THE AUSTRALIAN AND NEW ZEALAND SOCIETY OF RESPIRATORY SCIENCE INC.

December 2000

Mouthpiece

President's Address

Inside this issue:

Well, another year has gone by at the speed of a forced expiratory manoeuvre! setting the tone of the new millennium. This has been a very busy year, Society issues not withstanding and I am looking forward to the next few months of the NZ Executive term before we hand over the reins to Queensland.

Executive Update

By the time this edition of Mouthpiece is published, the date for ANZSRS Education Grant applications for 2001 will have passed. All applicants will be informed of the outcome of their application by the end of January 2001.

Shame on those members who do not pay their annual fees on time! Those who have not paid their fee for two years will be removed from the Society's membership list. I imagine non-payment by many members is not a conscious decision but more an issue of procrastination, but please keep in mind the extra work created for the executive with chasing up unfinancial members. Next year's fees are due 1 January 2001. More importantly, unfinancial members are not permitted to vote on important Society matters at the AGM.

The election of regional Board members for the next two-year term should have taken place by December 31. We ask that the current regional board members inform the Executive of the names as soon as possible so we know who to communicate with. We hope there are no delays within the regions due to multiple recounting of votes and trust the voting system was clear and unambiguous.

Nominations for Life Members and Fellows of the Society for consideration at next year's Board meeting should be forwarded to the Executive so we have time to circulate these to the board. All nominations should include the reason for the nomination and I refer you to the notice on this topic on page 11.

Mouthpiece

Belinda has continued to raise the standard of Mouthpiece and the September issue was outstanding in terms of quality and quantity. Please send her articles, letters to the editor, news etc to assist with the continued quality of Mouthpiece.

ANZSRS web page

The ANZSRS web page (www.anzsrs.org.au) is an exciting new forum for the Society and we thank Jeff Pretto for his diligence in masterminding and co-ordinating this new endeavour.

President's Address

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Like Mouthpiece, your input is important and the noticeboard a useful way to communicate news within the society.

HIC and the Relative Value Study

We have formed a working party for this important issue. We met with the Thoracic Society in October and were pleased with the response to our suggestions for providing information on this topic. We have developed a costing template, which is currently being circulated to a number of laboratories both in the private and public sectors. This provides information on the actual costs of running a respiratory laboratory and provides the basis of a robust rebuttal of the PWC costings. We encourage people to contact us if they have any concerns. The information will be submitted to the HIC via the TSANZ early in 2001. The members of the working party include Paul Guy, Kevin Gain, John Martin, Brenton Eckert, Geoff Foote and Maureen Swanney.

"The ANZSRS web page *(www.anzsrs.org.au)* is an exciting new forum for the Society "

Standards New Zealand

Recently I was appointed to a Standards New Zealand expert committee to develop a national guideline that identifies the protocols to be applied following the discovery of positive microbiological endoscope infection control tests. This issue is important for New Zealand but may also be of interest to Australian members. Although these guidelines will be circulated for comment throughout New Zealand, it would be helpful if all those involved with bronchoscopy procedures let me know so I can ensure you are included in the loop. I am only aware of Wellington, Dunedin and Christchurch as centres that have respiratory scientists participating in bronchoscopy procedures. Recent events in New Zealand and around the world, often highlighted in the media, demonstrate only too clearly the potential impact of this particular adverse event on consumers, health professionals and all concerned.

2001 ASM Brisbane

The organising committee for next year's ASM has been doing a good job for the Society, I am impressed with their early organisation, and I'm sure the content of the scientific program will have something to interest all delegates. The social program looks interesting and will no doubt set the scene for another memorable meeting and generate many photo opportunities revealing professional party behaviour in future editions of Mouthpiece! I am looking forward to a sofa surfing lesson from Brenton Eckert, the incoming president. We have decided on casual dress for next year's meeting and I suspect there was a hidden agenda by some members of the organising committee who just happen to be the next executive! Consequently, they will not have to impress us in uncomfortable formal attire and suffer in the warm Queensland weather.

