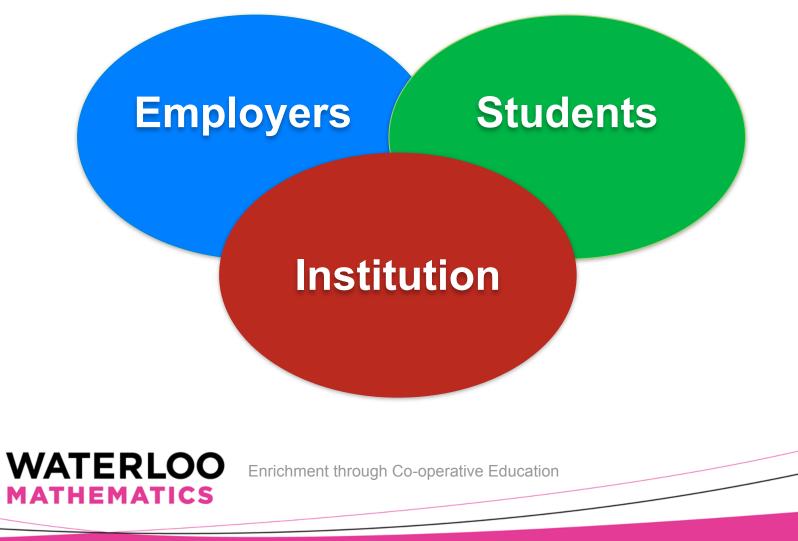
## Enriching Undergraduate Learning through Co-operative Education

#### WATERLOO MATHEMATICS

www.math.uwaterloo.ca

Arnie Dyck, Associate Dean, Co-operative Studies, Faculty of Mathematics

# **Co-op: Three-way Partnership**



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### **Role of Partners**

#### Institutions

Ensure sufficient and appropriate "learning" opportunities available

Monitor student progress

#### **Employers**

Pay commensurate salaries

Supervise, mentor and evaluate students

#### **Students**

Engage in process to obtain productive, paid work



## $S_1 \hspace{0.1cm} S_2 \hspace{0.1cm} W_1 \hspace{0.1cm} S_3 \hspace{0.1cm} W_2 \hspace{0.1cm} S_4 \hspace{0.1cm} W_3 \hspace{0.1cm} S_5 \hspace{0.1cm} W_4 \hspace{0.1cm} S_6 \hspace{0.1cm} W_5 \hspace{0.1cm} S_7 \hspace{0.1cm} W_6 \hspace{0.1cm} S_8 \hspace{0.1cm}$

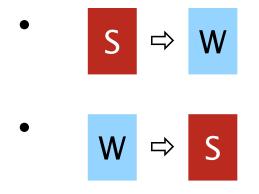
Alternating sequence

Chance to go through the cycle of learning and applying many times



$$S_1 \hspace{0.1cm} S_2 \hspace{0.1cm} W_1 \hspace{0.1cm} S_3 \hspace{0.1cm} W_2 \hspace{0.1cm} S_4 \hspace{0.1cm} W_3 \hspace{0.1cm} S_5 \hspace{0.1cm} W_4 \hspace{0.1cm} S_6 \hspace{0.1cm} W_5 \hspace{0.1cm} S_7 \hspace{0.1cm} W_6 \hspace{0.1cm} S_8$$

#### Transferable experiences





$$S_1$$
  $S_2$   $W_1$   $S_3$   $W_2$   $S_4$   $W_3$   $S_5$   $W_4$   $S_6$   $W_5$   $S_7$   $W_6$   $S_8$ 

Normal number of study terms 16-24 months of paid work experience Graduate in 4<sup>2</sup>/<sub>3</sub> years



$$S_1$$
  $S_2$   $S_1$   $S_3$   $S_2$   $S_4$   $S_3$   $S_5$   $S_4$   $S_6$   $S_6$   $S_7$   $S_7$   $S_6$   $S_8$ 

Multiple opportunities with different employers, industries, sectors Increasing level of expertise Varying degree of job responsibility



## How does co-op work?

Week of Term	Activities
1 - 2	Return to campus interviews; work report submissions; finalize students returning/ employment opportunities
3 - 4	Job postings for main match
4 - 7	Employer interviews
8	Match occurs; students & employers consolidate options
9 - 14	Second round: twice weekly posting/interview/ranking
15 - 17	Unemployed students distributes among field coordinators Field coordinators explore one-on-one matches
1 <sup>st</sup> month of work	Employment matches continue on individual basis

WATERLOO Enrichment through Co-operative Education MATHEMATICS

### **Students: Challenges**

- Learning how to play the co-op game
- Balancing academic and co-op work load
- Securing employment in early years
- Higher tuition fees
- Transitioning every 4 months



### **Employer: Experiences**

- + Accessing bright, young student minds with new ideas, fresh perspectives/enthusiasm
- + Mentoring future employees/colleagues
- + Reducing future recruiting costs and risks
- + Creating bridges with academic institutions
- Recruiting/administrative costs
- Attracting senior students



## Institution: Improved Quality

- + Well-motivated, superior applicants
- + Enhanced visibility/reputation
- + Enriched campus community
- + Improved curriculum/relevance
- + Well-qualified prepared graduates
- + Improved real-world connections



## **Institution: Challenges**

- Balancing patterns of supply and demand
- Securing sufficient/relevant employment
- Optimizing employer/student matches
- Increased teaching costs



#### Student: Quote

" I was part of the iPhone display team. I wasn't there to observe. I had real responsibilities and was an integral part of the team—and I got a job offer for when I graduate!"

Taif, 4<sup>th</sup> year CS



#### **Student: Quote**

" Co-op gave me the opportunity to develop a strategy for creating new challenges for each new work term. I progressed from quality control to fixing bugs to programming. Next term I'm excited about moving up to a job as a program manager."

Jason, 3rd year



### Student: Quote

" Co-op is one of the reasons I came to Waterloo. Back home you don't work until you've finished school, and then you take an entry-level job because no one has work experience. I hope my work terms will give me an edge, and I will stand out from the others because I've had jobs."

Hayden, International Student



### Institution: Quote

" I tell the students to look at co-op as a fourmonth job interview. For the employer it's a chance to try before you buy."

> Peggy Jarvie, Director, Co-operative Education & Career Services



#### **Employer: Quote**

"The co-op students aren't green. They know the professional jargon and they know what they're doing."

John, Employer Recruiter



#### Resources

World wide: World Association for Cooperative Education, Inc. (WACE) <u>http://</u> www.waceinc.org/

USA: Co-operative Education Association (CEIA) <u>http://www.ceiainc.org/home.asp</u> Canada: Canadian Association for Cooperative Education (CAFCE) <u>http://</u> www.cafce.ca/



#### Resources

Texas A&M <u>http://careercenter.tamu.edu/</u> guides/coop/

Northeastern University: <u>http://</u> <u>www.northeastern.edu/experiential-</u> <u>learning/coop/</u>

University of Waterloo http://www.cecs.uwaterloo.ca/



### **Questions?**

## **Contact Information**

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