

Summary of Kick-off Teleconference For The ARC Research Network for Adaptive Optics

Peter McGregor (ANU)

12-JUN-03

Attendance

The following people responded to the initial email. Unfortunately, not all participated in the first telecon due to technical limitations of the ANU phone system. Others were contacted by phone after the first telecon, and some others will have to be contacted individually. Some people were unavailable. A current list of potential Network members is maintained at

<http://www.mso.anu.edu.au/~peter/rnao/contacts>.

1	Ross Ashman	UMelb		Ophthalmology
2	David Atchison	QUT	(07) 3864 5711	Ophthalmology
3	Judith Dawes	Macq	(02) 9850 8903	Laser micro-machining
4	Michael Withford	Macq	"	"
5	Matt Doolan	ANU	(02) 6125 8046	Astronomy
6	Don Fraser	ADFA	(02) 6268 8685	Image processing
7	Andrew Lambert	ADFA	"	"
8	Trevor Lamb	ANU	(02) 6125 8929	Vision
9	Barry Luther-Davies	ANU	(02) 6125 4255	Laser physics
10	Peter McGregor	ANU	(02) 6125 8033	Astronomy
11	Jesper Munch	UAdel	(08) 8303 3526	Ophthalmology/LIDAR
12	Thu-Lan Kelly	UAdel	"	"
13	Peter Veitch	UAdel	"	"
14	John O'Byrne	USyd	(02) 9351 3184	Astronomy
15	Brett Paterson	UWA	(08) 9381 0712	Ophthalmology
16	Fred Reinholz	UWA		"
17	Penny Sackett	ANU	(02) 6125 0266	Astronomy
18	Craig Smith	EOS	(02) 6298 8013	Telescope systems
19	Linda Stals	ANU	(02) 6125 3966	Sparse matrices
20	John Storey	UNSW	(02) 9385 4566	Astronomy

Research Areas

- Astronomy
- Ophthalmology
- Laser micro-machining
- Laser telemetry (DSTO?)
- LIDAR
- Directed energy weapons

Who Else Should Be Involved?

- Jesper Munch to contact DSTO people. Peter McGregor has emailed the Assistant Secretary for Defence asking who in DSTO is involved in adaptive optics work. This is being passed down.
- Peter McGregor to contact Roger Netterfield at CSIRO, Lindfield.
- Peter McGregor to contact Andrew Klekociuk and John Innis at the Australian Antarctic Division who operate a LIDAR in the Antarctic.
- Peter McGregor to contact Richard Lane and Peter Cottrell (Canterbury), Tom Barnes (Auckland), and Andrew Bainsbridge-Smith in New Zealand.
- Several people might be contacted as International Associates through astronomy links to Gemini Obs., CfAO (Santa Cruz), CAAO (Tucson), HIA (Canada), Durham (UK), and ESO (Europe).

Roles of a Research Network for Adaptive Optics

National AO Technology Inventory

Create and inventory of AO infrastructure, devices, and expertise available within Australia. This will establish what resources are at our disposal.

National Strategic Plan for AO Development

What are our long term research/technology goals?

[The astronomers want to develop AO systems for the next generation of Extremely Large Telescopes.]

[What do the ophthalmologists want?]

[Is a goal to implement AO on laser micro-machining systems?]

National Implementation Plan for AO Development

How will the Network help us achieve our strategic goals.

[Some astronomers want to implement an AO test bed on the ANU 2.3 m telescope at Siding Spring Obs. Others are interested in AO on telescopes in the Antarctic.]

[How will the ophthalmologists achieve their goals?]

Commercialization of AO by Industry

What product applications exist for our research?

What is the market?

What existing Australian industry might take up these products?

1. Electro Optic Systems
2. Solar Optical (Adelaide)?
3. Boeing, Texas Instruments, Rockwell? Perhaps using tax offsets?

How do we interest new industries in this area?

1. Possible sponsor information workshops for Australian industry reps.
2. Develop technology demonstrations for industry.
3. Develop case studies of industry experience overseas.

Maintain Industrial Associates register?

Employ Marketing Officer to liaise with industry and alert Network members to funding opportunities?
Could this lead to a Cooperative Research Center for Adaptive Optics?

Stimulate Collaborative Research Within The Network

“AO in Australia” Workshop

Annual domestic workshop with international visitors (Brent Ellerbroeck [NIO-NOAO], Francois Rigaut [Gemini], Francois Roddier, Roberto Ragazzoni, Richard Myers [Durham], Gordon Love [Durham]?).

Aim to host next “AO in Industry and Medicine” conference in 2005?

Network Travel Grants

Fund short-term visits by Network members to other Network centers.

Fund extended (1-3 month) exchanges of post-docs between Network centers.

Fund extended (3 month) visits by jointly supervised PhD students.

Network Web Page

We have to do this for the ARC so we might as well make it useful to us at the same time!

Network Email Exploder

This would be a forum for asking AO-related technology queries, e.g., “Has anybody use a **** for this?”. This would be cheap to implement and can happen straight away.

Establish International Linkages

- Center for Adaptive Optics, Santa Cruz
- Center for Astronomical Adaptive Optics
- Palomar AO program
- Jet Propulsion Lab
- Rochester
- Herzberg Institute, Canada
- Durham
- European Southern Observatory

Increase AO Awareness

“AO in Science and Technology” Summer School

This would be an undergraduate lecture series on AO given by an international invited speaker, perhaps Claire Max who has similar lectures on the CfAO web page. This would be similar to the CfAO Summer School and initiatives by Durham/Imperial College. The Network would have to fund the speaker’s expenses, student travel and accommodation costs, and venue costs.

AO Exhibits in Science Museums

The proposal was to work with science museums such as the Powerhouse Museum in Sydney or Questacon in Canberra to create a robust AO exhibit that would introduce AO to school kids. The advantage is that then we do not have to deal with school children. The disadvantage is that it could be expensive and we would probably be expected to fix it when it breaks! Does this address an ARC selection criterion?

How to proceed?

The interest in this Research Network is sufficient to justify applying for seed funding of \$50K to prepare a full proposal. If we are successful, we should spend the \$50K in bringing everyone together in a workshop to address the “strategic plan” issues raised above and work through the full proposal.

For the moment, I would like everyone to send me (peter@mso.anu.edu.au) a one page summary of the current AO research, a description of the broad directions they wish to go in the future, and a list of the staff currently working with them. Please list who already has an ARC grant. Time is short. **Please get this to me by Friday June 20 at the latest.** I will use these to make a first draft of the seed funding proposal and circulate it via email/www.

Please also comment on the approaches described above.