2001 ANZSRS / TSANZ N.Z. Branch Meeting

We are about to commence the planning and organisation for a joint ANZSRS and TSANZ New Zealand Branch meeting 23 – 25 August 2001 in Christchurch. This meeting is being organised at this time of year because many will be in town to attend the 34th International Congress of Physiological Sciences, IUPS 2001, 26 – 31 August 2001 (http://www.iups2001.org.nz). It is anticipated that the IUPS meeting will attract thousands of registrants from all over the world. Further details of our meeting will be posted on the ANZSRS

From The editor

Yet another year has passed and the annual Christmas celebrations are upon us once again.

This edition of Mouthpiece is the last for what has been a fairly successful year. Mouthpiece has seen the introduction of commercial advertising, the addition of regular segments such as Clinical Contact and the continued publication of feature articles covering topics such as Challenge Testing and the use of Biological Controls. Yet another 4 of our more senior members (Rein Simmul, Brenton Eckert, Peter Rogers and Sandra Anderson) have been Profiled in what has possibly become the most enjoyable segment of the newsletter.

Mouthpiece has continued to serve the Society as an informative medium for addressing relevant issues and is now complimented by the introduction of the new ANZSRS website. It is envisaged that future editions of Mouthpiece will be provided electronically via the web, for those members with access.

It has been said on a number of occasions, but is worth reiterating, that the success of Mouthpiece is largely due to your contribution and I congratulate and thank everybody who has contributed over the past year, in whatever format.

As a reminder, Mouthpiece will be published again in March, prior to the ASM. I would like to take this opportunity to remind all those with notices or articles for inclusion in Mouthpiece, to forward these to me (breustb@hotmail.com) before the end of February.

I hope everyone has a safe and happy holiday season!

Belinda Breust, CRFS
Editor

President's Address

(Continued from page 2)

web page and in the next edition of Mouthpiece.

The Ski season will be an added attraction because Christchurch is less than a two-hour drive to many of our ski fields in the Southern Alps. Even a day trip is well worth it. However, unlike Queensland my local knowledge recommends you bring your thermals and thermos but not thongs and sarongs!

Thank you to all members who have continued to offer support and advice on issues throughout the year. On behalf of the Executive, I wish you all best for Christmas and New Year and hope you enjoy a happy and safe holiday season.

Maureen Swanney, CRFS
President

State By State

Victoria

This year has been much quieter than last with both Board Members effectively "out-of-action" for the middle half of the year. The meetings held this year have focussed mainly on projects underway around Victorian labs. It is notable that quite a few are being performed and presented by students and younger members of the profession – and it is always good to see new talent rising through the ranks (not that the old talent is all that bad!). Many thanks to Edward Kellar who have consistently supported us throughout the year.

Peter Rochford (Victorian Board Member)

South Australia

SA has had five well attended meetings this year with several new members being welcomed into our Society. This year's presentations included Infection Control procedures, the measurement of KCO, the Jaeger APS, Histamine Challenge Tests and a report on the SA Inter-Laboratory Quality Control project. I am happy to say that input has been forthcoming from all of the SA laboratories.

The most important outcome of the meetings this year has been in fostering and further strengthening inter-laboratory communication. It is pleasing to note the enthusiasm of the 'junior' members to become involved in the meetings, and the willingness of the more 'senior' members in encouraging their professional development.

Our members seem to enjoy the opportunity to discuss, learn and share their experiences and the increasing attendance and enthusiasm at meetings will attest to this. The change is quite obvious from when I first attended the Branch meetings 7 years ago.

Michelle Rozee (SA Board Member)

New Zealand

Given the geographical logistics and travel/ accommodation costs, the New Zealand Branch of the Society tends to operate usually with one meeting each year. This year our meeting was combined with the TSANZ (NZ Branch) in Auckland, 1 December.

