Volvo Aero Corporation Presentation

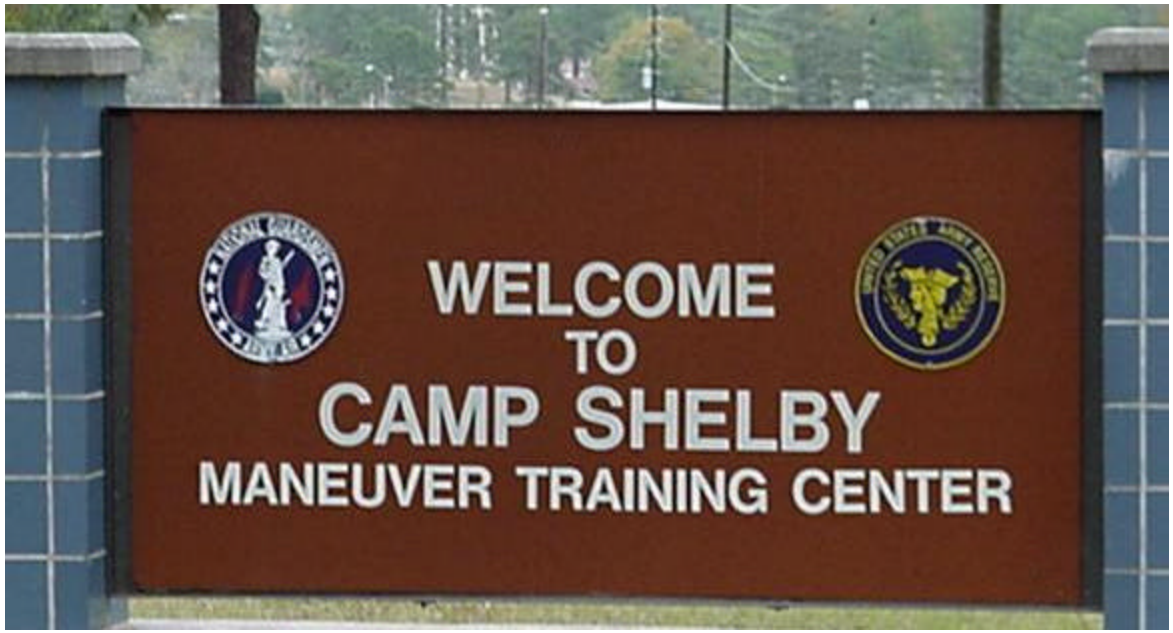
by

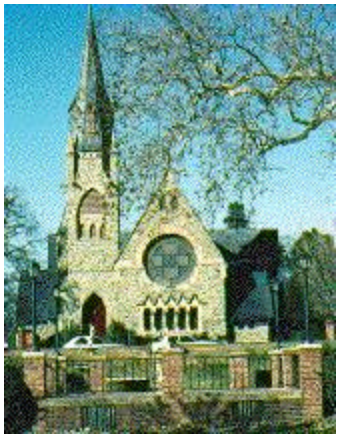
William K. George
Professor of Turbulence

Who am I?

William K. George (Jr)

Private Billy George; born 19 April 1945
Camp Shelby, Miss., USA







Cambridge, Maryland

High School, 1963





JOHNS HOPKINS
UNIVERSITY



1967 B.E.S., Engineering Physics

1971 Ph.D, Mechanics

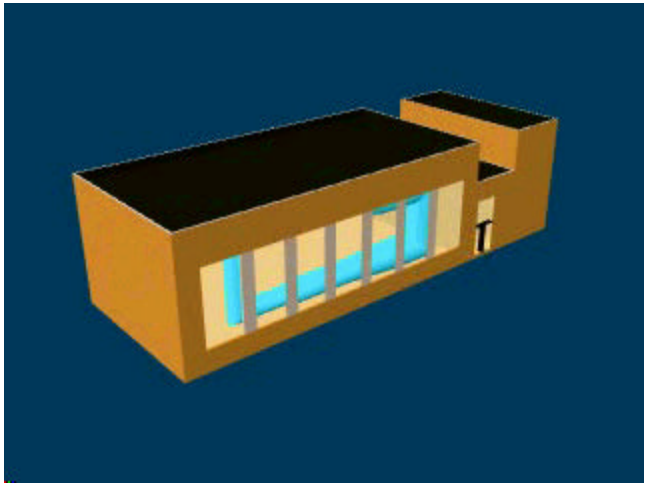
Ph. D. dissertation: The Laser Doppler Velocimeter and Its Application to the Measurement of Turbulence''

