

Mouthpiece



ANZSRS Annual Scientific Meeting Melbourne, 2000



President's Address

I hope those members who were able to attend our Annual Scientific Meeting in Melbourne enjoyed themselves and went back to their laboratories having learnt something. Melbourne turned on beautiful weather and I extend my thanks to the organising committee, in particular John Martin, who did an outstanding job.

The theme for the 2000 ASM was Quality Control. This topic was chosen mainly because many laboratories are currently preparing for TSANZ Accreditation. We also felt it was time we catered to our more junior members, whilst providing an opportunity for all members to improve quality control practice.

We had a very good turn out at the AGM this year, which was fantastic. The AGM is crucial to the running of the Society and gives members the opportunity to have their say and help shape the future of ANZSRS. Kevin Gain will update the membership of items discussed at the AGM in his Executive Update.

As you know, the Society has introduced Life Membership into the constitution and one of my most pleasurable tasks as President thus far, was the opportunity to present the first Life Membership to Alan Crockett, in recognition of his outstanding contribution to the Society. I also had the pleasure of presenting Dr Sandra Anderson with the first ANZSRS Fellowship award. This award is in recognition of scientific contribution to our Society. (Nominations for these awards in the future should be directed to the Executive. Decisions will be ratified by the Board prior to each year's ASM.)

Along with our annual oral and poster presentations, this year we



introduced an award for Best Young Investigator. This award is to recognise and encourage scientific presentations from our younger members at each year's ASM and I congratulate Paul Finlay, who was the first recipient of this award.

Congratulations are also in order to the 9 members who were presented with their certification awards. This number was good to see and I hope those of you who have not yet attempted the CRFS exam will make it your goal for the next year.

I am looking forward to my second year as President and am pleased to say that the Executive have met most of the goals we set at the beginning of our term. The Executive welcome any suggestions from the membership as to new goals and challenges to undertake in 2000.

I hope you are all looking forward to Winter. I am about to escape for a few weeks of sun and culture in Europe. The only link with work is that I am taking my long service leave, which from all accounts is not as generous as Australia - 5 weeks for 25 years of service! And yes I did start working when I was ten.

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From The

editor

The recent ASM held in Melbourne is fast becoming a distant memory as we move forward to other tasks and projects demanding our attention. But so as we have lasting momento, this edition of Mouthpiece is, quite obviously, dedicated to the 2000 ASM.

Thankyou to those people who forwarded their Biological Control data. The survey form appears on page 5 of this edition and I would encourage you to complete one and send it as soon as possible. The results will be analysed and presented in the next edition of Mouthpiece due out in September. Please note that all details will remain confidential and, whilst information regarding the comparative performance of each laboratory will be made available to the relevant staff member (s), data will be published confidentially. In light of what was discussed at the ASM, this is a particularly relevant exercise and please bear in mind that the greater the response to the survey, the more representative and useful the data will be.

You will notice our first Clinical Contact segment appears later in this edition. This segment is designed to highlight an "interesting case" and demonstrate how, from a medical perspective, the physiological measurements help with the interpretation and management of that patient. I hope that Clinical Contact continues to flourish with the assistance of the membership in gathering support and input for the segment.

Kevin has touched on the controversy of the CRFS title in his Executive Update, which was discussed at the Board meeting and again at the AGM. Having brought this issue to the attention of the membership, I would encourage those who

feel passionately about either argument to clarify the pertinent issues. If we are to vote on this matter at the next AGM, as Kevin suggests, the membership should be well informed, and Mouthpiece is the perfect medium to continue the debate until we meet again next year.

I hope you enjoy the photographs of the ASM.

*Belinda Breust, CRFS
Editor*

Jobspot



Respiratory Scientist

Dept. of Respiratory Medicine, Princess Alexandra Hospital

A suitably qualified scientist is required for a position in the Respiratory laboratory. Duties include calibration and preparation of equipment used in respiratory function testing, performing a range of respiratory investigations, including pulmonary function, exercise and bronchial challenge tests, Quality Assurance activities, participation in departmental research, some administration duties, etc.