The theme was physiology and the guest speaker was Professor Iven Young from Sydney who gave two interesting and informative presentations on exercise physiology. Other topics included Normal values in NZ, Shuttle or 6-Minute Walking test.

The Early Bird Session was an intense and lively discussion on the Lung Function Accreditation process and requirements. It was acknowledged that the participation of Respiratory Scientists is vital and senior members be available to offer advice and support to laboratories as required. **The importance of certified (CRFS) laboratory staff was stressed.**

Nationally we plan to join forces with the NZ branch of TSANZ to support accreditation initiatives throughout New Zealand. We also plan to hold a joint meeting again next year. with guest speakers Professor John West and Professor Kim Prisk, both from UCSD, San Diego, USA.

Sue Filsell (NZ Board Member)

Queensland

The Queensland Branch of the ANZSRS continued to hold it's meetings on the last Wednesday of every third month. The presentations throughout the year inlcuded, "Connective Tissue Diseases" – Rosemary Hawken, "Respiratory Function in Spinal Injury" – Dr K Tran and "Asthma Update" – Jackie Tonks. In November, ANZSRS members participated in a Laboratory Accreditation workshop as part of the Thoracic Society of Queensland's Annual Scientific Meeting. Members found this workshop particularly useful in their preparations for Accreditation—an issue we should all be focusing on in the near future.

A lot of blood, sweat and tears has gone into the organising of 2001 Conference in Brisbane, with special thanks to Mike Brown for his efforts in his role as chairman of the organising committee. As the ANZSRS Executive is passing to Queensland members next year, the new Executive Elect is grooming itself for the passing of the crown.

Geoff Foote (QLD Board Member)

New South Wales

The NSW Branch has been actively maintaining a high standard of presentations at the seasonal meetings. The last meeting for the year was held at RPAH and was certainly no exception. Discussed were the ramifications of the recent increase in the substrate price for pharmacological bronchial challenge testing. Gary Gazibarich gave a succinct appraisal of projected costs (for example, if ATS recommendations were strictly adhered to, costs could be as high as $AUS270 each!). Sandra Anderson complimented this discussion with a presentation on the alternative, namely osmotic challenges.

We have already made tentative arrangements for next year's meetings. We are fortunate to have a guest speaker from the AIS who will discuss the use of bronchodilators in elite athletes. Other topics to be covered include Lung Transplantation and Reduction surgery. We are all looking forward to a very interesting schedule for 2001.

Peter Rogers (NSW Board Member)

Clinical Contact

"Too Short of Breath to Feed the Donkeys"

A 45 year old woman was referred to the Respiratory Service for an evaluation of her shortness of breath which had increased over the last six months. She reported it was increasingly difficult for her to walk up the hill to her house, she was no longer able to walk her dog and she had to give up feeding her pet donkeys.

Several years earlier a dentist had noticed that this patient was unable to open her mouth widely. She also had tight skin on her hands, feet, and her face particularly around her mouth. She also had calcification over the skin on her fingers and suffered from Raynaud's Phenomenon (very painful cold fingers following exposure to cold air).

These symptoms have led to a diagnosis of Scleroderma. Part of the disease process is that the connective tissue beneath the skin grows and the skin becomes shiny, stiff and inflexible. In some patients the changes to the skin are so severe that they are confined to a wheel chair. The respiratory system can be affected in several ways:

1) The skin around the chest wall may become so tight that chest expansion is reduced.
2) Some patients develop interstitial disease secondary to scleroderma.
3) Other patient's develop pulmonary hypertension.
4) Patients may be troubled by gastro-oesophageal reflux as part of the co-existing scleroderma and oesophageal motility dysfunction causing repeated aspiration pneumonia.

This patient was referred to the respiratory laboratory for diagnostic evaluation. Below are the results of the arterial blood gas analysis and respiratory function tests.

Which of the above four manifestations do you think is the most likely diagnosis?

(See page 9 for our conclusion.)

