

ROSS BAKER: H.B.Sc., B.Ed., M.Sc.

rosseb@yorku.ca

PROFILE

- ★ *An experienced and accomplished researcher recipient of several awards and publications at the Ph.D. level.*
- ★ *Outgoing, well-rounded qualified experienced educator committed to upholding sound, practical and ethical academic standards*
- ★ *Active participant in promoting knowledge of science, enjoying and applying science in everyday activities.*
- ★ *Professionally oriented, personable, hard working committed team player with exceptional computer and interpersonal skills.*
- ★ *Versatile, capable of creating stimulating and challenging learning environments based on superior presentation and training management skills.*
- ★ *Demonstrated capability to acquire new skills in software applications and technological implementation*
- ★ *Intensive research, lecturing and teaching background; unique abilities to translate spatial, causative, and abstract concepts.*
- ★ *Committed to training excellence and continuous professional upgrading.*

PROFESSIONAL TRAINING

York University: Graduate Program in Physics and Astronomy, 1998 – present

Doctor of Philosophy candidate

Elliptical Rotational Parametric Instability and the Geodynamo

Master of Science, 2000

The Subseismic Approximation in Long Period Core Dynamics

University of Toronto: 1990 - 1997

Bachelor of Education Program (OISE/UT), 1997

*Honours Bachelor of Science degree graduating **With Distinction**, 1996*

H.B.Sc. Specialist program in Astronomy, Mathematics and Physics

Professorial Positions: Course Director & Team Lecturer

YORK UNIVERSITY (total of 14 CD positions over 7 different courses)

Division of Natural Science

The Earth and its Atmosphere, NATS 1750

Fall-Winter 2010-11

Fall 2009, Fall 2008

Winter 2004

Energy, NATS 1810

Winter 2011 Double Speed

Fall-Winter 2008-9

Winter 2008 Double Speed

Winter 2007

Science, Technology and the Environment, NATS 1840

Summer 2008 Double Speed

Department of Earth and Space Science and Engineering

Introduction to Atmospheric Science, EATS1011M, Winter 2012 and 2011

The Dynamic Earth and Space Geodosey, EATS1010A, Fall 2010

Seismology, EATS 3180, Winter 2001

Department of Multi Disciplinary Studies: GLENDON College

An Introduction to Science, Technology and Society, GL/NATS 1890

Fall-Winter 2011-12, 2010-11, 2009-10 and 2008-9

TEACHING ASSISTANTSHIPS

York University (10 different courses)

Taught Physics and Geophysics

1st year Physics Laboratory Demonstrator

Time Series and Spectral Analysis

Applications of Geophysics and Interpretation Theory

Introduction to Geophysics, Geology and Space Science

Seismology

Taught Natural Sciences

(general education courses for non-science students)

The Earth and Its Atmosphere

Technology and the Environment

Examined and evaluated students in Mathematics

Applied Linear Algebra

Examined and evaluated students in Professional Engineering Practice

University of Toronto

First Year Physics Laboratory Demonstrator, 1994 – 1996 as a 3rd and 4th year undergraduate student, and 1996 – 1997 as a B.Ed. student

ACADEMIC ACHIEVEMENTS AND INITIATIVES

Organized session of the AGU Fall Meeting, 2009.

Planetary Magnetism, Core Dynamics, and Dynamo Mechanisms: Bridging the Gap Between Observations and Models, Revisited.

Co-conveners: Paul Roberts, Weijia Kuang and Andrew Jackson

Organized session of the AGU Joint Assembly, 2006.

Bridging the Gap Between Observations and Models for Planetary Dynamos

Co-convenor: Claire Bouligand

***Elected to York University Senate** as part time faculty representative: Faculty Science and Engineering

***Organized and implemented seminar series:** *Teaching Development for Graduate Assistants*

***Orchestrated**, as a Master's student, Physics and Astronomy Graduate Seminar Series

AWARDS AND SCHOLARSHIPS

Winner of “Best Student Poster”: Geophysics Division of the Geological Association of Canada. American Geophysical Union (AGU). **2009** Joint Assembly, Toronto Ontario

Awarded Outstanding Student Paper: Study of the Earth's Deep Interior Focus Group (SEDI) of the American Geophysical Union (AGU). **2006** Joint Assembly, Baltimore, MD.

