



Histology Group of Victoria Inc.

Org. No. A0035235F

<http://www.hgv.org.au>

Volume 14 Number 4

August 2009

Contents

- Blurb From The Bush
- Have Your Say
- HistoChat Website
- From the QAP
- Scientific Reports By
 - Michelle Zammit
 - Elizabeth Baranyai
- AIMS Queensland
- Under The Microscope
- Future Scientific Meetings

Editor: Neil O'Callaghan

"The HGVI aims to provide a dynamic continuing education program in which all persons with an interest in Histology and Histotechnology are freely invited to participate."

P
A
R
A
P
H
I
O
N
A
L
I
A

Committee Page:

The members of the Histology Group of Victoria 2008-2009 committee are:

Name	Institution	Phone
Allison Boyd	St Vincents Hospital	9288 4288
Judy Brincat	Dorevitch Pathology	9244 0354
Maria Chavez	Monash Medical Centre	9594 3493
Simon Davies	Leica Biosystems	9211 7400
Elizabeth Baranyai	Cabrini Health	9508 1263
Erin Little	RCPAQAP	9808 9744
Mark Bromley	Melbourne Pathology	9287 7806
Michelle Zammit	The Alfred	9076 3088
Nguyen-Hoang, Nguyen	Peter MacCallum Cancer Centre	9656 1844
Sean Phefley	Victorian Cytology Services	9250 0300
Cameron Skehan	Monash Medical Centre	9594 3493
Adrian Warmington	St John of God Pathology (East)	5320 1171

Please feel free to contact any of the committee members listed above with any comments or suggestions. Contributions from readers are always welcome.

Advertising:

All enquiries for advertising in the next edition, please contact: TBA
trade@hgv.org.au

Advertising for the next editions of Paraffinalia closes: 1st October 2009.

- Single Sided A4 Black and White \$200
- Double Sided A4 Black and White \$325
- Color Insert (Supplied by company) \$325

PLEASE DO NOT POST ADVERTISEMENTS TO THE COLLINGWOOD MAIL BOX

Advertising rates:

Submissions:

Author enquiries and readers wishing to contribute articles or reports can contact the Editor – email: editor@hgv.org.au or post directly to

The Histology Group of Victoria Inc.
P.O. Box 1461
Collingwood
Victoria 3066
Australia

Please send articles on floppy-disc (preferably Microsoft Word format) for inclusion in the next edition. All articles submitted for publication will then become the sole property of the Histology Group of Victoria

Disclaimer:

Any opinions expressed in this publication are solely those of the contributing author and are not necessarily reflective of the Histology Group of Victoria or the editor.

NOTE: No responsibility is assumed by the Histology Group of Victoria for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. It is the users responsibility to ensure that all procedures are carried out according to appropriate Health and Safety requirements.

Copyright of this newsletter "Paraffinalia" is held by the Histology Group of Victoria. No material may be reproduced in part or in whole without written consent from the copyright holders. All rights reserved. ©

From The Chair: Blurb from the Bush

Since last I typed we have conducted both a scientific meeting and workshop. The scientific meeting on Tissue Processing saw the HGV drag out two old stalwarts, Geoff Rolls and Neville Farmer. I think their reputations preceded them as the room filled for the evening as we listened to an amazing, detailed analysis of tissue processing and its standardization. The highlight in many regards, was listening to the respective biographies of men who have dedicated their working lives to the success and advancement of Histology.

In July we again ran a workshop on intermediate cut-up. This was again well attended, with over 70 registrants. This year a small fee was charged for the workshop, but this did not seem to deter participants and enabled us to cover some of the costs of catering and venue hire required for such a large attendance.

Has the financial crisis hit the HGV? Unfortunately we were not been able to acquire a sponsor for the Cut-up workshop and as yet have not got a sponsor for the forthcoming meeting on September 3rd on liver biopsy scoring. The HGV will continue to be able to offer our scientific program, and trust that in time the trade companies that have supported us so admirably in the past will see themselves able to once again be knocking on our door.

Whist still a little way off, our AGM is in November. If anybody is considering volunteering for the committee of the HGV, but would like some more information on the responsibilities, please contact me at secretary@hgv.org.au

The trivia night was an enormous success this year as it headed back to a more central location. The tables were absolutely full and it was thanks mainly to Maria Chavez for the wonderful organization that continues to make this event a fantastic social event. Thanks also to the ever-unflappable Greg Jenkins for hosting the night.