LUNG FUNCTION RESULTS

Arterial Blood gases

pH:	7.48 units
$PaCO_2$:	22 mmHg
PaO_2:	58 mmHg
HCO_3:	16.2 mmol/L

Spirometry

FEV_1:	2.07 L	(96%)
FVC:	2.81 L	(94%)
FEV_1/FVC:		74%

Lung Volumes

TLC:	4.79	(99%)
RV:	1.91	(102%)
RV/TLC:	40%	
FRC:	3.14	(105%)

Diffusing Capacity

D_LCO:	5.5	(32%)
KCO:	1.41	(37%)

The Application of Non-Biological Methods for the Assessment of Lung Function Equipment at The Alfred Hospital

Following the recent data in *Mouthpiece* looking at the variability of biological controls, we thought it would be useful to describe the non-biological (or physical) methods we use as part of our quality assurance program here at The Alfred Hospital.

There is no doubt that serial measurements of lung function in healthy subjects tells us something about the stability of our equipment and provides some insight into what constitutes a significant change in lung function over time. This is because the definition of a significant change in a subject is the sum of both biological and equipment variability and it is difficult to differentiate between the two.

Thus, biological controls assess reproducibility rather than accuracy whereas non-biological controls can often give a target value that is close to the truth as well as having better intrinsic reproducibility than humans. The down side is that they are generally only an approximation of the biological subject and may not provide comprehensive assessment of equipment function. We have placed a heavy emphasis over the years on the application and, to some extent, the development of non-biological methods to identify, quantify and minimise systematic and random errors.

The Table summarises the coefficient of variation (CV) or absolute range for some of the non-biological methods or devices we routinely use in the laboratory. We assume that variation outside these limits is due to systematic or random changes or differences in hardware or software.

Table. Theoretical range (where applicable), and example of measured mean and coefficient of variation (CV) of non-biological methods used at The Alfred

	Theoretical Range	Measured	
		Mean	CV
3 Litre Calibration Syringe			
Slow VC mode			
VC slow (L)	2.95 - 3.05	3.01	1.0%
VC fast (L)	2.95 - 3.05	3.03	0.9%
Flow Volume mode			
VC slow (L)	2.95 - 3.05	2.98	0.8%
VC fast (L)	2.95 - 3.05	2.99	0.7%
TLCO Syringe Dilution			
Ne_{insp}/Ne_{exp}	-	1.73	2.4%
CO_{insp}/CO_{exp}	-	1.72	2.5%
VC inspired (L)	1.95 - 2.05	2.00	0.8%
EDDE (Resistor #4, 110kPa)			
FEV_1 (L)	-	3.62	1.1%
FVC (L)	-	3.83	1.0%
$FEF_{25-75\%}$ (L/sec)	-	4.36	1.4%
PEF (L/sec)	-	6.54	1.3%
TLCO Validation Device			
TLCO (ml/min/mmHg)	20.6 - 21.4	20.3	1.0%
VA (L)	4.02 - 4.11	4.10	1.0%
Isothermal Lung			
Compressible volume (L)	3.28	3.24	1.2%

The Application of Non-Biological Methods for the Assessment of Lung Function Equipment at The Alfred Hospital

1. **Calibration Syringes (3 litre):** Used to check and calibrate the volume accuracy and linearity of our volume and flow spirometers. Volume spirometers (eg wedge bellows) are assessed over their entire volume range and flow spirometers over a wide range of flows. A permanently modified 3 litre syringe that is set to deliver 2 litres with a 1.00 litre 'residual volume' is used to assess the linearity of our physical gas analysers (eg Ne(He?)) and CO in the TLCO test). We assume that a well cared for 3 litre syringe (with initial accuracy certification) will remain accurate (±0.05 litres) unless a leak develops or the piston becomes sticky or damaged.