Appointment at Qld Health PO2 level.

Enquiries: Brenton Eckert (07) 3240 2047.

Executive Update

It was heartening to see 62 of 105 member registrants present at the AGM despite the attractions / distractions of Melbourne. This level of interest bodes well for the Society.

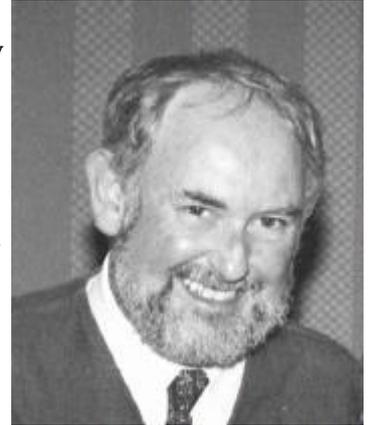
The Executive was pleased that the proposed amendments to the Constitution were passed en bloc by the membership. All references to "technology" have been substituted with "science", which is more in keeping with our title. Also, the introduction of Life Membership allows us to honour senior members of the Society yet allow them to retain full membership rights. The existing category of Honorary Membership did not allow for the retention of voting rights.

The Executive were also pleased to have their proposals for educational / study grants accepted by the membership. These grants have been set up mainly to assist Society members to study for the Certificate and/or Diploma in Respiratory Science run by the Charles Sturt University, though other relevant courses will also be considered. The first grants will be available for study in 2001 and applications will be called for as soon as finalised guidelines are available.

The process of finding a new Logo for the Society continues. The Executive had worked up a proposal based on the winning entry from the Logo Competition but the Board rejected this. At the AGM a straw pole indicated a 50 / 50 feeling towards our proposal (as shown on this page). There were several offers at the AGM to put our ideas to Graphic Artists for further enhancement and we will report back in Mouthpiece. We hope to put a final design to the next AGM where the decision can be taken re. Adoption. A logo is a very important device and it must be chosen with great care and be supported by a large majority of the membership – if not unanimously.

The only contentious issue at the AGM related to the CRFS credential. Two schools of thought emerged regarding the incorporation of the word "Function" in the title. Those wishing to remove the "F" argued that the exam covers more than testing whilst those of the opposite persuasion argued that since so many members had already

obtained the credential and that it is widely accepted and recognised, the title should be left alone. It was decided to move the debate to Mouthpiece to allow the various arguments to be put to the membership at large. There will be a motion put to the AGM in Brisbane next year arguing for changing the title to CRS if enough support is present.



Thank you to the Melbourne team for a very stimulating and enjoyable meeting. Thanks also to the membership for the support shown to your Executive. Our job is made much easier if we know the membership is behind us.

It is a year since Belinda assumed the mantle of Mouthpiece editor. She has done a fantastic job and struck me as being even more enthusiastic than she was a year ago. She has earned and deserves the support of the membership. Mouthpiece is your newsletter so please keep those contributions coming.

Kevin Gain, PhD

Although the competition has officially ended, the search for a new Logo continues. The Executive is supportive of any moves to recruit professional designers for assistance with our new logo. The time is ripe for new designs to represent our Society.



Variability in Biological Quality Control Data

We encourage everyone who has a record of biological (BC) data to participate in the survey, including those laboratories who only have spirometry data to contribute, or data from only one BC subject. The results will be analysed and presented in the next edition of Mouthpiece due out in September.

Please note that all details will remain confidential. Information regarding the comparative performance of each laboratory will be made available to the relevant staff member(s) only.

Biological Control Data							
				Subject A	Subject B	Subject C	
Dates which the data span							
Gender of BC (M/F)							
Age of BC (yrs) at time of data							
	No. of Measures			COV (%)#	COR *	COV (%)#	COR *
	A	B	C				
FEV1							
FVC							
TLC							
FRC							
RV							
DLCO (ml/min/mmHg)							
VA							
KCO							

Laboratory

Equipment Model

Method used for measuring TLC (eg. Helium dilution etc.)

Contact name for future reference

The Australian and New Zealand Society of Respiratory Science Inc.

