



**CACSA/AIC**  
Canadian Association of Computer Science / Association d'Informatique Canadienne

# OUTREACH COMMITTEE REPORT 2011-12

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Danny Silver – Acadia University  
Daryl Hepting – University of Regina

## OUTLINE

- Purpose and Mandate of the Committee
- Progress in 2011-12
- Focus on Saskatchewan
- Requests/Recommendations for coming year
- Discussion



## PURPOSE OF THE OUTREACH COMMITTEE

- To increase Canadian youth interest in the study of Computer Science and its many areas of research and application



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## 2011-12 MANDATE OF THE COMMITTEE

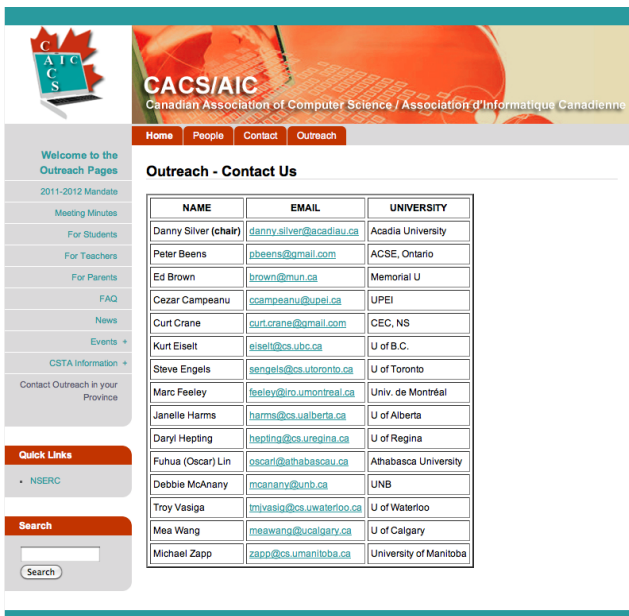
- To shift the CS perspective of teachers, counselors, administrators, and policy makers in the educational systems of our prov./territories
- To encourage formal teaching of computer science and growth of Computer Science Teachers Association or CSTA-like organizations
  - CSTAs provides opportunities for P-12 teachers and students to better understand computing disciplines and to more successfully prepare them to teach and learn. <http://csta.acm.org/>



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# PROGRESS -WEBPAGE



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# PROGRESS – CSEDWEEK 2011



December 4 -10, 2011

- 15 universities reported events versus 26 in 2010:
  - Interactive sessions with students of all ages
  - New Website initiatives – eg. LaunchCS
  - Lab tours by students, School visits by faculty
  - CS info/discussions with Teachers/CIPS
  - PD for CS teachers
  - Robotic / Programming / Game design competitions
  - Open houses and CS science fairs
- Why fewer events:
  - Timing is poor for Canada because end term / exams
  - Grace Hopper theme lacks traction in Canada

[\[Details on CACSAIC Outreach Website\]](#)

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## PROGRESS ACROSS CANADA

### ○ Newfoundland and Labrador

- CS curriculum in high schools has faded since 2002
- Approach to Min. of Education being considered

### ○ Nova Scotia

- Province-wide Robotics/Programming competitions growing and supported by government
- Core group of P-12 teachers identified
- CSTA Application is being developed
- First CSTA mini-meeting to take place in October as part of Math Teachers Association meeting



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## PROGRESS ACROSS CANADA

### ○ New Brunswick

- Core group of P-12 teachers identified for CSTA
- Awarded \$13,500 from Google <http://cs4hs.com/>
- CS4HS event planned for June 15, 2012

### ○ Prince Edward Island

- Eager to participate more in coming year

### ○ Quebec

- Universities actively conducting outreach activities
- Representative (U of Montreal) requires assistance identifying and contacting teachers
- CSTA-like organization does not currently exist



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## PROGRESS ACROSS CANADA

### ○ Ontario

- ACSE fills the role of CSTA <http://www.acse.net>
- CS has migrated from Tech. Ed. to Science
- Min. of Education responsible for CS curriculum
- ACSE provides PD for CS teachers
- ACSE annual conference, <http://www.acse.net/conferences>

### ○ Manitoba

- CSTA committee being formed this year
- Active university outreach for recruitment
- Annual High School Programming contest



## PROGRESS ACROSS CANADA

### ○ Saskatchewan

- CSTA chapter formed in 2012
- Daryl Hepting will provide details

### ○ Alberta

- Significant progress beginning with Iverson exam
- Annual teacher in-service meetings / work fairs
- High school teaching symposiums held in June/Jan.
- CSTA chapter formed in 2012 - [cstaab.com](http://cstaab.com)
- [iteachcs.cpsc.ucalgary.ca](http://iteachcs.cpsc.ucalgary.ca) website created as a CS resource for teachers



## PROGRESS ACROSS CANADA

### ○ **British Columbia**

- Joint university effort underway (UBC, Victoria, and Simon Fraser); will then pursue high schools
- CSTA chapter application submitted in early May
- 17th Western Canadian Conference on Computing Education took place on May 4-5, 2012 <http://www.cs.ubc.ca/wccce/2012/>
- In co-op with ACM Special Interest Group on Computer Science Education (SIGCSE)



## PROGRESS ACROSS CANADA

### ○ **Northwest Territories**

- Aurora College ?

