Pursuit of Nuclear Science and Technology Education

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<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1931</td>
<td>The first Radon plant</td>
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<tr>
<td>1948</td>
<td>first Betatron in Canada</td>
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<td>1951</td>
<td>First non-commercial Co-60 unit</td>
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<td>1952</td>
<td>First Ph.D.</td>
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<td>1964</td>
<td>Linear Accelerator</td>
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<td>1999</td>
<td>Canadian Light Source</td>
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Nuclear Education Issues

- Unawareness
- Apprehension
- Bad press
- Program abandonment
- Scarcity of experts
- Time lag
Our Approach: jump-start

- Multi-prong:
  - A) Graduate training
  - B) undergraduate training
  - C) Outreach  (high school)
Graduate Training

• Nuclear instrumentation and radiation physics graduate programs at various facilities
  \( (J\text{-PARC, KEK, SPring-8, HIGS, INCAS3}) \)

• Joint ventures:
  - University Network of Excellence in Nuclear Engineering (UNENE)
  - University of Ontario Institute of Technology (UOIT)
M.Sc. And UG students at work
HPGe detector
Undergraduate Training

- Non-specialists: 2-3 courses in nuclear and radiation physics (engineers, educators, professionals)
- Practicums on radiation detection and measurement
- Projects with AREVA, SLOWPOKE at SRC, Vet Med, Cancer Clinic, CLS

Extend to collaborations with colleagues in Ontario
Uranium Ore Analysis

Rob Hewitt, Robyn Reist, Jason Sadowski
Engineering Physics

College of Engineering Student Paper Presentation Competition
March 26, 2009
Supervisors: Mike Bradley, Chary Rangacharyulu
Client: Tyson Pederson (Areva)
In works

- Revamp the undergraduate program-
- Innovative Programming Agenda (experiential learning)
- B.Sc.(Hons) specializations
  - Nuclear Science stream (>15 cu)
    - Distance learning (UNENE, UOIT etc..)
    - Internships (local, national & abroad)
    - Projects at research centers
• Extend to our Engineering Physics
  - Nuclear engineering stream

  Accreditation hurdles
turf wars
Interactions with External Agencies

• Annual Symposia and workshops (engage faculty and students)

Symposium on Science and Technology of Clean Energy Solutions

April 8, 2008

U of S, AECL, Raum Energy etc..
Trends in Nuclear & Medical Technologies
(Apr. 6-7, 09)

• INCAS3 (Netherlands)
• GE-Healthcare (USA)
• HCMUNS (Vietnam)
• AECL
• AREVA
• UofS (Physics and Engineering Physics, Medicine, Vet Med, Cancer Center)

http://physics.usask.ca/Trends.htm
Outreach- collaborations

- Women In Science & Engineering (WISE)
- Science Ambassadors program
  Danielle Anderson-
    M.Sc. student at U of A (Fall 2008)
    Kay Perreault (3rd year EP)
- Local High Schools
- Northwest Nations Education Council (North Battlefords)
  - U of S
  - U of S & INCAS3
• Many programs in progress
• Hope to see some tangible results in near future

• Thank You.