Ontario Graduate Scholarship (OGS), 2003-2004

Ontario Graduate Scholarship in Science and Technology (OGSST), 2002-2003

Two time winner of the **Arthur Loudon Scholarship** for prospective science teachers based on academic excellence, **1994-5 and 1995-6**

Awarded the **John Pounder Prize in Astronomy** for academic excellence, **1992**

94th percentile in the University of Waterloo **Junior Math Contest, 1976**

Received **Merit Award** for participation in high school clubs and teams, **1975-1979**

CONFERENCES

Oral presentations

American Geophysical Union (AGU) Fall Meeting, San Francisco 2009

Laboratory Model of a Tidal Source for the Ancient Martian Dynamo

Baker, R.E. and K.D. Aldridge

American Geophysical Union (AGU) Joint Assembly, Baltimore 2006

Awarded outstanding Student Paper

Evidence for a Rotationally Driven Geodynamo From Laboratory Experiments and Measurements of Relative Paleomagnetic Intensity

Baker, R.E., McMillan, D.G., Lumb, L.I. and K.D. Aldridge

International Union of Geodesy and Geophysics (IUGG), Sapporo Japan, 2003

American Geophysical Union (AGU) Chapman Conference, University of Florida, 2003

Paleomagnetic Intensity Data as a Time Series: Opening a Window Into Dynamics of Earth's Fluid Core

Baker, R.E. and K.D. Aldrige

Also Presented as Department Colloquium:

Earth and Space Science and Engineering, York University

Canadian Geophysical Union (CGU): GEOCanada, Calgary, 2000

M.Sc. research presentation

The Subseismic Boundary Layer in Long Period Core Dynamics

Baker, R.E. and D.E. Smylie

Additional Contributions

American Geophysical Union (AGU) Joint Assembly, Toronto 2009

Awarded Best Student Poster:

Laboratory Observations of Elliptical Rotational Parametric Instability Confirm a Dynamo Mechanism

Baker, R.E. and K.D. Aldridge

SEDI 2006 Prague

Poster: Rotating Parametric Instability in Early Earth

Baker, R.E. and K.D. Aldridge

Presented by K. D. Aldridge

IAGA Symposium 2007

Poster: New Evidence for Rotating Parametric Instability in Earth's Core

Aldridge, K.D., Baker, R.E., Lumb, L.I. and D.G McMillan

Oral: The Role of Resonant Triads in Driving Planetary Dynamos

Aldridge, K.D., Baker, R.E. and D.G. McMillan

American Geophysical Union (AGU) Joint Assembly, Montreal 2004

Poster: Instability Growth Rates for Earth's Fluid Core From Paleomagnetic Intensity Data

Baker, R.E. and K.D. Aldridge

SEDI 2002, Lake Tahoe

Relative Paleomagnetic intensity data: Window on Earth's Core Dynamics

Baker, R.E. and K.D. Aldridge

PUBLICATIONS

2008 Arkani-Hamed, J., B. Seyed-Mahmoud, K. D. Aldridge, and **R. E. Baker** (2008), [Tidal excitation of elliptical instability in the Martian core: Possible mechanism for generating the core dynamo](#), **J. Geophys. Res.**, **113**, E06003, doi: 10.1029/2007JE002982.

2007. Aldridge, K., **Baker, R.** and D. McMillan. [Rotating parametric instability in Early Earth](#). *Geophysical and Astrophysical Fluid Dynamics*, Volume 101, Issue 5--6, 507 – 520

2006. **Baker, R.**, McMillan, D., Lumb, L.I., and K. Aldridge. [Chronology errors and their effects on the recovery of characteristic time scales of the geodynamo from relative paleointensity](#). *Physics of The Earth and Planetary Interiors*, Volume 159, Issues 3--4, 267-275

2004. **Baker, R.** and K. Aldridge. [Paleomagnetic intensity data as a time series: opening a window into dynamics of Earth's fluid core?](#) *Geophysical Monograph Series 145, Timescales of the Paleomagnetic Field*. 10.1029/145GM18.

2003. Aldridge, K. and **R. Baker**. [Paleomagnetic intensity: a window on the dynamics of Earth's fluid core?](#) *Physics of the Earth and Planetary Interiors*, 140(2003) 91-100.

ADDITIONAL EMPLOYMENT HISTORY

1. Research Assistant - C, FORTRAN and NCAR-Graphics Programmer
Department of Environmental Earth Sciences, University of Toronto at Scarborough, summers of 1994 and 1995
2. Library Assistant, University of Toronto at Scarborough, 1992 –1994

Mentoring

One-on-one tutoring of high school & university, physics and mathematics students.
Numerous student accolades for instruction clarity and theory explanation