at the tertiary level to attend the Annual Scientific Meeting of the Australian Society for Microbiology. Applicants may be employed full-time, part-time or sessionally.

To apply for this award, teachers should submit a curriculum vitae, which should include a description of their current position, together with a letter of recommendation from their Head of the Department confirming their involvement in, and commitment to, a teaching programme in the department and a brief synopsis of their area of special interest in education. This synopsis would provide the basis for their presentation of a poster or participation in a session organised by the Education Special Interest Group at the Annual Scientific Meeting.

The award consists of up to $1,000 in travel expenses for the recipient to attend the Annual Scientific Meeting.

Closing date for applications: 1 June 2005

STUDENT AWARDS

The Becton Dickinson Student Awards

Seven BD Awards are available each year to finance one student member from each ASM Branch to attend the Annual Scientific Meeting of the ASM. Each award consists of a return economy airfare, conference registration and an allowance for accommodation.

All postgraduate microbiology students who have submitted or are intending to submit an abstract for the ASM 2005 Annual Scientific Meeting are invited to apply – especially those in the final year of their higher degree programme. If not currently a student member of the ASM, applicants must be eligible for membership, and must apply for such at the time of application for the Award.

Finalists for the Award will be selected on the basis of their abstract and a presentation summary submitted for consideration by their State ASM Branch. The recipient of the Award will be selected on the basis of an oral presentation (12 minutes plus 3 minutes' questions), to be given at the Becton Dickinson Student Award evening.

The recipient of the Award will also be required to present their paper at the Becton Dickinson Student Awards Symposium. Previous Becton Dickinson Student Award recipients, please do not apply. Contact your local branch for further details.

Closing date for applications: 1 May 2005

Vic Skerman Student Prize

This prize is awarded annually to a student member of the Society who has contributed, while enrolled as a student member of the ASM, the best review article to the Society's journal for the period 1 July to 30 June in any year.

The prize consists of $500 and a certificate, and will be awarded at the ASM's Annual Scientific Meeting.

Closing date for applications: 1 June 2005

INDUSTRY AWARDS

The bioMérieux ASM Identifying Resistance Award

This is a recognition award to an individual on the basis of career achievements in the field of the identification of bacterial resistance to antimicrobials in a medical setting. The applicant must be a member of the ASM or NZMS.

The applicant must submit a curriculum vitae (including a list of publications), the names and addresses (including email address) of two referees, together with a brief summary of their contribution to the study of bacterial resistance to antimicrobials in a clinical setting.

The award committee will take into account the quality and originality of the published research and service to Australasian microbiology in general. The award is based on the recipient's entire career rather than on a single achievement.

The award consists of a $1,000 cash prize, a commemorative plaque, and the provision of flights and accommodation for the recipient to attend the presentation ceremony to be held at the ASM's Annual Scientific Meeting.

The award committee will consist of the ASM President, Chair Antimicrobials SIG and one other nominee of the Antimicrobial SIG.

Closing date for applications: 1 June 2005

The Roche ASM Molecular Diagnostic Award

This is an encouragement award to assist an individual to attend and make a presentation on the use of PCR in the field of diagnostic infectious diseases at the ASM's Annual Scientific Meeting. The applicant must be a member of the ASM or NZMS.

It will be a necessary requirement for the winner to present a paper on the use of PCR in the field of diagnostic infectious diseases at the meeting. This may be based on original research, case presentations, or a review of a PCR method used to diagnose an infectious disease.

A curriculum vitae, current position description and the names and addresses (including email address) of two referees, together with a brief synopsis of the presentation and a copy of the abstract to be submitted for presentation.

The award committee will take into account the eligibility of the applicant for an encouragement award, together with the quality and originality of the planned presentation and its relevance to molecular diagnostic microbiology.

The award consists of a $1,000 cash prize, a commemorative plaque and up to $1,000 in travel expenses for the recipient to attend

the presentation ceremony to be held at the ASM's Annual Scientific Meeting.

The award committee will consist of the ASM President, Chair Molecular Microbiology SIG and one other nominee of the Molecular Microbiology SIG.

Closing date for applications: 1 June 2005

The Oxoid ASM Culture Media Award

This is an encouragement award to assist an individual to attend and make a presentation on the use of culture media at the ASM's Annual Scientific Meeting. The applicant must be a member of the ASM or NZMS.

It will be a necessary requirement for the winner to present a paper or poster relevant to the use of culture media in microbiology at the meeting. This may be based on original research, a method evaluation or validation or a review of a culture based diagnostic method, for example, this may include improved isolation methods, rapid or presumptive identification, or novel ways of using culture media.

