Potential for NSERC CREATE within IPP

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For discussion

IPP and Training

- Features prominently in the Mission Statement
  - "*To promote Canadian excellence in particle physics research and advanced education....*"
  - "*To train highly qualified personnel, expose the next generation of Canadians to the opportunities in particle physics world-wide....*"
  - Also, PDFs and grad students are a fundamental component of particle physics research, and involvement in training helps to cement the link between IPP and Universities

The recent IPP grant reduction has implications for training support, along with other activities such as outreach

Support for Theory

- Majority of recent financial support for training has been through the Theory PDF program
  - 80K/yr for 4 fellows
- Reduction of IPP grant required the ramp-down of this program
- Given funding pressure, should we ***look outside the SAP envelope***?
  - May require a different model, with direct funding to other forms of HQP, providing indirect support for theory PDF's through reallocations
  - Want to ensure that any new form of training support is consistent with core goals (i.e. that its not counter-productive)

NSERC CREATE

- Provides up to 1.65M over 6 years for value-added graduate training programs
- Focus is on *grad students*, but can include undergrads and PDFs (80% of funds must go to trainees, with 20% to admin support, travel, etc)
  - e.g. ~10-12 student RA fellowships plus 1-2 postdocs
- Program requires *value-added* training, including professional expertise, and encourages mobility, with the goal of providing skilled workers for academic **and** non-academic careers (research, govt, and industry)

NSERC CREATE

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- Only the applicant, plus up to 10 co-applicants, can use the funds
  - For IPP and CINP, this might require co-applicants to form an oversight board to oversee allocation of awards
  - The co-applicants need specified expertise and training roles, and the strength of the team forms a significant criterion for success of the LoI

Training Plan Ideas

1. Fund graduate internships
   (e.g. 1 year for PhD, 6 months for MSc)
   a) Move to another (national/international) research group or lab to expand research experience
   b) Take part in one or more value-added programs
      (i) Specialized (new) graduate courses
      (ii) Theory internship (e.g. http://theory.fnal.gov/students/, also Perimeter Visiting Graduate Fellows program)?
      (iii) TRIUMF internship in accelerator physics (or detector development)?
      (iv) Develop skills and experience in high performance computing?
      (v) Skills translation via management/business school program?

Training Plan Ideas

2. Fund 1-year postdoc “sabbaticals”
   a) Move to another (national/international) research group or lab to expand research experience
   b) Take part in one or more value-added programs
      (i) TRIUMF internship in accelerator physics (or detector development)?
      (ii) Develop teaching skills, e.g as a tutor at TRISEP?
      (iii) Skills translation via management/business school program?
3. Incorporate undergraduate summer research
   a) Continue use of NSERC USRA’s to fund research within Canadian groups
   b) Fund 2 month projects, to be followed by the 2 month CERN Summer School

Relevant examples?

A couple of CREATE programs with possible overlap in training ideas, although not in subject area...

- QuEST (UBC) - physics of “quantum” materials
  - http://www.quest.ubc.ca/

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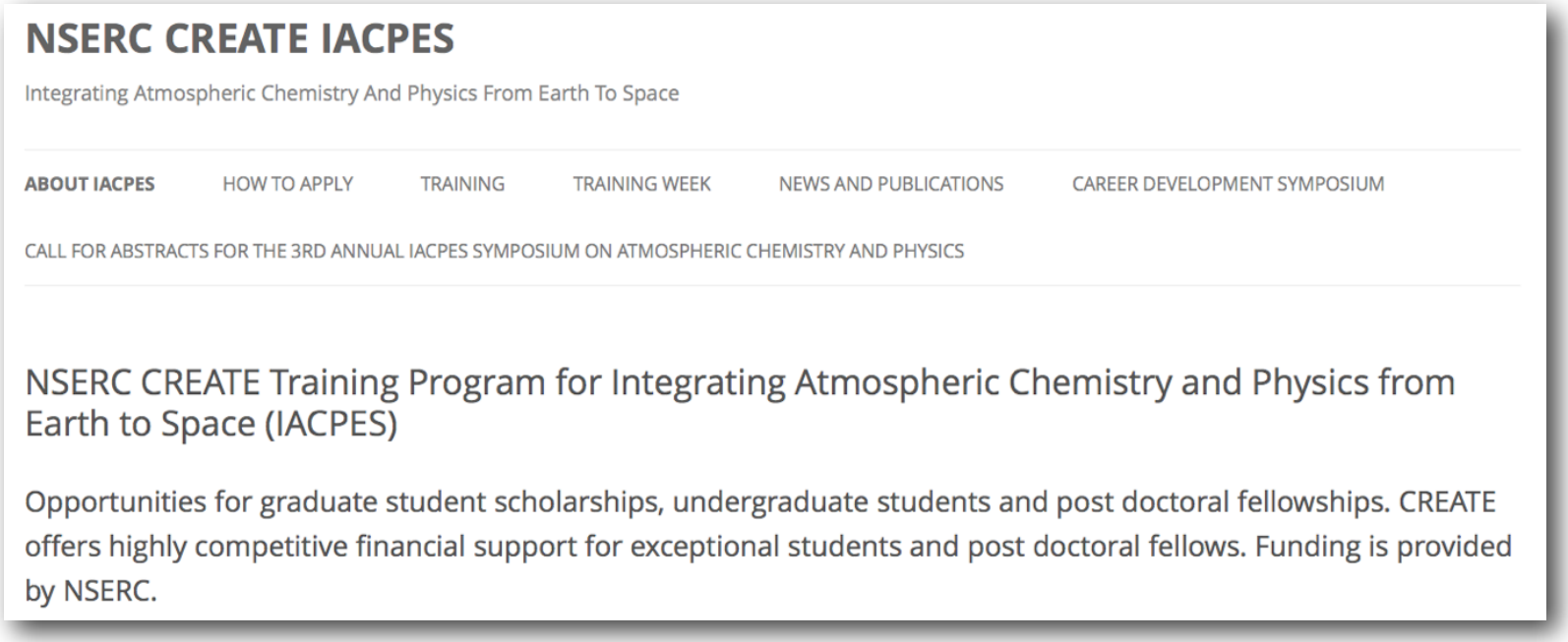


- IACPES (York+others) - physics & chemistry of planetary atmospheres
  - http://iacpes.info.yorku.ca

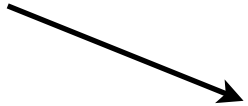
Application Process

- LoI (April)
  - step 1 - internal selection by host institution
  - requires a supporting letter from VP Research, normally includes financial support (cash & in kind, e.g. 40K/yr at U Victoria) committed by the relevant faculties and depts.
- Application (September)
  - if LoI selected by NSERC
- Decision (following April)

(NB: IPP grant renewal application is due in November 2015)

Followup?

- Form a task force to consider the proposal (e.g. from IPP and CINP)



Requires work, and no guarantee of success, so need broad community interest...

  - Host university? (Requires strong admin support)
  - Explore viable training programs, and co-applicants
  - Application doesn't require industrial partners, but may require identifying a set of industrial "consumers" (e.g. could use detector construction partners)
  - Explore the possibility of a skills-translation program with a business/management school?