As mentioned previously our ODS next year is well into planning mode. We hope to reveal a preliminary program in the next edition. Keep March 19th – workshops and March 20th – seminar free in your diaries. Plus of course there will be the traditional lab coat competition and social outings to accompany the weekend.

Adrian Warmington
HGV President

HistoChat:

HGV Inc. has introduced a bulletin board style discussion forum to their website - www.hgv.org.au. We hope this bulletin board "HistoChat" will become a forum for the open exchange of information and ideas within the histology community.

Registration is required, as is email authentication, to access *HistoChat*. No subscription fees are required and email addresses are used for correspondence and verification only. Registration is open to all. Students and junior staff are encouraged to participate. Free email clients such as hotmail may treat your authentication email as SPAM or JUNK MAIL, please check these folders if your authentication email does not arrive promptly. Authentication email needs to be responded to within 24 hours of registration. To those with online forum experience navigation should be relatively straight forward.

For those who need a little guidance YaBB have put together a step by step guide at www.yabbforum.com. Click on the "**Get Support**" link then click on "**Yabb Integrated Help**" There's no direct link on our web site as Yabb block direct linking to their help pages.

The forum layout is shown below:



There are a few broad forum topics. It's up to you to expand on them, ask questions, answer questions or just tell us your ideas. You can even upload images to assist with your discussions.

Sean Phefley, HGV IT Support

From The QAP:



Anatomical Pathology- Burwood

It has been a busy few months for Anatomical Pathology QAP. Two surveys of each of the Technical, Breast, Immunohistochemistry already been distributed as well as one of the Dermatopathology Oral and General. The Committee of Scientists for the Technical module met in April for three days of intensive assessments of the H&E exercise and the results showed that the overall performance of the H&E exercise this year was of a high standard and similar to 2008 with 7% unsatisfactory results, 8% borderline results and 85% of participants achieving a satisfactory result. Of those who were assessed as borderline or unsatisfactory in this exercise, the most common cause of poor staining related to either overstaining with haematoxylin (eg “the balance of haematoxylin is stronger than the eosin stain”, “non-nuclear components are haematoxylin stained”) or poor demonstration of nuclear components (eg “weak nuclear staining”). We are also currently working on the assessment of the Grocott Methenamine Silver Staining exercise and results are due out early August.



PHOTO 1. TECHNICAL COMMITTEE: L-R: TONY REILLY, LORELLA MANSO, JOE McDERMOTT, GEOFF ROLLS, SONYA PRASAD, NEIL

O'CALLAGHAN AND JUDY BRINCAT

The Immunohistochemistry committee met for three days in early June to assess the Immunohistochemistry breast tumour markers ER, PR, HER2 and HER2 BRISH, lymphoma markers CD30 and ALK-1 and technical markers CEA and E-cadherin. The Immunohistochemistry committee consists of a pathologist and medical scientists who assess every slide submitted by participants. By comparing the immunological staining of each lab against set assessment criteria we provide proficiency testing of laboratories' performance. The results were mailed out recently, so ask your management team to see how you performed. See the website for some good and bad examples.

We are already preparing survey material for the last Immunohistochemistry survey of the year for breast markers ER,PR,HER2 and HER2 BRISH, lymphoma markers CD30,CD15 and technical markers CEA,C-kit.



PHOTO 2. IMMUNO COMMITTEE: L-R MICHAEL PLATTEN, SONYA PRASAD, XIOAJUAN WU, ERIN LITTLE, RUTH DAVIES GLENN FRANCIS, ALEX LASLOWSKI ARNE TROSKIE AND THE MASTER TEPPANYAKI CHEF MR WONG

Whilst the photos look as if our meetings are all about eating and drinking, this is far from the truth. Our committee members are flown in from around Australia and New Zealand and can assess 500-600 slides over three days. It was Margaret Dimech's (the Program Managers) birthday during this time, so we surprised her with a birthday cake. Happy Birthday Margaret!