Survey forms should be sent to:

Belinda Breust
Respiratory Medicine Dept.
Princess Alexandra Hospital
Woolloongabba QLD 4102
Fax: 07 32405899
Email:breustb@health.qld.gov.au



Thankyou for your co-operation.

Coefficient of variation (COV) = Standard Deviation / mean

* Coefficient of Repeatability (COR) = 2 × Standard Deviation

ANZSRS ANNUAL SCIENTIFIC MEETING
Melbourne, 2000

"Quality Assurance in the Respiratory Laboratory".

The Welcome Reception for the ANZSRS Annual Scientific Meeting was held on the 55th Floor of the Rialto, an excellent vantagepoint for spectacular views of Melbourne by night. The Reception was complimented, from all accounts, by a fascinating talk by Michael Pain on the history of pulmonary function testing. Unfortunately I was unable to attend but can only assume, from the photographs and feedback, that it was enjoyed by all those who did.

The meeting opened bright and early on Saturday morning with a welcoming speech by our President, Maureen Swanney. Paul Guy then gave a respectful tribute to Jeff Whitelaw, (see April 1999 edition of Mouthpiece). Jeff had been a long-standing member of the ANZSRS, and his contribution was recognized by naming the opening plenary session in his honour. This plenary session continued with the first of two presentations from our guest speaker, Assoc. Professor Jensen, from Salt Lake City, who spoke on "Statistics in the respiratory laboratory". Professor Jensen highlighted the relative simplicity of basic statistical measurements that provide the basis of any QA programme, with which we should be familiar.

The remainder of Saturday's program consisted of oral and poster presentations from the membership. Congratulations to the winner of the oral presentation, Danny Brazzale, from the Austin Repatriation Hospital in Melbourne. Danny spoke on the "Effects of allowing adequate deadspace washout in the measurement of carbon monoxide transfer factor". As Danny's first oral presentation at international level, I am sure that the award was even more satisfying. Congratulations also to Lily Daviskas who, unlike Danny, is no stranger to research presentations. Lily gave a poster presentation on "The 24 hour effect of mannitol on the clearance of mucus in patients with bronchiectasis". The inaugural Young Investigator's award was given to Paul Finlay, from Monash Medical Centre, for his poster presentation entitled "Co-ordination of breathing and swallowing in patients with chronic obstructive pulmonary disease."

An eagerly awaited Conference Dinner was held on Saturday night at the Hyatt on Collins and as always was an enjoyable, yet rare occasion to interact with members on a social level. The photographs speak



for themselves!

The Sunday symposium on Quality Assurance was well presented by each of the ANZSRS members who offered their expertise. It allowed a very useful insight into more fundamental parameters of the Respiratory Laboratory that can sometimes be overlooked. Guest speaker Lloyd Penberthy gave an interesting perspective of QA in the pathology laboratory and whilst not directly applicable to all respiratory labs, it was interesting to see the concepts involved. Assoc. Professor Jensen spoke again on the validation of respiratory equipment, which tied in well with the morning's symposium.

The meeting closed mid-afternoon as most of us interstate travellers rushed to catch flights. I think we all agree the organising committee, together with the ALF, did an excellent job. The level of commitment and dedication to such an organisational feat is often more than we realise. With next year's meet-

Website Update

Development of the Society website is proceeding well - we have now appointed a website designer (Kustas Tiivas in Adelaide), and are finalizing the content to be included. A special feature will be the noticeboard which, with its very short turnaround time, will be the ideal forum for rapid communications (eg advertising job vacancies, announcing new developments, asking tricky questions etc). We are keen to make the website a useful place to visit regularly, so please feel free to make any suggestions you may have about what should (or should not) be included. We hope to have the site up and running within a couple of months.