A curriculum vitae, current position description and the names and addresses (including email address) of two referees, together with a brief synopsis of the presentation and a copy of the abstract to be submitted for presentation.

The award committee will take into account the eligibility of the applicant for an encouragement award, together with the quality and originality of the planned presentation and its relevance to the use of culture media in microbiology.

The award consists of a $1,000 cash prize, a commemorative plaque and up to $1,000 in travel expenses for the recipient to attend the presentation ceremony to be held at the ASM's Annual Scientific Meeting.

The award committee will consist of the ASM President, Chair Culture Media SIG and one other nominee of the Culture Media SIG.

Closing date for applications: 1 June 2005

The Merck Sharp & Dohme ASM Mycology Award

This is a recognition award to an individual on the basis of career achievements in the field of mycology. The applicant must be a member of the ASM or NZMS.

The applicant must submit a curriculum vitae (including a list of publications), the names and addresses (including email address) of two referees, together with a brief summary of their contribution to mycology.

The award committee will take into account the quality and originality of the published research and service to Australasian mycology in general. The award is based on the recipient's entire career rather than on a single achievement.

The award consists of a $1,000 cash prize, a commemorative plaque and up to $1,000 in travel expenses for the recipient to attend the presentation ceremony to be held at the ASM's Annual Scientific Meeting.

The award committee will consist of the ASM President, Chair Mycology SIG and one other nominee of the Mycology SIG.

Closing date for applications: 1 June 2005

The Pfizer ASM Mycology Encouragement Award

This is an encouragement award to assist a laboratory scientist/technician to attend and make a presentation in the field of medical mycology at the ASM's Annual Scientific Meeting. The applicant must be a member of the ASM.

It will be a necessary requirement for the winner to present a paper or poster in the field of medical mycology at the meeting. This may be based on original research, case reports, a new or updated methodology or a review of a particular mycosis etc.

A curriculum vitae, current position description and the names and addresses (including email address) of two referees, together with a brief synopsis of the presentation and a copy of the abstract to be submitted for either an oral or poster presentation.

The award committee will take into account the eligibility of the applicant for an encouragement award, together with the quality and originality of the planned presentation and its relevance to medical mycology.

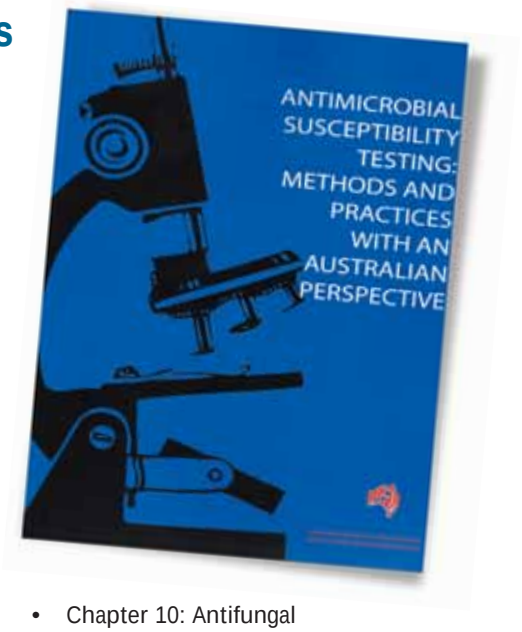
The award consists of a return economy class airfare, conference registration, cheque for $500, an allowance of $120 per day for five nights towards hotel accommodation and a commemorative plaque.

The award committee will consist of the President, Chair Mycology SIG and one other nominee of the Mycology SIG.

Closing date for applications: 1 June 2005

Antimicrobial susceptibility testing: methods and practices with an Australian perspective

Editor in Chief: John Merlino
(on behalf of the ASM Antimicrobial Special Interest Group)



Editor's introduction

This handbook has been produced as a response to requests for updated information from antimicrobial special interest group members of the Australian Society for Microbiology. It was funded by the NSW Sub-branch of the Australian Society for Microbiology.

As the title suggests, antimicrobial susceptibility testing: methods and practices in Australia, is an evolving science. The handbook focuses on standardised methods, and some which are non-standardised, that are useful for detecting antimicrobial resistance during susceptibility testing for the bench microbiologist.

It provides updated information from different authors who are currently working or have had experience in specific areas which have proven to be problematic. While it is not a complete textbook, the aim is to update the information and topics every 2 years.