PHOTO 3. MARGARET'S BIRTHDAY WITH IMMUNO COMMITTEE: L-R GLENN FRANCIS, ARNE TROSKIE, XIOAJUAN WU, SHARITA MEHARRY MARGARET DIMECH, MICHAEL PLATTEN, SONYA PRASAD, JEY KURAVEL ,RUTH DAVIES, ERIN LITTLE, ALEX LASLOWSKI AND MARIJA FAVAS

The QAP Anat. Pathology scientific staff went to Adelaide in to attend the National Histology Conference in Adelaide. It was a three day conference providing great histology-focused program with a variety of speakers from Australia and abroad . In particular Dr John Chan from Hong Kong gave an excellent presentation about the interpretation pitfalls of Immunohistochemistry. We had a trade booth promoting the RCPAQAP Anatomical surveys. We received a lot of good feedback about our program and reached out to many people who did not know about our program.



PHOTO 4. THE AP TEAM JEYANTHI, SONYA, ERIN AND MARGARET



PHOTO 5. THE 2009 ADVISORY COMMITTEE PANE

On a final note the 2009 Advisory Committee meeting was recently held in Sydney to coincide with International Academy of Pathologist's meeting. The meeting was very productive with some great ideas put forward by pathologists to develop the program in coming years.

Another general diagnostic survey goes out the door next week, Forensic and Gynaecological pathology surveys are still open that just leaves the second Oral Pathology survey, Urological Pathology, the last general survey, Electron Microscopy and the final technical survey – wow the year is almost over.

Erin and Sonya

Would you like to get fast updates for Histology

- *Positions vacant*
- *Conference registration*
- *Scientific meeting reminders*

The HGV members email database is the way to go!

Simply email your name and email address to membership@hgv.org.au

No trade or other advertising will come your way

– strictly HGV or HGV sponsored events

Article Review:

Prognostic significance of bone marrow histology in multiple myeloma

Subramanian R, Basu D, Dutta TK – *Indian Journal of Cancer* 46, 2009, 40 – 45.

Multiple myeloma is the most common primary malignancy of the bone with an incidence of 4.5 per 100,000 population per year in the United States. It is a well recognized disease with significant variability in biological behaviour and survival. Bone marrow histology continues to be the chief entity for establishing a diagnosis of multiple myeloma amongst other clinical and laboratory parameters. In assessing plasma cell morphology, significant deductions can be made in considering the clinical stage and survival of affected patients. Histological classification and staging of multiple myeloma, based on the bone marrow trephine biopsy, was first put forward in 1987. However, to date no standard criteria based on the bone marrow biopsy has been devised to reliably predict prognosis.

Several prognostic markers have been made available to assist diagnosis beyond the initial histological assessment stage, however, in developing countries, like India, such tests are not available so building a set of realistic parameters solely based on the histological assessment of a bone marrow trephine is extremely significant. This study presents a method in evaluating the histological features in multiple myeloma affected bone marrow trephine biopsies which could be of use in prognostication.

Fifty-five cases of multiple myeloma diagnosed between January 2001 and December 2006 were included in this study; all cases had a bone marrow aspirate and biopsy done at the time of diagnosis. All patients were clinically staged as per the Durie and Salmon staging system. The biopsies were studied in detail for percentage of plasma cell infiltrate (<20%, 20-50%, >50%), pattern of infiltration (nodular, interstitial, mixed and diffuse), mitotic activity (0-1, 2-5, >5 per 10 high power fields) and plasma cell morphology (well-differentiated [plasmacytic], intermediately differentiated or poorly differentiated [plasmablastic]). For statistical analysis, SPSS software version 13.0 was used. Clinical stage and plasma cell morphology were correlated using a chi square test and Spearman's correlation coefficient. Survival analysis was done using the Kaplan-Meier method.

Seventy-six percent of patients included in this study were in clinical stage III, with 17% and 7% in stages II and I respectively. The clinical stages of the patients correlated significantly with the parameters used. Plasma cell morphology, a well established prognostic marker, shared a key relationship with other bone marrow histological features. Patients with a poorly differentiated plasma cell morphology [plasmablastic form], predominately had >50% plasma cell burden in their marrow, a diffuse pattern of infiltration with increased mitosis and a higher degree of fibrosis, which in turn correlated within a shorter median survival when compared to patients with more favourable features.

