

WILLIAM R. KAVANAGH

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SHORT TERM GOALS

Find a short term laboratory or course instructional position at the university or college level.

LONG TERM GOALS

Obtain a teaching position in academia at the university or college level in physics with the possibility of research. Possibly obtain a Ph.D with this goal in mind. Contribute to development in the area of physics education; in particular the pedagogical approaches as well as the sequence and grouping of physics concepts used within the curriculum.

EDUCATION

2003–2006 Memorial University
M.Sc. Physics

1998–2003 Memorial University
B.Sc. (Hon.) Physics

ACADEMIC & PROFESSIONAL EXPERIENCE

- **September, 2010 - April, 2011** — **Instructional Assistant**, Memorial University.
Supervisor: Dr. Rick Goulding
- **May, 2010 - August, 2010** — **Course Instructor**, Memorial University.
Supervisor: Dr. Brad de Young
Project: Taught Physics 1051 on a per course assignment.
- **September, 2009 - August, 2010** — **Instructional Assistant**, Memorial University.
Supervisor: Dr. Rick Goulding
- **September, 2008 - April, 2009** — **Instructional Assistant**, Memorial University.
Supervisor: Dr. Rick Goulding
Project: Same as 2006 position below. In addition, worked on a video demonstration project. This included recording video, producing content, conducting demonstrations, converting and preparing video. This was done for both content related to the laboratory and class component of the courses.

- **January, 2008 - April, 2008** — **Course Instructor**, Memorial University.
Supervisor: Dr. Brad de Young
Project: Taught Physics 1020 on a per course assignment.
- **June, 2007 - June, 2008** — **Instructional Assistant**, Memorial University.
Supervisor: Mr. John Wells
Project: Same as 2006 position below. Also, produced a significantly revised version of six labs in Physics 1020 to reduce the length from three hours to two and to make improvements. Collaborated to do the same for Physics 1021. Helped to setup LON-CAPA which involved some scripting and learning LON-CAPA.
- **September, 2006 - April, 2007** — **Instructional Assistant**, Memorial University.
Supervisor: Mr. John Wells
Project: Same as 2006 position below. Also, composed a detailed inventory spreadsheet for first year lab equipment along with automatically generated equipment lists for each lab experiment. Also organized and generated lab shelf map for submission of laboratory reports.
- **September, 2005 - April, 2006** — **Instructional Assistant**, Memorial University.
Supervisor: Mr. John Wells
Project: Preparing laboratory for experiments, demonstrating proper procedure and apparatus usage, illustrating physics concepts, assisting students in the Physics Help Centre, grading laboratory reports, recording grades, instructing Teaching Assistants on the details of each experiment. Composed a comprehensive manual for Teaching Assistants of the first year labs.

RESEARCH EXPERIENCE

- **September, 2003 - August, 2006** — **Graduate Student**, Memorial University.
Supervisor: Dr. Ivan Booth
Project: Black hole Slowly Evolving Horizons and thermodynamic calculations.
- **May - August, 2003** — **Research Assistant**, Memorial University.
Supervisor: Dr. Brad de Young
Project: Oceanographic research pertaining to The Bonne Bay Marine Station. Involved Matlab work on topographic and bathymetry data.
- **May - August, 2002** — **Student Researcher**, Memorial University.
Supervisor: Dr. Brad de Young
Project: Research on a special class of capillary waves.
- **May - August, 2001** — **Student Researcher**, Memorial University.
Supervisor: Dr. Brad de Young
Project: Oceanographic research some of which took place in the field. Also some work was done on a special class of capillary waves.

COMPUTER SKILLS

- Operating Systems: Windows, Mac OS, Unix/Linux
- Math Packages Mathematica, Matlab (e.g. Image Processing Toolbox), Maple, GRTensor
- Computer Languages: Fortran, HTML
- Document Preparation: MS Word, Open Office, \LaTeX
- Various Spreadsheet Programs
- CAPA, LON-CAPA, D2L

HONOURS AND CERTIFICATES

- Teaching Opportunities for Graduate Assistants Program Level 2 certificate, Winter 2005 (MUN SGS and Instructional Development Office)
- Faculty of Science Dean's List 1999-2000, 2002-2003

ACTIVITIES

- Canadian Association of Physicists Congress 2011 Committee Member
- Canada Wide Science Fair 2004 Judge
- MUN Physics and Physical Oceanography Society President, 2002-2003

PUBLICATIONS & DOCUMENTS

- **William R. Kavanagh** and **Ivan Booth**. Spacetimes containing slowly evolving horizons. *Physical Review D* (submitted), 2006. (preprint available at <http://lanl.arxiv.org/abs/gr-qc/0603074>)
- **William R. Kavanagh**. Undergraduate Teaching Assistant Manual. 2006. (Written during September 2005 through April 2006 as listed above.)

PRESENTATIONS

- **William R. Kavanagh**, Slowly Evolving Horizons In Perturbative General Relativity; Tidally Distorted Black Hole. *11th Canadian Conference on General Relativity and Relativistic Astrophysics*, May 19-21, 2005, University British Columbia.
- **William R. Kavanagh**, Slowly Evolving Horizons In Perturbative General Relativity; Infalling Dust Shells *Black Holes V: Theory and mathematical aspects*, May 14-18, 2005, University of Alberta.
- **William R. Kavanagh**, Ripples on the Water; Capillary Wave Phenomenon. *Canadian Undergraduate Physics Conference (CUPC)*, 2002, Dalhousie University, Nova Scotia.