Dr John Merlino – Editor in Chief
National Antimicrobial SIG Convenor
E-mail: JMerlino@med.usyd.edu.au

Review

The Standing Committee on Clinical Microbiology of the Australian Society for Microbiology congratulates you and your other authors on putting together a very timely and valuable update on the state of play in this crucial area of clinical microbiology. We feel sure that the book will be widely used and much consulted by our colleagues in this field.

Dr Stephen Graves, Chair, ASM Standing Committee on Clinical Microbiology.

Content and authors

- Chapter 1: Introduction – antimicrobial susceptibility: concepts, definitions and practices
  John Merlino
- Chapter 2: Antibiotic susceptibility testing by the CDS method: a manual for medical and veterinary laboratories 2004
  SM Bell, BJ Gatus, JN Pham & DL Rafferty
- Chapter 3: Clinical relevance of antimicrobial susceptibility testing
  Richard AV Benn
- Chapter 4: Gram-positive bacteria – resistance and multidrug resistance
  John Merlino
- Chapter 5: Beta-lactam resistance in Gram-negative bacteria
  Jubelle Valenzuela, Lee Thomas & Jon Iredell
- Chapter 6: Combination antimicrobial testing applications for cystic fibrosis
  D Hill, B Rose, W Ferris, S Aaron & C Harbour
- Chapter 7: Haemophilus influenzae and antimicrobial susceptibility
  Stephen Tristram
- Chapter 8: Antimicrobial testing and applications in pathogenic Neisseria
  John Tapsall and members of the National Neisseria Network of Australia
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  David Ellis & Rosie Handke
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  Harsha Sheorey
- Chapter 12: Laboratory testing for antiviral drug resistance
  Catherine Pitman & Dominic E Dwyer
- Chapter 13: Antibiotic susceptibility of veterinary isolates
  Mary D Barton
- Chapter 14: Chemical disinfectants and sterilising agents
  John Merlino
- Chapter 15: Appendices

Sales enquiries should be directed to:

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Student Travel Awards

Who should apply?

There are a number of travel awards available for students to attend the annual conference of the Australian Society for Microbiology. Applicants for the Becton-Dickinson travel award should be postgraduate students undertaking studies in any field of microbiology. Candidates must be a student member of the ASM at the time of submission. Students should only apply if they have, or will have, sufficient data to present at the national conference in September. Applications for the Becton-Dickinson travel award close on 1 May of the current year and previous recipients are ineligible to apply. Return economy airfare, conference registration and an accommodation allowance is provided through the award.

Why should you apply?

Becton-Dickinson and the ASM provide students with a great opportunity to present their postgraduate work to the national microbiological community. Presenting your research in front of a national audience of respected microbiologists will have a great impact on your current and future career in science. Attending the conference enables you not only to present your work, ideas and interests but you are also able to appreciate the scope of microbiology and the people involved in the field. It is an invaluable opportunity for networking with professionals and students alike for future prospects in your imminent successful career. You are able to meet with other microbiologists on a professional and, don't forget, social level to discuss the many aspects of microbiology and to also have a bit of fun.

How do I apply?

Each State branch may have different application guidelines, so contact your local branch or visit their website for application information. All candidates will need to submit, at the very least, a 250 word abstract to their local branch of work to be presented at the conference.

How to write a successful abstract

A good abstract is difficult to write because it is a brief summary of a large amount of work. However, there are some helpful tips to preparing a good abstract. Some general rules include:

- Keeping within the specified word limit (250 words, approximately 15 sentences).
- Avoid long-winded, complex sentences (keep it simple).
- Avoid excessive use of jargon.
- References are generally unnecessary, but if required should be limited.
- And most importantly make it sound interesting and exciting.

When writing your conference abstract following a general format helps:

Title: Brief and precise as possible. Be descriptive.

Background: Briefly explain the background and context of the study and its aims. Universally recognised abbreviations need no explanation and microorganism abbreviations should follow standard scientific notation (eg. *P. aeuruginosa).*

Methods: Details in this section depend on the originality of the technique or approach used. It should be concise and describe the extent of the study, what you did or measured and how you did it.

Results: Be specific and not vague. State your major finds and use statistics appropriately. Include the test statistic, the standard deviation or error, n, and the p value, eg. 80(6.64)($n=45$, $p<0.05$).

Conclusions: Should be clearly stated and be referable to the results provided. State the major interpretations and its implications.

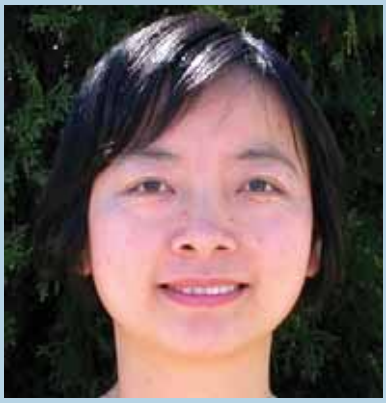
Good luck!