An interesting observation made was in contrasting the bone marrow aspirates with the trephine biopsies, where a significant difference was seen when comparing cases which had a >50% plasma cell burden: only 40% in aspirates compared to 71% in their consequent trephine biopsies. Reasons for this vast discrepancy include technical problems like blood dilution or sample clotting, and sampling variability in respect to disease distribution in the marrow, hence proving that the exact extent of marrow involvement is better appreciated on a biopsy.

This study is the first to give a detailed analysis of the bone marrow parameters and their comparison to the clinical stage of the disease. The article emphasises the role of bone marrow histology not only in establishing a diagnosis of multiple myeloma, but also in correlating well with the clinical stage of the disease, and in providing prognostic information, especially in developing countries where the use of new emerging prognostic markers are not available.

Michelle Zammit
The Alfred Hospital

AUSTRALIAN INSTITUTE OF MEDICAL SCIENTISTS

PO Box 1911 Milton Qld 4064. Phone: 07 3876 2988 Fax: 3876 2999 Email: aimsnat@aims.org.au



AIMS Vic Branch

CANCER DIAGNOSTICS

Peter Mac, Sat Aug 29th 2009

Sponsored by:

SIEMENS

REGISTRATION FORM / TAX INVOICE

ABN 12 945 883 573

DELEGATE INFORMATION

Title: _____ Given Name: _____ Surname: _____

AIMS Membership Number (if applicable) _____

Address for correspondence: _____

City _____ Postcode _____

Organisation: _____ Position: _____

Phone Work: _____ Fax : _____

Phone Home: _____

E-mail: _____

Preferred name on badge: _____

Special Dietary or Disability requirements: _____

ENQUIRIES

Carmelle Claney
Ph 03 9508 1703
Fax 03 9508 1448
Email: pathmanager@cabrini.com.au

CANCELLATION POLICY

Registrants may receive a full refund provided they notify the conference secretariat at least 14 days before the start of the conference, otherwise no refund will be given.

REGISTRATION FEES

All prices include %10 GST

	Each	Tick Box
Registration - AIMS Members	\$55.00	
Registration – Non AIMS Members	\$88.00	
Students	\$25.00	
TOTAL AMOUNT PAYABLE		

PAYMENT OPTIONS: Payment of fees must accompany all registration forms

Credit Card Payments

To pay by credit card please fill in your credit card details below and fax with your completed registration form to (03) 9508 1448

Please tick (✓) box: Visa Mastercard

Card No:

Expiry date: ____ / ____ Cardholder Name: _____

Signature: _____ Date: ____ / ____ / 2009

Cheques and Money Orders

Please make payable to **Australian Institute of Medical Scientists** and post completed registration form to:

AIMS Victorian Branch
c/o Carmelle Claney
Cabrini Pathology
183 Wattletree Rd
Malvern VIC 3144

Please regard this registration form as a TAX INVOICE. A separate invoice may be issued on request. Upon payment of the appropriate amount this registration form will become a tax invoice. Please keep a copy of this form for taxation purposes.

Intermediate Cut Up Workshop 2 Report:

This workshop was well attended with 68 participants. The two speakers, Dr. Stephen Lade from Peter Mac and Dr. Stephen Chan from Dorevitch Pathology, provided valuable information in a friendly and entertaining manner.

Dr. Lade presented the first session on Haematolymphoid tissues. He discussed lymph nodes, spleen, tonsils and incidental lymph tissue. He noted that lymph nodes may be enlarged for a variety of reasons including infective disease, inflammatory disease, primary malignancy or metastases. He covered the factors involved in diagnosing lymphomas such as H&E's, flow cytometry, immunohistochemistry, PCR and cytogenetics. He stated that flow cytometry was more useful in typing B-cell lymphomas than T-cell lymphomas or Hodgkin's disease, whereas PCR was more useful for T-cell lymphomas.

His comments on FNA's were that while they are easy, painless and cheap to perform, they have a limited use, and are often inadequate for confident typing. With cores, he recommended using PCR rather than flow cytometry, and said cores were usually adequate for typing. Cores are usually well fixed due to their small size. Lymph nodes on the other hand, should be sliced, but not too finely, to allow for adequate fixation. Any excess fat should be trimmed away. Once fixed, a good transverse section through the centre of the node should be taken, as well as a section of any abnormality. Where possible, place a slice of normal and a slice of abnormal tissue into the same cassette. This may reduce the need for duplicate immunohistochemical stains further down the track. Sentinel nodes should be entirely blocked, with levels cut and appropriate IHC performed. Tonsils have both an epithelial component and a lymphoid component and should also be sliced transversely. In all cases, descriptions should be concise, and include size, weight (where appropriate eg. spleen), texture, external surface, cut surface, size and appearance of any focal abnormality.

