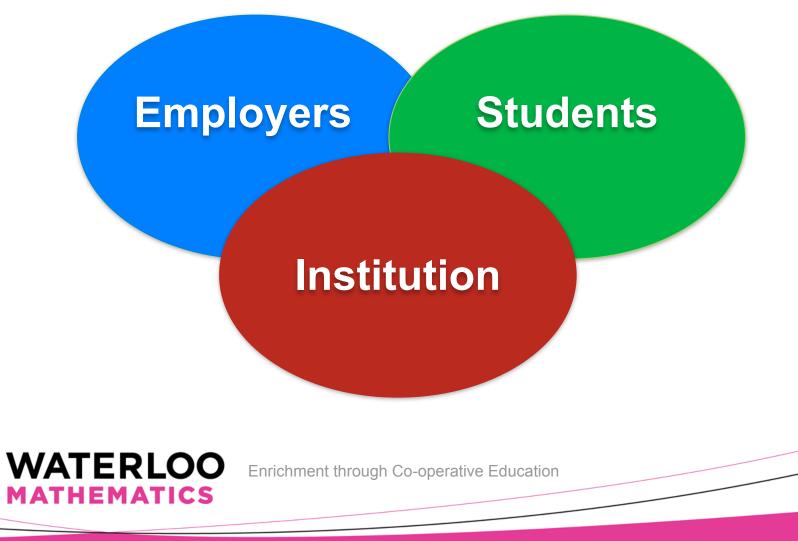
Enriching Undergraduate Learning through Co-operative Education

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



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

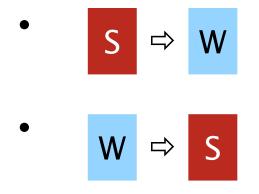
Alternating sequence

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 4²/₃ 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 st 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, 4th 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?

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