



FORM 101
Application for a Grant
PART I

Date 2002/10/23

Family name of applicant O'Neil	Given name Dugan	Initial(s) of all given names C	Personal identification no. (PIN) 161201
Language of application <input checked="" type="checkbox"/> English <input type="checkbox"/> French		Time (in hours per month) to be devoted to the proposed research / activity 66	
Type of grant applied for Subatomic Physics - Project		For Strategic Projects, indicate the Target Area and Sub-area(s), if applicable	

Title of proposal
The D0 Experiment: Physics at the Energy Frontier

Write a maximum of ten (10) key words that describe this proposal. Use commas to separate them.
Particle Physics, Fermilab, Tevatron, Standard Model, D0, Top Quark, Grid, Hadron Collider, Remote Data Processing

Research subject code(s) Primary 3104	Secondary	Area of application code(s) Primary 1202	Secondary
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CERTIFICATION REQUIREMENTS

If this proposal involves any of the following, check the box(es) and submit the protocol to the university certification committee.
 Research involving humans Research involving animals Research involving biohazards

Does any phase of the research described in this proposal a) take place outside an office or laboratory, or b) involve an undertaking as described in Part 1 of Appendix B?
 NO If YES to either question a) or b) – Appendices A and B must be completed

TOTAL AMOUNT REQUESTED FROM NSERC

Year 1 0	Year 2 0	Year 3 111,938	Year 4 165,545	Year 5 195,283
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SIGNATURES (Refer to instructions "What do signatures mean?")

It is agreed that the general conditions governing grants as outlined in the NSERC *Program Guide for Professors* apply to any grant made pursuant to this application and are hereby accepted by the applicant and the applicant's employing institution.

Applicant Applicant's department, university, tel. and fax nos., and e-mail Physics Simon Fraser Tel.: (630) 8402829 FAX: (630) 8408886 oneil@fnal.gov	Head of department Dean of faculty President of university (or representative)
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Personal identification no. (PIN)

161201

Family name of applicant

O'Neil

CO-APPLICANTS

I have read the statement "What do signatures on the application mean?" in the accompanying instructions and agree to it.

PIN, family name and initial(s)	Research/ activity time (hours/month)	Organization	Signature
127528, Vetterli, M.C	50	Simon Fraser	

CO-APPLICANTS' ORGANIZATIONS AND/OR SUPPORTING ORGANIZATIONS (if organization different from page 1)It is agreed that the general conditions governing grants as outlined in the NSERC *Program Guide for Professors*, as well as the statements "What do signatures on the application mean?" and "Summary of proposal for public release" in the accompanying instructions, apply to any grant made pursuant to this application and are hereby accepted by the organization.

Family name and given name of signing officer, title of position, and name of organization	Signature

Personal identification no. (PIN)

161201

Family name of applicant

O'Neil

SUMMARY OF PROPOSAL FOR PUBLIC RELEASE (Use plain language.)

This plain language summary will be available to the public if your proposal is funded. Although it is not mandatory, you may choose to include your business telephone number and/or your e-mail address to facilitate contact with the public and the media about your research.

Business telephone no. (optional): 1 (630) 8402829

E-mail address (optional): oneil@fnal.gov

The D0 experiment is being carried out at the Tevatron collider at the Fermi National Accelerator Laboratory in Batavia, Illinois. The Tevatron is the world's highest energy particle collider producing proton-antiproton collisions at a centre-of-mass energy of 1.96TeV. The physics programme of D0 is rich and varied. It includes the search for the Higgs boson (the origin of mass), the search for evidence of supersymmetry, extra dimensions and other types of new phenomena, measurement of the properties of the top quark, precision measurements of W boson properties, B-physics and QCD studies. The current data-taking period is known as Run II and promises to yield some of the most exciting opportunities in high energy physics in the next several years for both new discovery and precision measurement. Canada's contribution to D0 is centred around the use high performance computing to analyze large data sets.

Second Language Version of Summary (optional).

Personal identification no. (PIN) 161201	Family name of applicant O'Neil
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RESEARCH ACTIVITY SCHEDULE

(Refer to instructions to see if this section applies to your application. Use additional page(s) if necessary.)

Milestone	Description of activities	Anticipated starting date	Anticipated completion date

Personal identification no. (PIN)	Family name of applicant
161201	O'Neil

REFERENCES

Before completing this section, read the instructions on References. Your list of references must not exceed one page.

Empty space for listing references.

Personal identification no. (PIN)

161201

Family name of applicant

O'Neil

Before completing this section, **read the instructions** and consult the *Financial Administration* section in the NSERC *Program Guide for Professors* concerning the eligibility of expenditures for the direct costs of research and the regulations governing the use of grant funds.

PROPOSED EXPENDITURES FOR DIRECT COSTS OF RESEARCH (Include cash expenditures only)

	Year 1	Year 2	Year 3	Year 4	Year 5
1) Salaries and benefits					
a) Students	0	0	22,000	33,000	49,500
b) Postdoctoral fellows	0	0	42,400	63,600	63,600
c) Technical/professional assistants	0	0	0	0	0
d)	0	0	0	5,000	5,000
2) Equipment or facility					
a) Purchase or rental	0	0	7,500	0	2,500
b) Operation and maintenance costs	0	0	0	0	0
c) User fees	0	0	0	0	0
3) Materials and supplies	0	0	5,000	5,000	5,000
4) Travel					
a) Conferences	0	0	4,700	12,800	14,500
b) Field work	0	0	11,345	22,614	27,114
c) Collaboration/consultation	0	0	18,993	23,531	28,069
5) Dissemination costs					
a) Publication costs	0	0	0	0	0
b)	0	0	0	0	0
6) Other (specify)					
a)	0	0	0	0	0
b)	0	0	0	0	0
TOTAL PROPOSED EXPENDITURES FOR DIRECT COSTS OF RESEARCH	0	0	111,938	165,545	195,283
Total cash contribution from industry (if applicable)					
Total cash contribution from university (if applicable)					
Total cash contribution from other sources (if applicable)	0	0	0	0	0
TOTAL AMOUNT REQUESTED FROM NSERC (transfer to page 1)	0	0	111,938	165,545	195,283