2. EDDE: Our explosive decompression device (EDDE) is used routinely to deliver a range of highly reproducible dynamic expiratory waveforms similar to those produced by young healthy subjects and patients with mild, moderate or severe airflow limitation. This device has been very useful for monitoring the long-term precision of volume and flow sensors and to provide data to allow us to quantify intra-instrument variability and systematic differences between our many spirometers. EDDE consists of a rigid isothermal chamber, precision pressure gauge, inlet for compressed air and a solenoid activated outlet. One of five fixed flow restrictors can be screwed into the outlet. The chamber is pressurised to a known pressure and the compressed gas then allowed escape, via one of the flow restrictors, to the spirometer. The FEV_1, FVC and $FEF_{25-75\%}$ are highly reproducible (see Table) and have remained virtually unchanged over the past 22 years. Altering the diameter of the flow restrictor affects the degree of airflow obstruction (ie FEV_1/FVC) and altering the chamber pressure affects the delivered volume.

…"biological controls assess reproducibility rather than accuracy whereas non-biological controls can often give a target value that is close to the truth as well as having better intrinsic reproducibility than humans."

3. TLCO Validator: Early last year we commissioned new clinical lung function testing systems (MedGraphics). We noted that the new equipment gave slightly lower values for single breath TLCO for our biological controls and also for those patients we test regularly. This disquieting observation drove us to develop a TLCO validation device that would allow us to produce known values for TLCO (and VA) and thus enable us to determine the absolute accuracy of our new TLCO systems. The device simply consists of a 3 litre syringe, 3-way tap and two gravimetric gas mixtures – one containing typical inspired concentrations of Ne {He?}and CO and the other containing accurately known alveolar values for these gases. The results provided convincing evidence that our new TLCO equipment gave values which were accurate, albeit at the lower end of the theoretical accuracy range.

4. Isothermal Lung: We have three isothermal lungs covering a range of compressible volumes: 2.25, 3.23 and 5.61 litres. These isothermal lungs are used to assess the accuracy of FRC (ie TGV) measurements made in our two constant volume plethysmographs. (Several years ago we constructed an infra-red controlled, stepper motor driven, 10 litre syringe. The FRC, RV and TLC of the syringe could be set remotely whilst the syringe was inside the plethysmograph by using the infra-red controller. However, the device did not prove sufficiently accurate due to adiabatic effects as

The Application of Non-Biological Methods for the Assessment of Lung Function Equipment at The Alfred Hospital

we were unable to include an effective heat sink within the variable compressible volume as can easily be done with a fixed volume isothermal lung. (Any suggestions would be welcome).

5. Lithium Choride Tracer: We routinely apply our LiCl tracer technique to determine the true aerosol output of our jet nebulisers used to deliver methacholine chloride. This allows us to accurately determine the PD_{20} using our dosimeters. Typically, only about 55% of the total weight loss from a jet nebuliser is due to aerosol with the remainder due to evaporation thus one can significantly overestimate PD_{20} if mass output, as calculated from weight loss, is used.

6. Others: Stopwatch, barometer, accurate weighing balance, water manometer, thermometer, blood gas controls, chemical analyser (Haldane).

Occasionally Used:

1. **Flow Calibrator:** This is a very low resistance, gas dilution technique to accurately measure steady gas flows.

2. Gas Exchange Device: Mechanical method for producing accurately known values for VO_2, VCO_2, VT, minute ventilation and breathing frequency.

3. Precision Dilution of Gas Mixtures: This technique utilises a series of entrainment devices (Venturi's) which can very precisely dilute a pure gas or mixtures with room air to produce reproducible gas dilutions.

4. Pulmonary Waveform Generator: A computer controlled, stepper motor driven, 12 litre sliding seal spirometer capable of producing the 24 ATS expiratory waveforms (and more).

Although we actively use non-biological controls to ensure that the accuracy and precision of our measurements and methodologies are within acceptable limits we still use biological controls. However, over the years we have moved somewhat closer towards less reliance on human subjects for detecting errors and failures and, we can certainly see the day when there will be physical methods available to comprehensively assess the accuracy and precision of the complete lung function testing system.