Ph. D. supervisor: John L. Lumley

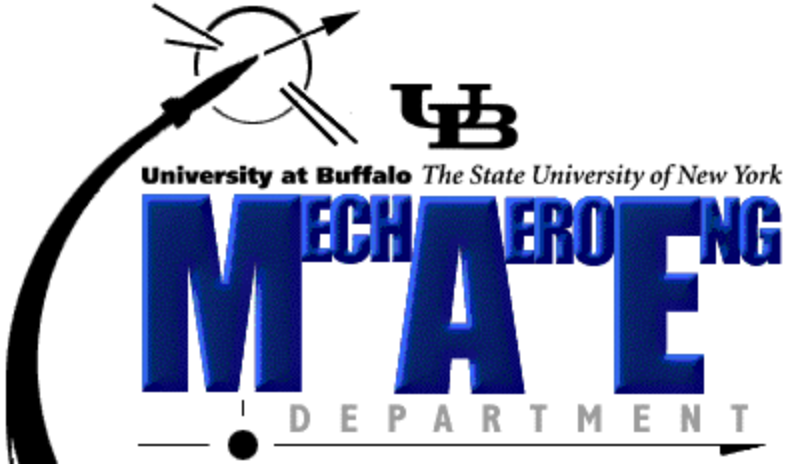


1968 - 1971 Instructor in Aerospace Engr.,
Penn. State U.

1971 - 1974 Research Associate,
Applied Res. Lab.
Penn. State U.