Dr. Chan presented the second session on cervical tissue. He recommended the use of descriptive "word pictures", along with a good understanding how and what to sample, without being too wordy. His protocol is that dictation should be clear, one case done at a time, instruments and cutting board wiped between cases, state whether the tissue was received fresh or in formalin, give the measurements and weights, and a diagram if you think it is useful. Use good cutting technique, keeping blocks flat and even. Don't make the blocks too thick, and keep them to a minimum. (I hope he practises what he preaches and preaches to other pathologists). Try not to be disturbed whilst working, and don't try to work too quickly.

He discussed the various types of cervical specimens: punch, cone, LLETZ and endocervical curettage. Punches usually require multiple levels and may be difficult to orientate. With LLETZ's, his protocol is to describe the number of pieces, measure the ectocervical diameter and depth, describe the dimension and position of the os, not to ink unless oriented by suture dissection, take serial 2mm parallel sagittal sections, putting the end pieces in block A and the remainder in separate blocks. With oriented cones and LLETZ's, the suture marks the 12 o'clock position. In these cases, cut surfaces should be inked, take serial 2mm parallel sagittal sections, with Block A being the 3 o'clock margin and the last block the 9 o'clock margin, with the remainder in separate blocks. Good sections should show the squamo-columnar junction in the H&E. With non gestational curettings, describe tissue fragments, blood clot, mucous, polyps and fat if present, and block all the tissue. With POC's include the palest tissue, some mixed tissue, but not blood clot. Describe any spongy, membranous tissue, foetal parts (especially foot length, which gives an indication of foetal age), or any abnormalities such as vesicles and take up to 4 blocks. His recommendation for taking tissue for karyotyping in order of suitability is skin, cartilage, amniotic membrane and spongy tissue.

Reported by Elizabeth Baranyai
Cabrin Health Malvern



AIMS Victoria One-Day Seminar

CANCER DIAGNOSTICS

Sponsored by:
SIEMENS

Saturday 29th August 2009
Peter MacCallum Cancer Centre
St Andrews Place
East Melbourne
Level 3, Lecture Theatre
09.30 am – 3.30 pm



Speakers & topics include:

Dr Cliff Meldrum – Molecular Pathology
David Faulkner – Tumour Markers
Helen Haysom – Transfusion Complexities & Malignancy
Sue Sturrock – Immunohistochemistry topic
Dr Kate Burbury – Thrombophilia & Cancer
Speaker TBA – Cancer Epidemiology in 2009

Cost:

\$55 AIMS member
\$88 Non-AIMS member
\$25 AIMS student member
(includes lunch and refreshments)

Enquiries: Peter Gambell
Email peter.gambell@petermac.org

AIMS Victoria Branch Annual General Meeting

**...to be held after final
presentation**

ALL WELCOME!!!!

Position vacant:

MEDICAL SCIENTIST

Department: Anatomical Pathology - The Royal Children's Hospital

Applications are invited for a permanent, full time position within the Division of Laboratory Services in the Anatomical Pathology Department.

If you are hardworking, organised, conscientious and looking to work in a progressive team environment, then this is the job for you. The successful applicant will be proficient in routine histological techniques including immunohistochemistry and cut up.

Experience in cytology preparation and mortuary techniques would be advantageous. Good communication skills and a team work mentality are essential.

Enquiries: Dominique Davidson 9345 5759

Reference Code: 05191

Closing Date: 17 August 2009

View Job Description: Medical Scientist

G1.doc<http://www.rch.org.au/files/hr/pos_desc/20090727120717.doc>

Appointment is subject to a satisfactory police check. No agencies please.
This organisation is an Equal Employment Opportunity Employer.