Dr David P. Johns, Head of Physiological Services
Ms Brigitte Borg, Senior Respiratory Scientist
The Alfred Hospital and Monash University Medical School

Congratulations

to

Brenton Eckert

who was successful in the recent CRFS examination.

"Too Short of Breath to Feed the Donkeys"

(Continued from page 5)

The most likely explanation is pulmonary hypertension secondary to limited variant scleroderma.

The arterial blood gas is clearly abnormal. While the patient is adequately ventilated she is significantly hypoxic. The A-a gradient is 70 mmHg. This is in keeping with her history of increasing shortness of breath.

Spirometry and lung volume data are within normal limits, which makes interstitial and restrictive lung disease secondary to skin thickening around the thoracic cage unlikely.

This patient's diffusing capacity is significantly reduced. The most likely explanation for the decreased diffusion in this patient is a reduction in contact of the carbon monoxide with haemoglobin in the red blood cells. In pulmonary hypertension blood vessels tend to hypertrophy and the vessel walls become thicker. The pulmonary vascular bed reduces and the pressure within the large pulmonary arteries increases.

In summary the patient has developed pulmonary hypertension secondary to the limited variance scleroderma. This was confirmed with pressure studies during angiography. Her right sided pressures were 85/25 systolic (mean 43). It is an important diagnosis to make since most patients with pulmonary hypertension die within two years of their diagnosis. The mainstream of treatment is currently based on warfarin and vasodilator therapy, but treatment options using prostacycline and prostacycline derivatives are becoming available.

Maureen Swanney (Respiratory Scientist)
Fiona McClymont (Respiratory Scientist)
Dr Lutz Beckert (Respiratory Physician)
Respiratory Physiology Laboratory
Christchurch Hospital, NZ.

NOTICE OF MEETINGS

The **Annual General Meeting** of the Australian and New Zealand Society of Respiratory Science will be held on Saturday March 17, 2001 at 4pm in the Brisbane Convention Centre.

Any items for the agenda should be forwarded to the Secretary by 1 March, 2001. Any late items will be considered under general Business.

The **Board Meeting** of the Australian and New Zealand Society of Respiratory Science will be held on Friday March 16, 2001 at 2pm in Rydges Hotel, Southbank.

Any items that members wish to put before the Board should be sent to the Secretary by 1 March, 2001.

Kevin R Gain, PhD
Secretary
21 November, 2000

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Profiler

Sandra Anderson

Sandra graduated from the University of Sydney in 1962 with a Bachelor of Science with majors in Physiology and Microbiology. Her first job, one of a few in human physiology at that time, was at the new Clinical School of Medicine at Prince Henry Hospital working in cardiac catheterisation. Her interest in respiratory physiology stems from measurements made in the polio unit of Prince Henry Hospital where there was a change from ventilating patients in iron lungs to intermittent positive pressure ventilators. It was in 1963, when she traveled to San Francisco, that she fulfilled her desire to be trained as a respiratory physiologist while working under the direction of Professor Julius Comroe.

In 1966, Sandra returned to Sydney to work in the Department of Thoracic Medicine at RPAH where she set up the laboratory to measure lung volumes and diffusing capacity in addition to blood gas analysis and spirometry. At that time there were no opportunities for research, so at the end of 1968, Sandra left Australia to pursue her interests in travel and research. By the end of 1969, she was in London beginning what was to be a lifelong career in asthma research. Sandra worked towards her PhD, in the Department of Paediatrics, Institute of Chest Diseases of the University of London, being involved in a series of critical studies investigating the factors determining the severity of exercise induced asthma (EIA). Her work established the first diagnostic test for EIA, which is still valid.

In 1973 she returned to Sydney to run the respiratory laboratory at RPAH. Sandra then established a research laboratory and by the end of 1975, sheproved the superiority of aerosol over oral delivery of drugs in preventing EIA. As a result of her work, the pharmaceutical companies focused on the use of aerosols for preventing asthma attacks. In 1978 Sandra was invited, by the American Academy of Allergy and Clinical Immunology, to serve on the Committee on Bronchial Provocation, which was responsible for publishing the 1979 Guidelines for the Methodology of Exercise Challenge Testing of Asthmatics.

