

# SIAM Applied Linear Algebra

## lain Duff

#### STFC Rutherford Appleton Laboratory and CERFACS

Twelfth SIAM Conference on Applied Linear Algebra. Atlanta, Georgia, USA. 26-30 October 2015

## A reminisce about the start of the SIAG and the Conference series.

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Audience participation

## Scottish accent

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Start with google search on linear algebra

First item (at least on my google) is an article starting: Linear algebra describes things in two dimensions .... First item (at least on my google) is an article starting: Linear algebra describes things in two dimensions .... and then comes Wikipedia ... First item (at least on my google) is an article starting:

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Numerical linear algebra is the study of algorithms for performing linear algebra computations, most notably matrix operations, on computers. It is often a fundamental part of engineering and computational science problems, such as image and signal processing, telecommunication, computational finance, materials science simulations, structural biology, data mining, .... A google search on applied linear algebra has a bizarre jumble at the top of the page but does have this conference as fourth in the list.

So on to the origins of the SIAG on Linear Algebra and conference series on Applied Linear Algebra.

# Applied or not

## Applied or not

SIAG-LA

http://siags.siam.org/siagla/meetings/siamla.html

SIAG-LA	<u>Sixth SIAM Conference on Linear Algebra</u>
Home	Snowbird, Utah, October 29-November 1, 1997. Organized by SIAG/LA.
About	
Conferences	Fifth SIAM Conference on Linear Algebra
Papers	Snowbird, Utah, June 15-19, 1994.
Jobs	Organized by SIAG/LA.
Newsletter	Fourth SIAM Conference on Linear Algebra
Prizes	5
Related	Minneapolis, Minnesota, September 11-14, 1991. Organized by SIAG/LA.

#### Third SIAM Conference on Linear Algebra

Madison, WI, May 23-26, 1988. Organized by SIAG/LA.



# The gang of three

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## Key person

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## Justification for Linear Algebra

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Results of an Informal Survey on the Use of Linear Algebra in Industry and Government Stephen L. Campbell, Carl D. Meyer, Jr., and Nicholas J. Rose Linear Algebra and its Applications **38**, 289-294. 1981

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Contributors to survey were:

lain Duff. RAL, CERFACS

SIAM Applied Linear Algebra 2015, Atlanta, Georgia. October 28 2015.

- Paul Boggs, US Army
- Allen V Butterworth, GM
- Jane Cullum, IBM
- Albert M Erisman, Boeing
- Louis A Hageman, Westinghouse
- Linda Kaufman and James McKenna, Bell Labs
- Donald W Marquadt, du Pont
- Major Carl Edward Oliver, AFOSR
- James C T Pool, DOE
- Herbert E Rauch, Lockheed
- ▶ W J Schaffers, du Pont
- Melvin R Scott, Sandia
- Leon H Seitelman, Pratt & Whitney
- Paul Swarztrauber, NCAR
- Robert C Ward, Oak Ridge
- Albert C Williams, Mobil Oil



### Wikipedia entry

Sir Walter Raleigh was an English landed gentleman, writer, poet, soldier, politician, courtier, spy, and explorer. He was cousin to Sir Richard Grenville and younger half-brother of Sir Humphrey Gilbert

- Born: East Budleigh
- Died: October 29, 1618, London
- Spouse: Elizabeth Raleigh (m. 15911618)
- Children: Carew Raleigh, Damerei Raleigh, Walter Raleigh
- Siblings: Humphrey Gilbert, Carew Raleigh, John Gilbert, Adrian Gilbert

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John William Strutt



## John William Strutt Lord (3rd Baron) Rayleigh

#### Not to be confused with ...

SIAG-LA

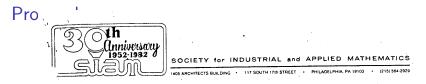
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Madison, WI, May 23-26, 1988. Organized by SIAG/LA.

#### Second SIAM Conference on Linear Algebra

Rayleigh, North Carolina, April 29-May 2, 1985. Organized by SIAG/LA. SIAM Applied Linear Algebra 2015, Atlanta, Georgia. October 28 2015.



#### PROPOSAL FOR A CONFERENCE ON APPLIED LINEAR ALGEBRA

This is a proposal by the Society for Industrial and Applied Mathematics to conduct a conference on applied linear algebra.

The conference is scheduled to take place in Raleigh, North Carolina on April 26-29, 1982.

Purposes of the conference are to examine the newer developments of linear algebra in respect to their applications and to delineate some of the needs of the future as perceived by scientists who contribute to and make use of linear algebra in their research.

The conference is to bring together mathematical scientists from industry and government with those of the academic community who are concerned with problems relating to the applied aspects of linear algebra in addition to those who are involved with the more theoretical facets of the subject.