48 inch Water Tunnel



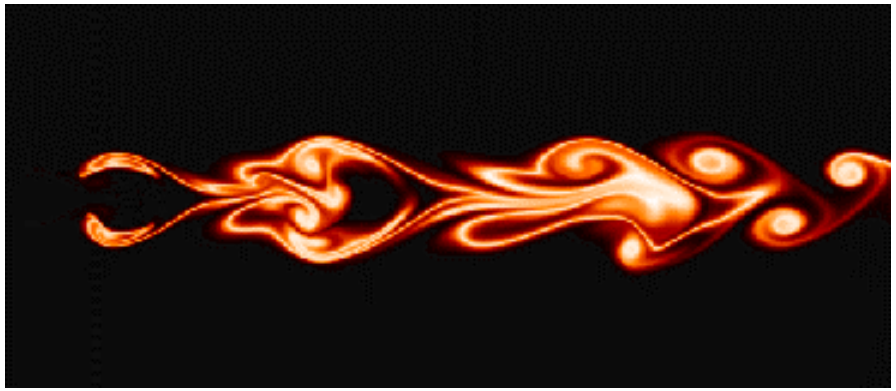
1974 - 1977 Assistant Professor

1977 - 1980 Associate Professor

1980 - 2000 Professor

University at Buffalo The State University of New York

http://www.eng.buffalo.edu/Research/TRL



TURBULENCE RESEARCH LABORATORY

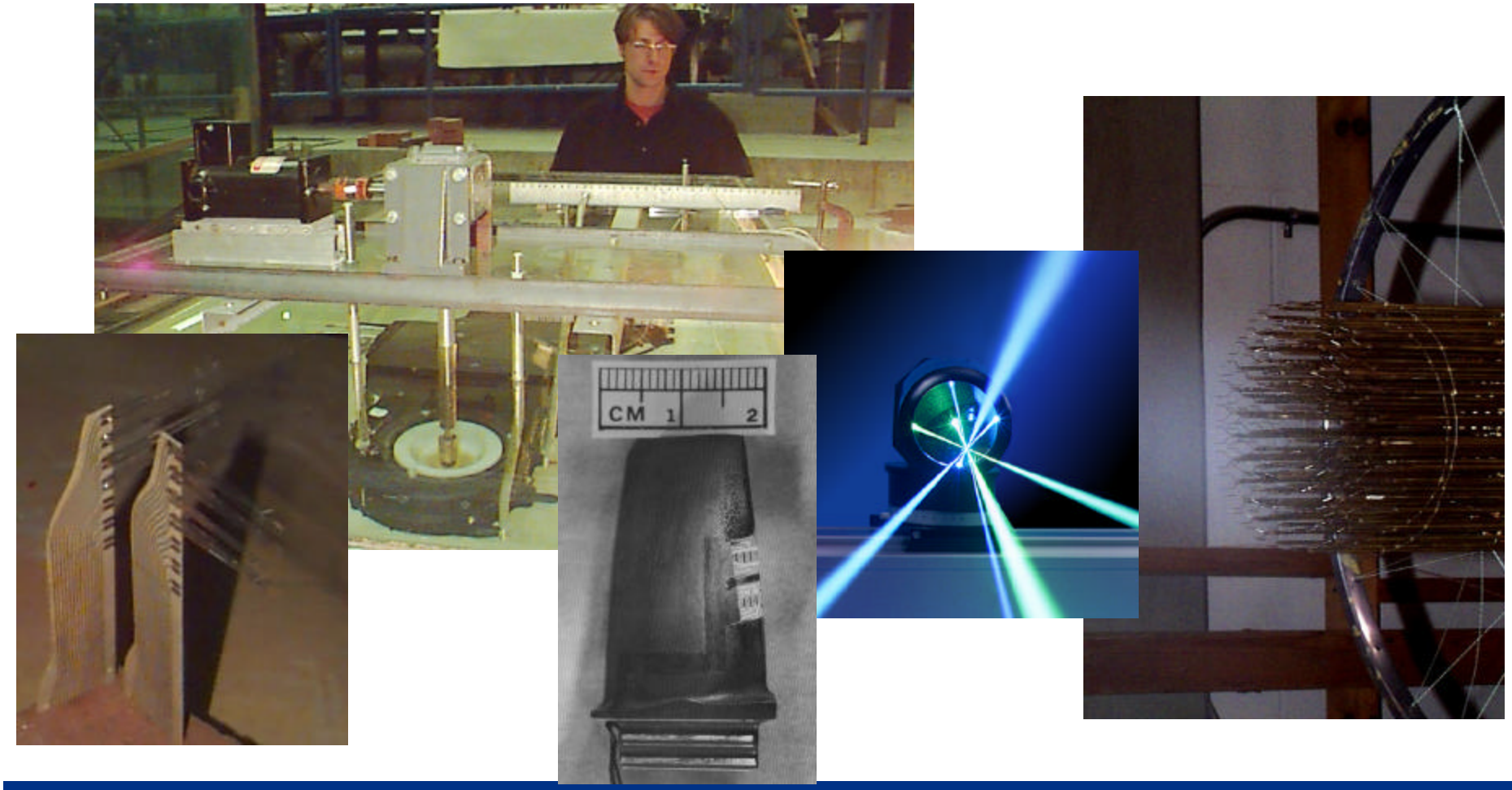
State University of New York at Buffalo
321 Jarvis Hall

Department of Mechanical and Aerospace Engineering

Overview

Turbulence is that state of fluid motion which is characterized by random and chaotic motions. When present, it usually dominates all other flow phenomena including mixing, heat transfer, and drag. The lack of a satisfactory understanding of turbulence presents one of the great remaining fundamental challenges to scientists - and to engineers as well - since most technologically important flows are turbulent.

