



Australian Acoustical Society

A.C.N. 000 712 658

NEW SOUTH WALES DIVISION

TECHNICAL MEETING

The Complexity of Musical Instruments – Two Short Talks

Date: Thursday 27 February 2014

Venue: Room G25, Electrical Engineering Building, UNSW, Kensington
(location 'G17' on attached campus map)

Time: 6:00 pm (drinks and nibbles), for 6:30 start

Speakers: André Almeida, Associate Professor at Université du Maine, Le Mans, France
Joe Wolfe, Professor of Physics, UNSW

Reed instruments - how cane and pipes can make music

Musical instruments are both simple and complex systems: their functioning is based on the assembly of at least two elements, an exciter and a resonator. The individual phenomena at play in each of these elements can be described with simple physics, but the behaviour arising from their combined action is remarkably rich and complex. This complexity is increased when we take into account the action of the musician on its instrument.

In the first of our talks for 2014, André Almeida, an Associate Professor at Université du Maine, Le Mans, France, will quickly describe a basic model to explain the functioning of a reed instrument such as a clarinet or a saxophone. André will explain how this model can be used to predict such things as the playing frequency or the ranges of blowing pressure and lip force that can produce a sound.

The voice - why and how is it so unlike musical instruments?

The voice has similarities with instruments, especially brass instruments: in both cases, two strips of muscular tissue lie between two resonant ducts and oscillate in at least a couple of different vibrational modes so as to convert DC power from the lungs into sound. In brass instruments, however, one of these ducts controls or at least quantises the frequency, whereas in the voice it controls the phoneme or speech sound.

Joe Wolfe is a professor of physics at UNSW. With colleague John Smith he set up an acoustics lab about 15 years ago to investigate the voice and musical instruments. Joe will present this second short talk, giving a very quick introduction to voice science and some of the work in the acoustics lab.

AAS members (and guests) are welcome to attend.

Refreshments will be provided.

RSVP FOR CATERING PURPOSES BY

Monday 24th February to Tracy Gowen by email tgowen@renzotonin.con.au

Kensington Campus Map



Buildings	Mathews	F23	UNSW Fare (Mathews Arcade)	E24a	Theatres	Science Theatre	F13	IT Service Desk	F21	Student Recruitment Office	F20
223 Anzac Parade	L5	J17	Barker Apartments	N13	AGSM Theatres	G27	Kingsford Legal Centre	F8	F8	Squash Courts	B7
AGSM	G27	D7	Creston College	A25	Allens Arthur Robinson	F8	The Learning & Teaching Unit @unsw	F23	F23	Swimming Pool	B4
Australian School of Business	E12	J12	Goldstein Dining Hall	D16	Biomedical Theatres	E27	Library	F21	F21	The Learning Centre	C22
Biological Sciences	D26	D2	International House	C6	Central Lecture Block	E19	Lifestyle Clinic	G6	C22	University Health Services	E15
Blockhouse	G6	K15	New College	L6	Chemical Sciences Theatres	F10	Marketing Development	E15	C22	UNSW Bookshop	E15
Building D10	D10	E24	New College Postgrad. Village	H3	Civil Engineering (Room G1)	H20	New South Innovations	E15	M15	UNSW Sports & Recreation	B5
Chancellery	C22	H13	Phillip Baxter College	D14	Clancy Auditorium	C24	Nura Gili - Balnaves Place	E4	G17	UNSW International Student Centre	H13
Chemical Sciences	F10	G14	Shalom College	N9	Fig Tree Theatre	B14d	Optometry Clinic	E15	M15	UNSW Scholarships	F21
Civil Engineering	H20	E6	Warrane College	M7	Gonski Levy Theatre	F8	Physiotherapy Clinic	F21	M15	UNSW Student Central	C22
Computer Science	K17	M15	UNSW Village	B10	IO Myers Studio	E15	Post Office	E15	B5	Venues and Events	F23
Dalton	F12	H8	University Terraces	B8	Keith Burrows Theatre	D23	Print Post Plus (P3) - Printing Services	F20	F23	Childcare Centres	
Dangerous Goods Store	F17A	F25	Faculty Offices		Law Theatres	G14		F23		Kangas House 52 Barker St	O14
Electrical Engineering	G17	G23	Arts and Social Sciences	C20	Macauley Theatre	K15		L5		House at Pooh Corner	N8
Golf House 38 Botany Street	A27	E4	Australian School of Business	E12	Mathews Theatres	E2		F8		Tigger's Honeypot 22 Botany St	BS22
John Goodsell	F20	H6	Built Environment	H13	New South Global Theatre	K14		M15		Owl's House 9 Kennedy St	KS9
John Niland Scientia	G19	H22	Engineering	K17	Old Main Theatres (112)	H13		C22			
Law	F8	C27	Law	F8	Parade Theatres	F17		L5			
Library	F21	J18	Medicine	G27	Physic Theatre	G19		F8			
Lowy Cancer Research Centre	C25	H1	Science	F12	Red Centre Theatre	M15		M15			
Materials Science	E8				Rex Vowels Theatre	G15		L5			