### ○ **Nunavut**

- Nunavut Arctic College ?

### ○ **Yukon**

- Yukon College ?



## FOCUS ON SASKATCHEWAN

- CSEdWeek 2010
  - Luncheon in Regina with CIPS – Tuesday, December 7
    - Sandra Zilles, CRC Tier 2 spoke
    - Some local high school seniors sponsored to attend luncheon
- U of R became CSTA institutional member
  - Free for 1<sup>st</sup> year, \$200/year afterwards
  - Access to good resources
- Developed CS20 online course with Regina Catholic during Summer 2011
  - Based on 1999 curriculum
  - Chose Scratch, Build Your Own Blocks, and Greenfoot



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## FOCUS ON SASKATCHEWAN

- CSEdWeek 2011
  - Luncheon in Regina with CIPS – Tuesday, December 6
    - Dean Elliott, Science Consultant with Ministry of Education spoke
  - “Putting Computing into Science” PD workshop – Wednesday, December 7
    - Scratch, Build Your Own Blocks, Greenfoot + CS Unplugged
    - Open to teachers of Grades 6-12: 23 attended (60 CS teachers in SK)
    - Formed CSTA chapter



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## FOCUS ON SASKATCHEWAN

- Presentation to Guidance Counsellors – March 2012
  - Showed video from careermash.ca (CCICT)
  - Used employment statistics from ICTC
- Science Rendezvous – May 12, 2012
  - Light Bot game, LEGO Mindstorm robots
  - Gadgets
  - Well-attended and well-received
- “Discovering Your Direction” – May 15, 2012
  - First Nations Grade 9 students from Regina and surrounding area
  - Binary guessing game with take-home cards, then App Inventor to program it
- Summer Science Camp sessions: TBD

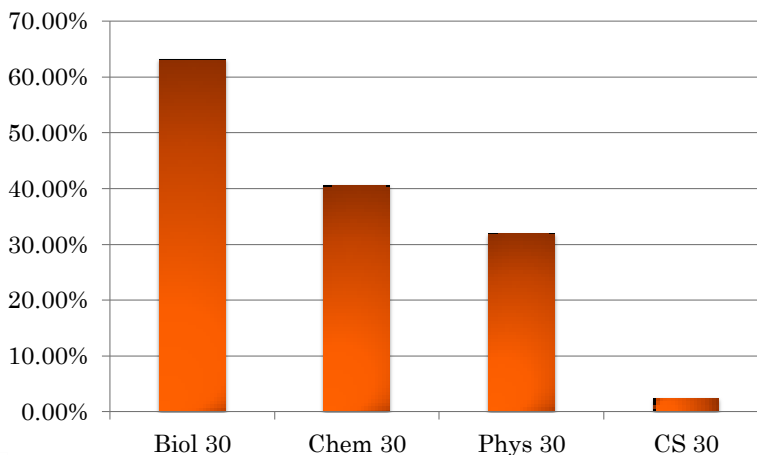
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## FOCUS ON SASKATCHEWAN

**Percentage of Gr. 12 Students by Subject**



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## IDEAS/FEEDBACK

- Get HS students on university campuses
- Teachers need free resources they can use (Greenfoot: expensive textbook)
- Promote common K-12 curriculum, standard resources
- CS Methods courses (ECS): dev. teachers & certifications
- Work to get CS speakers and sessions at other teacher conferences (ACM Distinguished Speaker program?)



## REQUESTS / RECOMMENDATIONS

1. Chairs support for a CSTA-like organization in every province – create CSTA liaison, consider CSTA membership
2. Encourage CCICT, ICTC, ITAC, CIPS to make K-12 CS education a strategic priority
3. Create a Canadian CS Education Week that works better for Canadian timeframe and theme
  - Proposed early Feb, 2013 / Cdn CS Champion theme
4. Budget for up to \$12,000 to support Outreach committee efforts in 2012-13
  - Committee meeting at SIGITE 2012 – Oct 11-13, Calgary
  - Cdn CS Ed Week efforts / advertising



## DISCUSSION



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## WHY ARE SO FEW STUDENTS INTERESTED IN CS / BARRIERS TO CS EDUCATION

- **Misunderstanding** - parents, teachers think our children know about CS because they are more knowledgeable about using tech
- **Culture** – Canadians are not predisposed to high tech jobs – many do not feel we are able to build high tech companies
- **Learning with ICT** - Great! Use of ICT in domains - OK!  
Building ICT/CS - very little done
- **Tech. Ed.** – What CS is taught is done so in Tech. Ed courses
- **Lack of CS human resources** – teachers no little about ICT/CS
- **Lack of CS curriculum** in most provinces
- **Poor math skills** – students opt out of math in grade 9; not needed for other high paying professions (health care, law, psych)
- **Peer pressure** - not cool to run with with geeky group
- **Women and IT special challenges** – culture, greater peer pressure to conform

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