The right tool for each problem

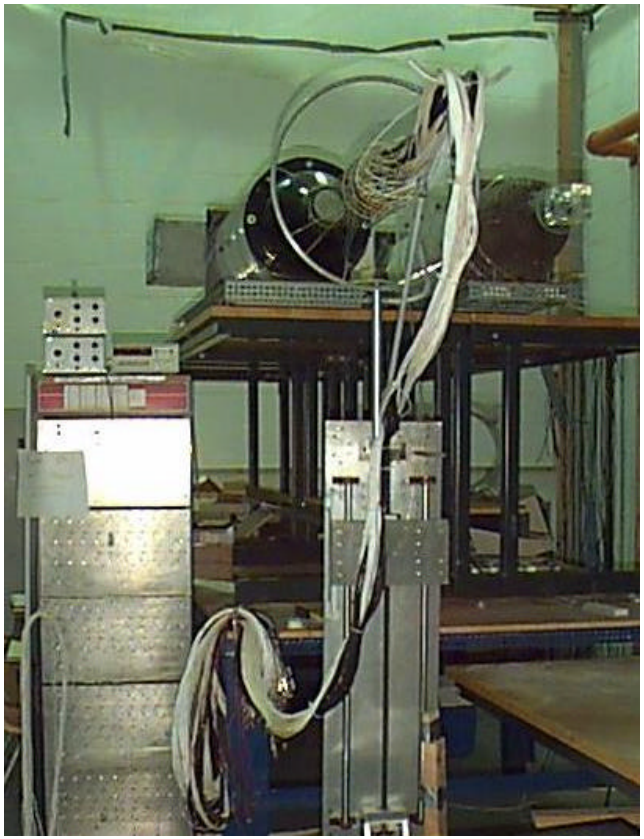


Heat Exchanger Test Facility

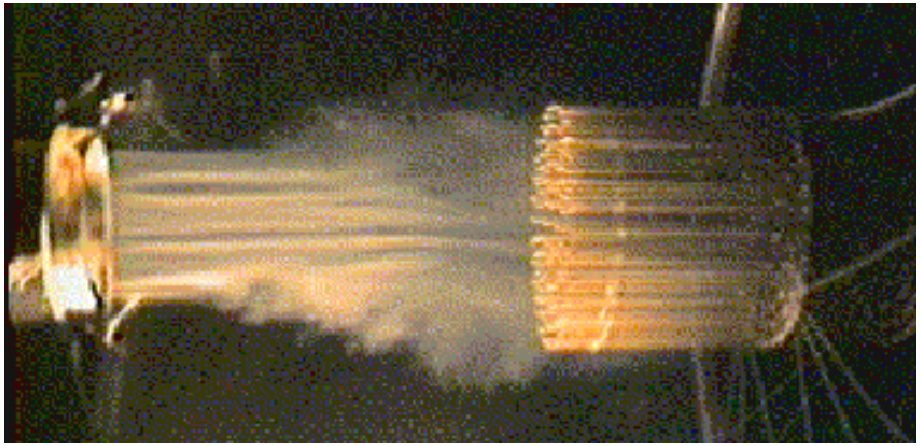




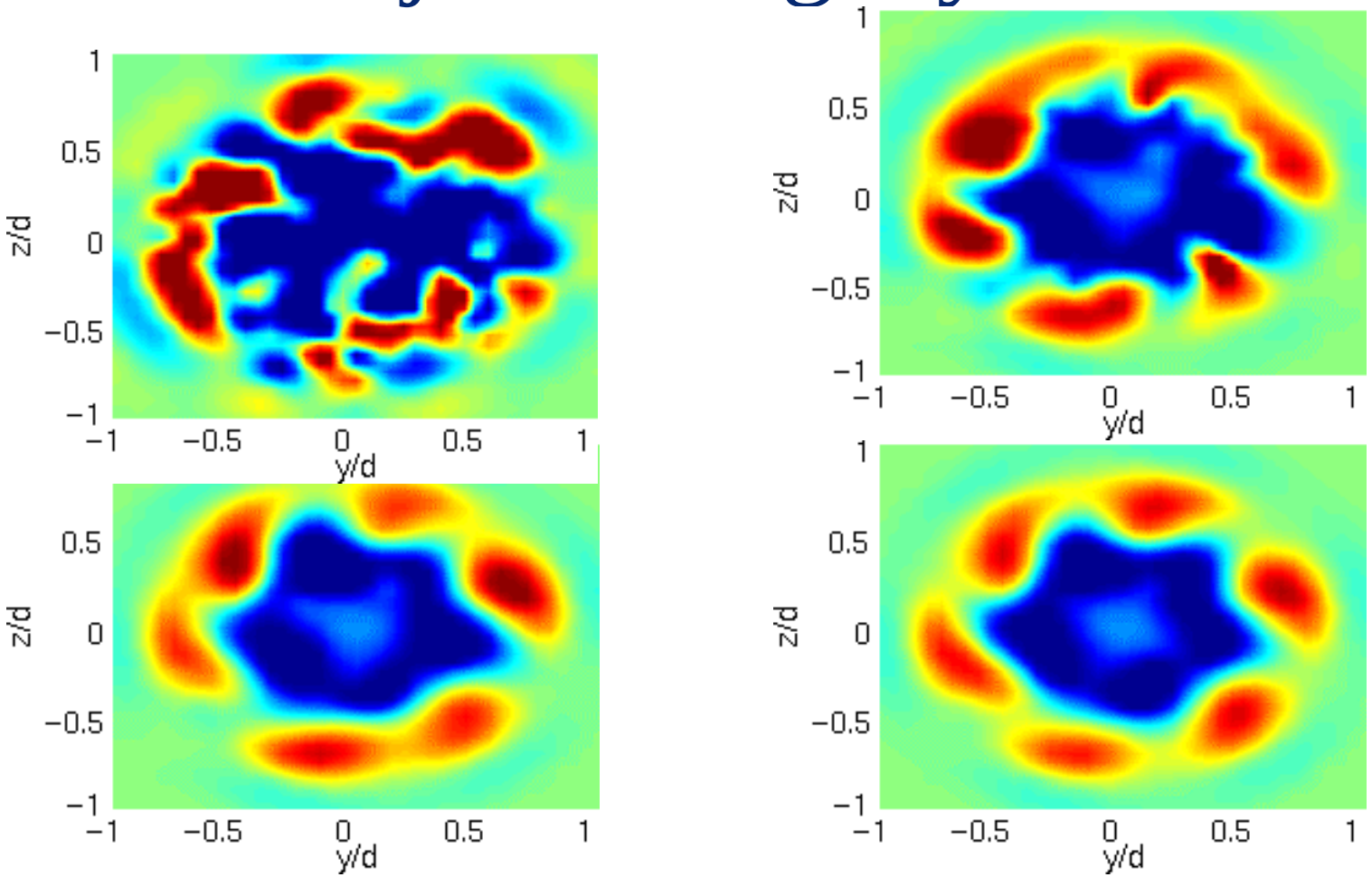