Australian Institute of Medical Science (AIMS) Preliminary Flyer and Date claimer

AIMS Tropical Division and Partners

25th Annual North Queensland Conference 11th to 14th June 2010

Celebrating 100 Years of Tropical Medicine in Townsville

*On behalf of the Organising Committee I extend you an invitation to attend
our 25th Annual Conference to be held from 11th to 14th June 2010 at
Jupiter's Hotel & Casino.*

Contact:

David Porter

+61 7 47962400

david_porter@health.qld.gov.au

www.aims.org.au

Professional Partners to date;

- The Australasian College of Tropical Medicine (ACTM).
- North Queensland Centre for Cancer Research (NQCCR)
- Histotechnology Group of Queensland
- Australian Association of Clinical Biochemists (AACB)
- Australian Phlebotomy Association
- Australian Society for Microbiology
- James Cook University



Nomination Form for Election

to the committee of Management

Of the Histology Group of Victoria Inc



Histology Group of Victoria Inc.

AGM: Thursday, 12th November 2009

Nominated Person

Institution.....

Email Address.....

Position Nominated For

(please Tick Box)

President

Treasurer

Secretary

Committee Member

All nominations must be signed by two HGV members

(If you receive Paraffinalia you are a member)

Name of MemberSignature.....

Name of MemberSignature.....

Nominations must have the consent of the nominee

Signature of Nominee.....

Nominations must be returned no later than Thursday, 5th November 2009

Please send nomination form to:

The Secretary
Histology Group of Victoria
PO Box 1461
Collingwood
VIC 3066

Under the Microscope:

reported by Maria Chavez



**Alison Nanscawen
Laboratory Manager
TissuPath**

1. What was your first job?

New Zealand Natural ice-cream- I always volunteered donning the Hokey Pokey Bear suit.

2. What attracted you to Histology?

One can only be the Hokey Pokey Bear for so long.

3. What is the worst decision you have ever made?

There are many. Most memorable / traumatic being around eight years of age & performing the usual street bike acrobatics standing on the bike seat hanging onto the handle bars downhill. This day we decided to add a jump to the mix, resulting in myself sliding down hill face first, with the worst scarring being my dead front tooth.

4. What is the best decision you have ever made?

Career-wise, it would have to be moving to TissuPath two and a half years ago.....thanks, David.

5. Who would you most like to have dinner with and why?

My grandparents.....just one last time.

6. What music do you enjoy listening to?

Nana Mouskouri.

7. What is your favourite stain?

MSB.

8. What is your favourite food/restaurant?

A sandwich: turkey, swiss cheese, mushrooms, spinach leaves, cranberry sauce & avocado on rye.

9. What are you reading at the moment?

"The Slap" by Christos Tsiolkas.

10. What is the best conference you have ever attended?

The last two: Sunshine Coast & Adelaide are on par returning me to my youth in the beverage consumption stakes.

11. Are there any current projects you are working on at the moment?

NATA- our reassessment in a couple of months is consuming my life.

Future Scientific Meetings: 2009



Histology Group of Victoria Inc.

5th March

~~Scientific Meeting – Series of Short Presentations
Venue – PeterMac~~



30th April

~~Scientific Meeting – ABPAS Test and Teach
Venue – PeterMac
Speaker – Sonya Prasad RCPA QAP~~



8th – 10th May

~~4th National Histology Conference
Hosted by Histology Group of South Australia~~

4th June

~~Scientific Meeting – Tissue Processing
Venue – PeterMac~~



2nd July

~~Cut – Up Workshop
Venue – St Vincents~~

31st July

~~Social Event – Trivia Night
Venue – Mt Erica Prahran~~



3rd September

~~Scientific Meeting – Liver Biopsy Scoring System
Venue – PeterMac~~



12th November

~~Scientific Meeting & AGM – Plecomacrolide toxins and endocrine pancreas remodelling
Venue – PeterMac
Speaker – Dr Mark Myers~~

Next Scientific Meeting:



Liver Biopsy Scoring

- Speakers:** Dr. R.C.U Priyadarshika
Linda Beaton
Monash Medical Centre,
Clayton
- Date:** Thursday, 3rd September, 2009
- Time:** 6:00 – 6:45pm Refreshments
6:45 – 7:30pm Presentation
- Venue:** Peter MacCallum Cancer Institute
7 St. Andrews Place,
East Melbourne
- Presentation:** Brockhoff Lecture Theatre
Level 3, Smorgan Family Building

Proudly Sponsored by



Attendance at this meeting contributes to APACE points