Jeff Pretto
Website Working
Group Coordinator

ANZSRS 2000 ANNUAL SCIENTIFIC MEETING



ANZSRS 2000 ANNUAL SCIENTIFIC MEETING



Profiler

Brenton Eckert

Adelaide born & bred, Brenton grew up as a true child of the '70s - enough said. We pick him up at the genesis of his professional career at the University of Adelaide, where he

completed his BSc between 1976-1979, triple majoring in anatomy, pharmacology, and advanced beer consumption. His first job, which would lead him to the bountiful paths of respiratory science, was a 6 month research grant working with Peter Frith at the Royal Adelaide Hospital. From there he went to the Queen Elizabeth Hospital for 5 years, working with Sean Homan, followed by a further 5 years back at Royal Adelaide Hospital with Andrew Thornton. These 10 years are shrouded in mystery and whatever it was exactly that he did during that time, this author has been unable to ascertain, and Sean and Andrew aren't saying! However, we do know those critical years saw Brenton's evolution from mullet-headed neophyte to experienced Respiratory Scientist.

In 1989 Brenton felt the call of more exotic climates, and moved to Queensland - beautiful one day, full of Mexicans the next! In the midst of a pilots' strike, he left Adelaide, temperature 7°C, at 6 am on a Hercules Transporter and arrived in beautiful Brissie 13 hours later, temperature 30°C, 99% relative humidity - the shock has nearly worn off!

The move was actually a professional one, and Brenton took up a position at the Princess Alexandra Hospital. At that time, PAH had a Clinical Measurements Department, with staff 'multi-skilled' in respiratory, cardiac, neurological, vascular, and sleep investigations. Brenton moved to have staff specialise in respiratory measurement, and eventually gained autonomy for the Respiratory Lab. In his time at PAH, Brenton has developed the lab from one performing just the basic respiratory function tests to one performing most respiratory investigations, including ambulatory lung function test-

ing, hypertonic saline challenges, exercise induced asthma and respiratory exercise tests, nasal airway resistance, and lung and chest wall mechanics. Somewhere along the line, Bren-

ton has acquired a disturbing tendency to self-administer oesophageal balloons on the slightest pretext, resulting in a new test known as 'lunch mechanics' ('What will we have for lunch today? An oesophageal balloon and a cheese sandwich!').

In 1994, Brenton enrolled part-time in a MSc in Clinical Physiology at Griffith University, completing this in 1996. His research topics were 'Chronobiology of the respiratory system', and 'Circadian variability in airway calibre'. Brenton has developed an ongoing interest in airway calibre variability and its use in asthma management. Since completing his MSc, Brenton has been invited back as a regular visiting lecturer for the course.

Brenton has been a strong supporter of the ANZSRS, since, when in his second shift at Royal Adelaide, he was dragged kicking and screaming to a local branch meeting. He first presented at the Annual Scientific Meeting in 1988 and has been a regular presenter ever since. He has served as Board Member for Queensland for a number of years and of course, now, as president-elect, his input into the Society continues.

On a personal level, Brenton's major interest is his family, the lovely Big Al and two beautiful blonde boys. He has been a keen AFL follower since playing over 200 games for Adelaide Uni, and is now an avid Brisbane Lions fan. Other interests include tipping losers in the Austin & Repatriation Tipping Contest, playing golf (badly), drinking too much Cointreau and ice, and developing new pursuits, particularly during Thoracic Society of Queensland meetings, specifically sofa surfing!

Clinical Contact

Differentiation between restrictive processes using routine measurements of pulmonary function.

Lung Function results are rarely pathognomonic. It is important when interpreting data that one looks beyond the numbers and considers what may be happening physiologically. It is also important to ensure that all the data are consistent with the proposed diagnosis or conclusion. For instance, a restrictive pattern of reduced volumes with high flows is more consistent with interstitial infiltration, whilst a restrictive pattern of reduced volumes with a normal flow-volume relationship argues for mechanical "pump" rather than lung tissue problems.

The data presented below were obtained on an elderly female patient admitted for extreme shortness of breath and wheeze developing over a short period of time. The data illustrate the importance of considering all the information collectively, and more importantly, exploring the relationships between measured volumes and flows.

low, and VA and TLC very similar (more-so than in this particular example). The above spirometry does not, however, show the improved flows relative to volume that would be expected in interstitial fibrosis ie. $FEV_{1.0}/FVC$ and FEF_{25-75} are both low rather than high, RV/TLC is 45% (expected is about 32%) and there is, a slightly higher than usual difference between TLC and VA. The fact that these corroboratory indices do not fit the typical pattern argues against an interstitial lung problem. Moreover, the low volumes and proportionally low flow rates are more in keeping with a restrictive process of a mechanical nature.