Jet Facilities



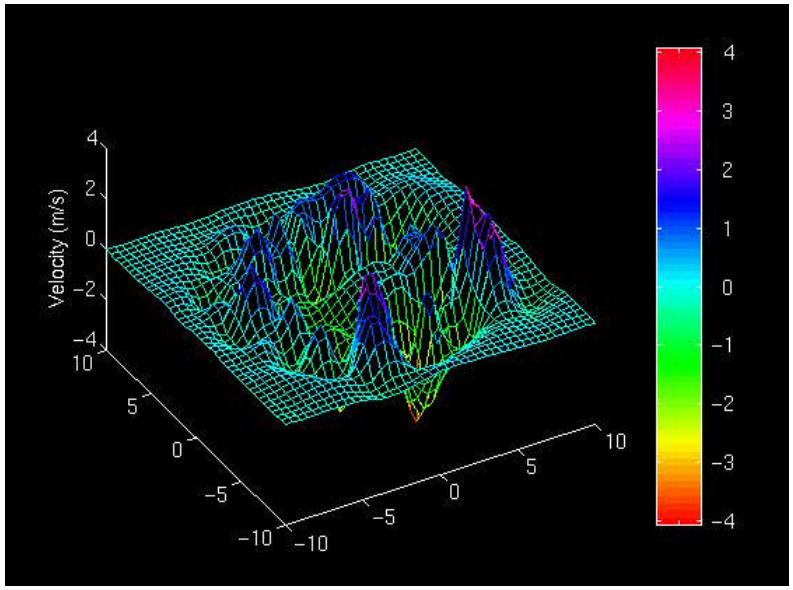




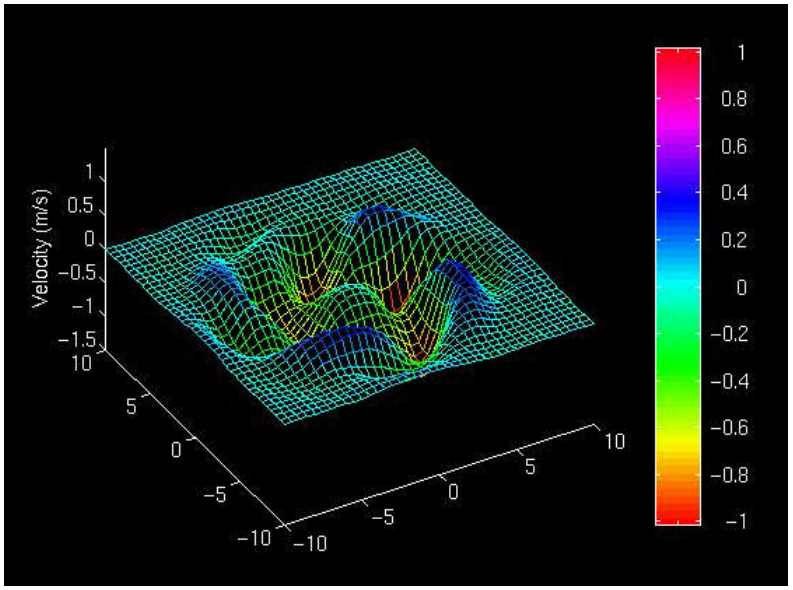
Original and POD reconstructions of jet mixing layer