The conference will focus on five major applied areas:

- Numerical analysis and computational methods.
- o Combinatorics, graph theory, and discrete methods.
- Statistical methods.

Operations research and optimization.

o Engineering, control theory, and systems theory.

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and in case you were wondering ....

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- Combinatorics, graph theory, and discrete methods
- Statistical methods
- Operations research and optimization
- Engineering, control theory, and systems theory

and in case you were wondering ....

In addition, to update the applied researchers in attendance on promising new developments in linear algebra, there will also be specific focus on:

- Numerical analysis and computational methods
- Combinatorics, graph theory, and discrete methods
- Statistical methods
- Operations research and optimization
- Engineering, control theory, and systems theory

and in case you were wondering ....

In addition, to update the applied researchers in attendance on promising new developments in linear algebra, there will also be specific focus on:

Core linear algebra

# No themes for 2015 but guided by invited talks and titles of invited minisymposia

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- Complex Networks
- Finding and Exploiting Structure in Data
- Linear Algebra for PDE-constrained Optimization
- Matrix Equations and Matrix Geometric Means
- Numerical Methods for Markov Chains and Stochastic Models
- Preconditioning and Iterative Methods for Complex Linear Systems

#### Conference committee for SIAM ALA 1982

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- Gene H. Golub
- Carl D Meyer Jr. (chairman)
- Robert J Plemmons
- Hans Schneider

### Advisory group for SIAM ALA 1982

- R A Brualdi
- R W Cottle
- C Davis
- M Fiedler
- M D Marcus
- D J Rose
- J Stoer
- R C Thompson
- R S Varga
- R C Ward

MEETING:	SIAM Special Conference on Applied Linear Algebra		
DATES AND LOCATION:	Monday-Thursday, April 26-29, 1982, Mission Valley Inn, Raleigh, NC		
PROGRAM COMMITTEE:	Gene Golub, Carl D. Meyer (Chairman), Robert J. Pleamons, and Hans Schneider		
PRINCIPAL SPEAKERS:	R.C. Thompson G.H. Golub R.E. Tarjan	C.R. Rao A.F. Veinott, Jr. T. Kailath R.S. Varga	
SELECTED SPEAKERS;	J.R. Gilbert E.H. Barciss D. Carlson E. Marques de Sa P. Deift E. Deutsch H. Schneider R.E. Funderlic	D.M. Gay W.B. Gragg J.R. Lundgren C.R. Johnson D.P. O'Leary J-S. Pang U.G. Rothblum G.C. Verghese	
SOCIAL EVENTS;	Buffet Supper - Tuesday	y, April 27	
CONTRIBUTED PAPERS:	119 contributed; 17 pc	osters	
REGISTRATION: 345 (regular members 192; students 12; comps. 23; (non-member regular 88; students 14; comps. 16)			
FINANCIAL SUMMARY:	INCOME-REGISTRATIC	21	
Non Non	ber \$55. (150) -Member 65. (73) -Member 80. (2) dents 15. (11)	\$ 8,250, 4,745, 160, 165, \$13,32,0,00	

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#### Budget for SIAM ALA 1982

Year	Budget	Income from	registrations
		Estimated	Actual
1982	28,587	6,125	17,315

#### Perspective on budget

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1982			
Adjusted	71,467	15,312	43,287

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Registration fee for 1982 conference

SIAM members \$55 Highest rate \$80 Registration fee for 1982 conference

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At 2015 adjusted rates:

Registration fee for 1982 conference

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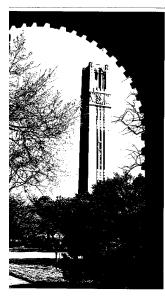
At 2015 adjusted rates:

\$140 and \$200

Conference exceeded all expectations and the SIAG on Linear Algebra was formally established as the first SIAM SIAG on July 19th 1982.

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Carl Meyer says he was an officer and that the first chair was John Lewis.



#### **Final Program**

#### Second SIAM Conference on Applied Linear Algebra

#### April 29–May 2, 1985 Mission Valley Inn Raleigh, North Carolina

- Core Linear Algebra
- Industrial Applications
- Computer Demonstrations
- Numerical Methods
- Parallelism
- Matrix Methods in Partial Differential Equations
- Perturbation Theory of Operators
- Matrix Polynomials
- Applications of Linear Algebra in Discrete Mathematics, Statistics, Population Biology, Engineering, and Control and Systems Theory



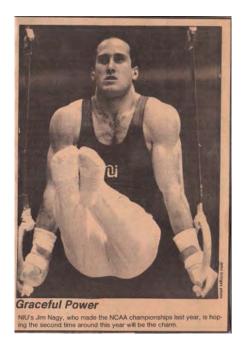
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### 1982



### 1982



## THANK YOU FOR YOUR ATTENTION

Back to the coffee and whisk(e)y ?

### and Happy Halloween when it comes