The intervention applied was diuresis. The clinical diagnosis was Left Ventricular Failure. The restrictive pattern was due to fluid build up causing stiffness of the lung tissue and narrowing of the airways. This accounts for both low volumes and low flows seen in the spirometry data. Diuresis

Ht 157cm Wt 81kg	Pre - Intervention		Post - Intervention		
	Value	% Predicted	Value	% Predicted	% Change
Spirometry					
FVC	1.40	55	2.13	83	+52
FEV1.0	1.02	51	1.76	88	+73
FEF25-75	0.75	40	1.80	94	+140
PEFR	2.22	43	4.69	91	+111
PIFR	2.08	60	3.21	93	+54
Lung Volume Subdivisions					
SVC	1.30	51	2.40	94	+85
FRC (HD)	1.29	47	1.75	64	+37
RV	1.10	51	1.49	69	+35
TLC	2.40	51	3.89	83	+62
Diffusion					
DLCO(SB)	6.66	35	14.04	73.8	+ 111
VA	1.84	34	3.16	59	+72
KCO	3.62	77	4.44	95	+23

The baseline values indicate a severe restrictive process with low Volumes and diffusion. SVC and FVC are reasonably close, suggesting little airway collapse on forced expiration. The $FEV_{1.0}$ is low, but relative to the vital capacity, it is acceptable, again arguing against any major airflow obstruction. VA and TLC are also reasonably close, suggesting gas mixing in the lung is satisfactory. The greater impairment of VA than KCO suggests a large part of the fall in gas diffusion is due to the loss of volume and hence surface area. All these results are in keeping with a restrictive type process.

If these results were due to an interstitial lung problem, then the expectation would be that $FEV_{1.0}/FVC$, FEF_{25-75} , and probably PEFR would be raised, whilst RV/TLC would be

has returned spirometric volumes and flows, TLC and KCO to within the reference ranges and there has been significant improvement in FRC, RV and DLCO.

Simple analysis of flow rates relative to volumes can provide a basis for differentiating between restrictive processes affecting the lung tissue and those affecting the pump mechanism of the lungs. These subtleties that exist within routine measurements of pulmonary function and the diagnostic potential of such, should not be overlooked when evaluating lung function.

*Dr Kelvin Grainger
Respiratory Consultant
Wellington Hospital*

Survey Form ANZSRS Database

For those members who have not yet filled in a survey form, please complete the details below and send to Kevin Gain.

Name

Laboratory

Hospital/Institution

Street Number/Name

Suburb/Town

State/Country

Postcode

Phone Number

Fax Number

EMAIL

CRFS Qualification (please tick) YES NO

Highest tertiary qualification attained:

Assoc. Dip. Bachelor Degree Masters PhD

Other, please explain; _____

Do you have one, or more area(s) of interest/ expertise? (please tick)

Instrumentation Methodology Physiology Education Computers Administration

Other, please explain; _____

On what subjects have you had publications? _____

**The Australian and New Zealand Society of
Respiratory Science Inc.**

Survey forms should be sent to:

Belinda Breust
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CRFS Examination

Congratulations to **Robyn Dangerfield** from Flinders Medical Centre S.A. who recently passed the CRFS exam.

This brings the number of ANZSRS members with the CRFS credential to 47.

For details of the examination and application forms, please contact:

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Clinical Measurements Dept.

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Greenlane



Reminder!

Next year's ASM is to be held in Brisbane, QLD on March 16-18.

You are invited to contribute short articles, meeting reports and calendar details etc. These should be sent to:

Mail: B. Brust, Respiratory Laboratory Level A3, Princess Alexandra Hospital, Ipswich Rd, Woolloongabba, QLD, 4102.

Ph: 07 3240 2046.

Fax: 07 3240 5899.

Email: breastb@health.qld.gov.au