Original and POD reconstruction of jet mixing layer



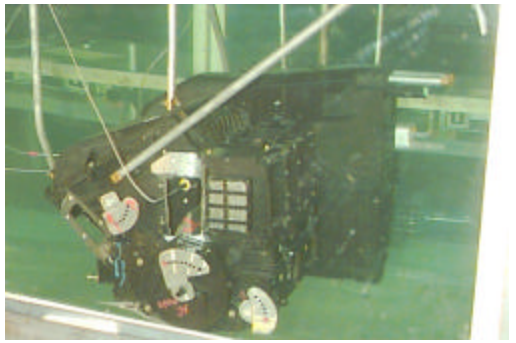
original

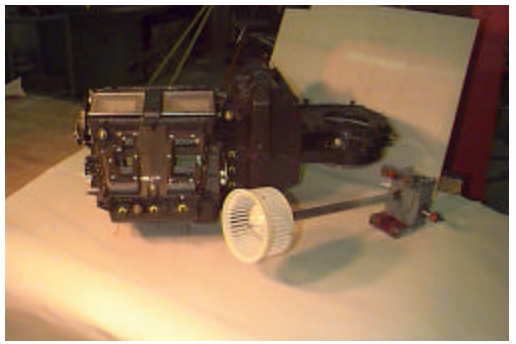


1-mode reconstruction

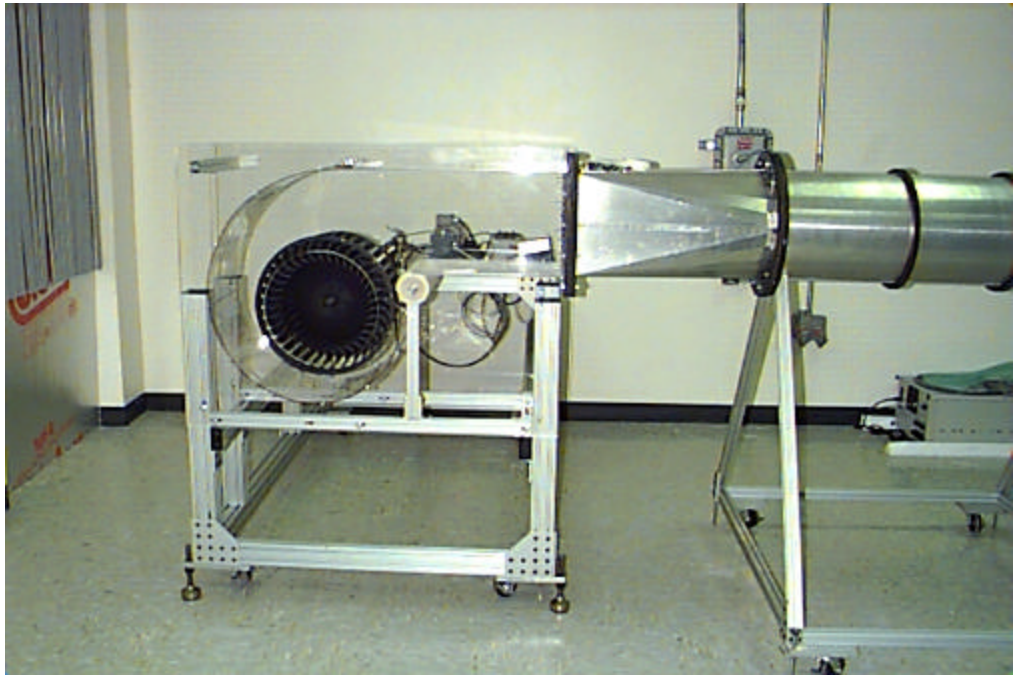