Since 1980, Sandra has focused on the mechanism of EIA. In 1981 she was the first to show that the inhalation of an aerosol of salt caused the airways to narrow in asthmatic individuals. From these experiments and others involving exercise with dry or humid air, either cool or hot, she confirmed that water loss from the airways, and resultant hyperosmolarity, was the important factor in causing the airways to narrow. In 1984 Sandra proposed that "the evaporative water loss during hyperpnea as a result of humidifying large volumes of inspired air resulted in dehydration of the airway surface fluid and subsequently in a transient increase in the ion concentration". The osmotic hypothesis dismissed the exercise *per se* as necessary for the asthmatic airways to narrow. She then developed the isocapnic hyperventilation challenge, which allowed people to dry their airways to a greater extent than with exercise and thus increased the specificity of the test. The similarity in the responses of hyperpnoea with dry air and "water loss" by an osmotic challenge led Sandra to develop the hypertonic saline challenge (4.5% saline) as a diagnostic test for asthma, which has been adopted throughout the world.

Sandra has since discovered that a dry preparation of mannitol, a non-ionic sugar, has all the characteristics that make it suitable for encapsulation and can be used, instead of salt, to provoke asthma. Sandra, together with the Central Sydney Area Health Service has patented mannitol for its use as a diagnostic agent.

In 1990 Sandra was awarded the Doctorate of Science (Medicine) from the University of London in recognition of her achievements in developing our understanding of asthma. She has been the Principal Scientific Officer at RPAH since 1979 and since then has had numerous research grants, six PhD students and has very close to 200 publications. In 1990 she received the Fisons Medal, and in 1994 the Royal Prince Alfred Achievement Award for her outstanding contributions to research. In 2000 she became the First Fellow of the ANZSRS for her outstanding contributions to the Society, and to Respiratory Science in general.

With her exceptional personal qualities and undoubted scientific skill she has also made enormous contributions to those who have had the good fortune to work with her. Her enthusiasm for science and knowledge has been such that she has encouraged everybody who had the potential to develop and take knowledge further. She still continues to do so. Sandra has been a mentor and a close friend and I feel very privileged to have been able to work with her for the last 25 years.

Evangelia Daviskas, MBiomedE PhD
Senior Research Scientist
Royal Prince Alfred Hospital,
Sydney, NSW

Call for nominations for SOCIETY FELLOWSHIPS and LIFE MEMBERS

Nominations are called for ***Society Fellowships*** for award at the 2001 Annual Scientific Meeting. The Fellowship is to be awarded to members who have made a significant scientific contribution to the Society and in advancing the state of knowledge in the field of Respiratory Science.

Nominations are called for the award of ***Life Membership*** status to be granted at the 2001 Annual Scientific Meeting. The Life Membership award is for the recognition of long term service to the Society.

All nominations will be forwarded to the Executive by 1st February, 2001 and the decision to make either or any award will be taken by the Board at their meeting on 16 March 2001. Any nomination should be accompanied by supporting documents upon which a justification should be built. The member making the nomination will have the opportunity to speak to their nomination at the Board meeting if they so desire. There is no expectation that a Fellowship / Life membership will be awarded each year and nomination does not necessarily mean an award will be made.

Kevin R Gain, PhD
Secretary
21 November, 2000

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Reminder!

Next years Annual Scientific Meeting will be held in Brisbane, *March 16 to March 18, 2001*.
Closing date for abstracts is *December 15*.
For further information check the webpage or contact Annette Dent, The Prince Charles Hospital on 07 3350 8302 or Annette_Dent@health.qld.gov.au

The Australian and New Zealand Society of Respiratory

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CRFS Examination

The next CRFS examination will be held on ***May 19, 2001.*** Applications for this sitting close April 7. Particularly the more senior members of the Society are encouraged to sit the exam.

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

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