Molecular typing and evolution of *Salmonella enterica* serovar Typhimurium

About Helen Hu

I completed my bachelor of microbiology study at Fudan University in China. After immigrating to Australia, I continued my study as a PhD candidate under the supervision of Prof Peter Reeves and Dr Ruiting Lan in microbiology in the School of Molecular and Microbial Biosciences, University of Sydney.

My PhD project focused on molecular typing and evolution of *Salmonella enterica* serovar Typhimurium. I have just completed my PhD study and submitted my PhD thesis. After graduation, I would like to find a post doctoral position and continue to be involved in the research field of molecular typing or molecular evolution.



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Introduction

S. enterica serovar Typhimurium is a common cause of salmonellosis among humans and animals in many countries. In Australia, Typhimurium is responsible for over half of the salmonellosis cases.

The Anderson phage-typing scheme [1] is the primary means of long-term surveillance of Typhimurium outbreak isolates, and has played an important role in epidemiology. It is based on combinations of resistance or degree of sensitivity of Typhimurium isolates to a series of specific bacteriophages (phages). However, there exist quite a number of strains of Typhimurium that cannot be defined by the phage typing scheme. Furthermore, the knowledge of evolutionary relationships among isolates of different phage types is still very limited and the genetic basis of phage type variation remains largely unknown.

This leads to the aims of my PhD study. The first aim is to assess molecular typing methods to subtype Typhimurium as a complementary or successor to phage typing. The second aim is to understand the genetic basis of variations among Typhimurium phage types and to reconstruct the evolutionary relationships in order to understand the emergence and origin of phage types.

Molecular typing of Typhimurium

In the first part of my PhD study, molecular finger printing method amplified-fragment length polymorphism (AFLP) was applied to 46 Typhimurium isolates comprising nine frequent phage types in Australia. AFLP is based on the selective amplification of restriction fragments by PCR from digested genomic DNA [2]. 35 different AFLP patterns were observed in the 46 isolates studied.

The tree based on AFLP patterns showed good correlation with phage type, grouped most Typhimurium isolates by phage type, and differentiated phage types. AFLP analysis observed phage-type-specific markers that could be used as the basis for multiplex PCR and development of a microarray based molecular 'phage' typing method for Typhimurium [3]. Two of them were successfully used in preliminary PCR-based typing of 30 DT9 and 29 DT135 isolates from worldwide collections.

There was found to be a predominance of phage and plasmid genes rather than mutational changes in the AFLP fragments studied. Of the 18 cloned and sequenced phage-type-specific AFLP fragments, only four relate to *S. enterica* chromosomal sequences by mutational changes, the other 14 comprise DNA of mobile elements: nine are phage related, three are plasmid related and two are of DNA from unknown origin [3].

Molecular evolution of Typhimurium

In the second part of my PhD study, molecular evolutionary relationships among 46 *S. enterica* serovar Typhimurium isolates comprising nine phage types were studied using mutational changes first detected by AFLP or analysis of intergenic regions in genome sequences [4]. 51 polymorphic sites were detected, consisting of 18 in AFLP fragments and 33 in intergenic regions or their flanking genes. PCR-RFLP (restriction fragment length polymorphism) and SNaPshot were used to further investigate single nucleotide polymorphsims in all isolates studied.

The 51 polymorphic sites gave a single phylogenetic tree, and comparison with genome sequences of other serovars enabled determination of the root of the tree. There were only two events inferred to have occurred twice and giving high confidence in the branching order within Typhimurium. It appears that most Typhimurium isolates of a given phage type are in the same evolutionary group, but that some phage types appear to have arisen more than once. Their phage type is probably determined by lateral gene transfer of factors related to phage resistance or sensitivity, most likely carried on a plasmid or a phage. Sequencing intergenic regions was found to provide a good strategy for detection of mutational polymorphisms and study of molecular evolution of closely related isolates [4].

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I would like to offer my appreciation to my supervisors, Professor Peter Reeves and Dr Ruiting Lan for their excellent guidance throughout my PhD study. I thank them sincerely for their valuable advice, extensive discussions, critical comments and encouragement throughout the publication and presentation of my research work. Thanks to many others, especially people in the Reeves' lab for their friendly help whenever I needed it. Thanks also to the Faculty of Agriculture for providing me a scholarship during my PhD study.

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