Automotive HVAC Water Tank Facility



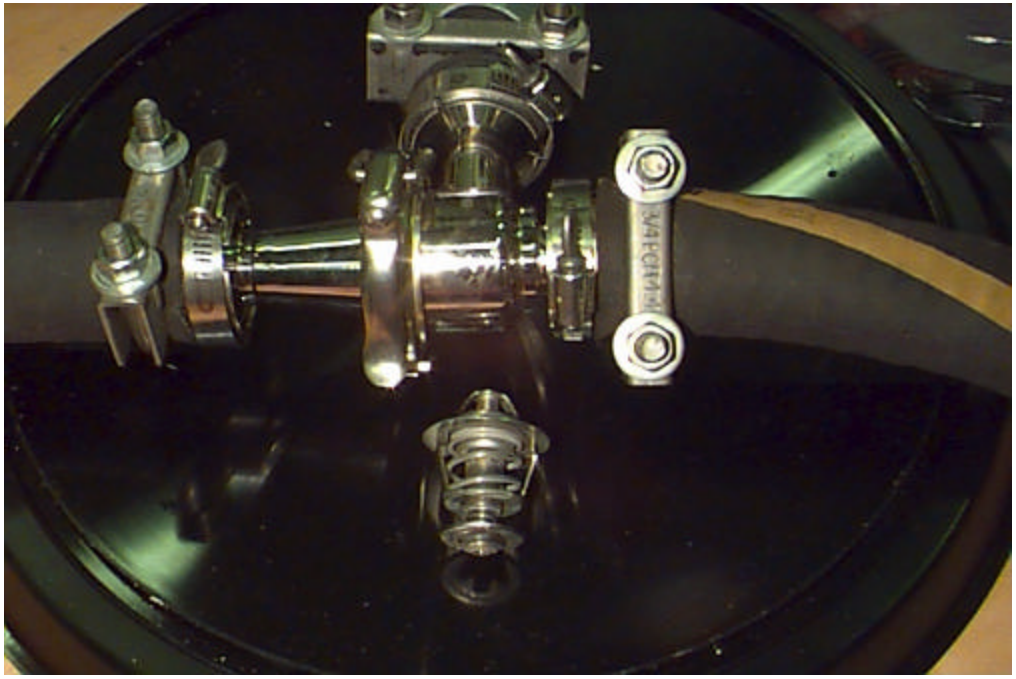




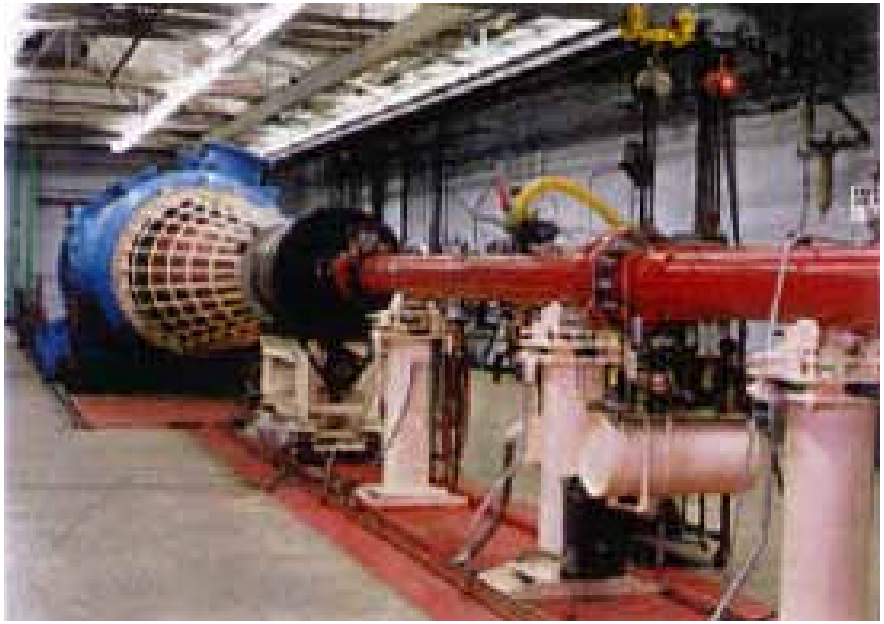
3X-Large Scale Blower Facility



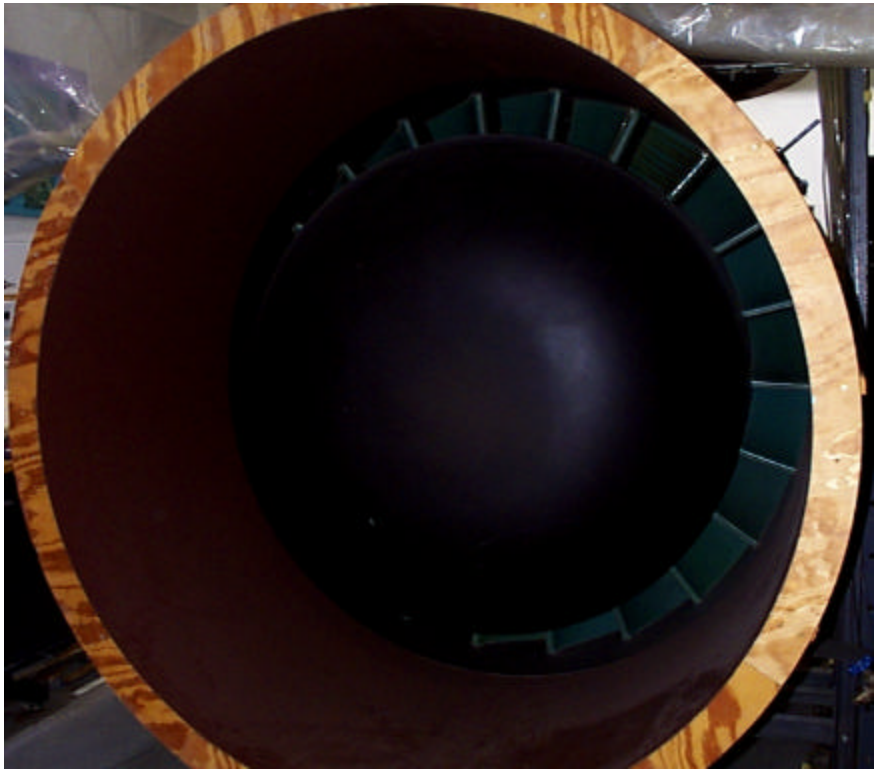
High Temperature Fuel Cell Thermostat Test Rig



Calspan Shock Tunnel for Hypersonic and Gas Turbine Testing



1.5 m Annular Cascade Facility



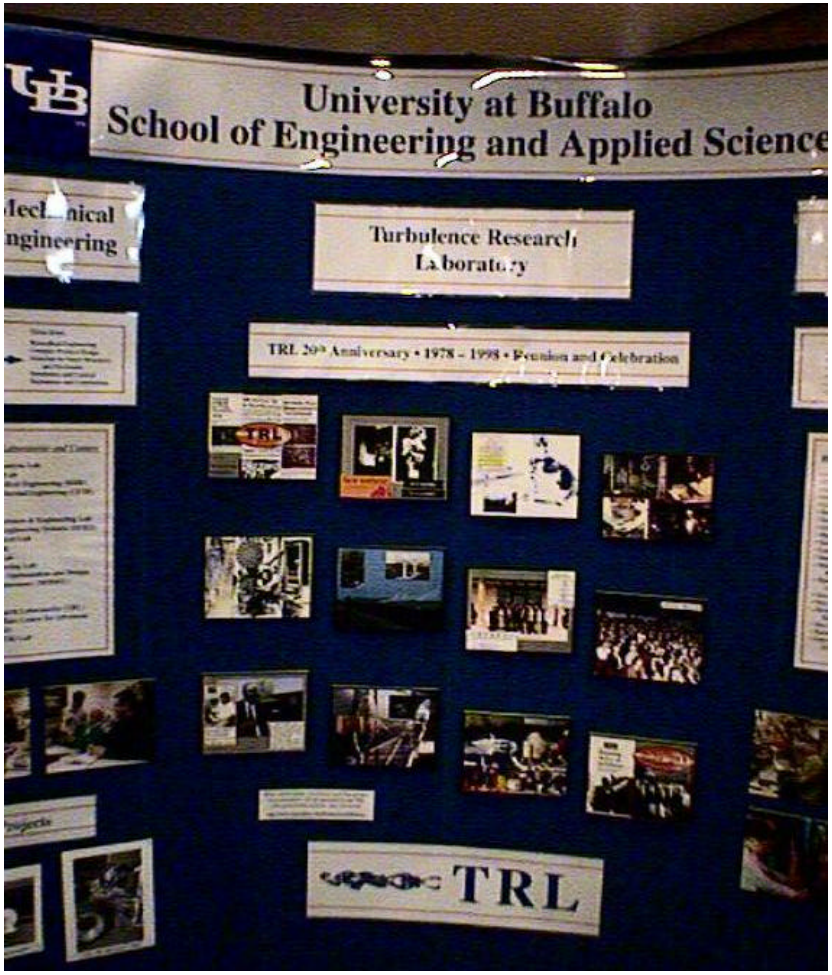






TRL 20th Anniversary





How did I get here?

It wasn’t easy!



As unbelievable as it may seem,





in ‘97 I just sailed in.

I’m still here

– and now for good.





William K. George
S/V Wings
Kajskjul 205
Lilla Bommen
S - 411 04 Göteborg

Why am I here?

Overall I have three general objectives:

- Create a world-class Turbulence Research Laboratory at Chalmers
- Help the faculty (and students) of Chalmers to do their job better.
- Help Swedish industry do its job better.

I’m moving a lab ... and even a website!

http://www.tfd.chalmers.se/TRL/

CHALMERS
Chalmers University of Technology

Department of Thermo and Fluid Dynamics

School of Mechanical and Vehicular Engineering

TURBULENCE RESEARCH LABORATORY

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Our initial focus in TRL will be:

- Diffuser and adverse pressure gradient flows
- Thermal flows with heat transfer and buoyancy
- Control of turbulence by upstream conditions

A few old friends are joining me...



Rolf Karlsson



Martin Wosnik



Scott Woodward

...and some new ones as well.



Gunnar Johansson





Peter Johansson



Bert Johansson



Bernhard Gustafsson