



Industry Advisory Board Meeting

CIFE Industry Advisory Board Meeting

- 8:00 – Continental Breakfast --
- 8:30 Welcome, Introductions, Overview of IAB
- 8:50 CIFE Updates – Research, Education, Events, Financials
Questions for the Membership
- 10:00 -- Break – VR Demo
- 10:15 Member updates
Compilation of Potential Topics for CIFE
- 12:15 -- Lunch -- VR Demo
- 1:15 Discussion & Prioritization of Topics
- 1:45 Breakout Groups to Determine Research & Education Objectives and Targets for the High-priority Topics
- 2:45 -- Break --
- 3:00 Reports from Breakout Groups and Discussion
- 4:00 Final IAB Input on the High-priority Topics (Breakout Groups)
- 4:40 Review of IAB Questions
- 5:00 Adjourn
- 6:00 – No-host Dinner --



Demo - VR interaction experiences

- ❑ Distributed Collaborative Walkthrough and Troubleshooting
 - ❑ Experience building with team members and client
- ❑ Measure
- ❑ Mark up problem components
- ❑ Simulate daylight to detect glare
- ❑ Take a picture from any location

- ❑ Hardware:
 - ❑ Oculus Rift
 - ❑ HTC VIVE
 - ❑ MS MR Acer

<http://pbl.stanford.edu>



Questions for the IAB

- What are the highest priority areas for research for the CIFE community?
- In addition to research, should CIFE lead educational experiences? If so, for what and for whom?
- How many executives would you like to send to the 1-week custom executive program with the GSB in 2019 and 2020?



CIFE update

- Member companies
- Money
- People
- Projects
- Events



Currently 51 CIFE Members: Changes since last IAB

NEW MEMBERS

Aeoshape (Small Business)	Suffolk Construction Company (Member)
Alice Technologies (Small Business)	Trimble (Technology Member)
Ananda Development (Member)	Tyréns AB (Member)
BKW Antec Group (Member)	
Goldbeck (Member)	
Google (Contributor)	
JLL (Associate)	
Permasteelisa Group (Member)	
Quartz Robotics (Small Business)	
Refine Projects AG (Small Business)	
Ryan Companies (Member)	



DROPPED MEMBERSHIP

Aconex

Allegion

Allplan GmbH

Apple, Inc.

Building and Construction Authority

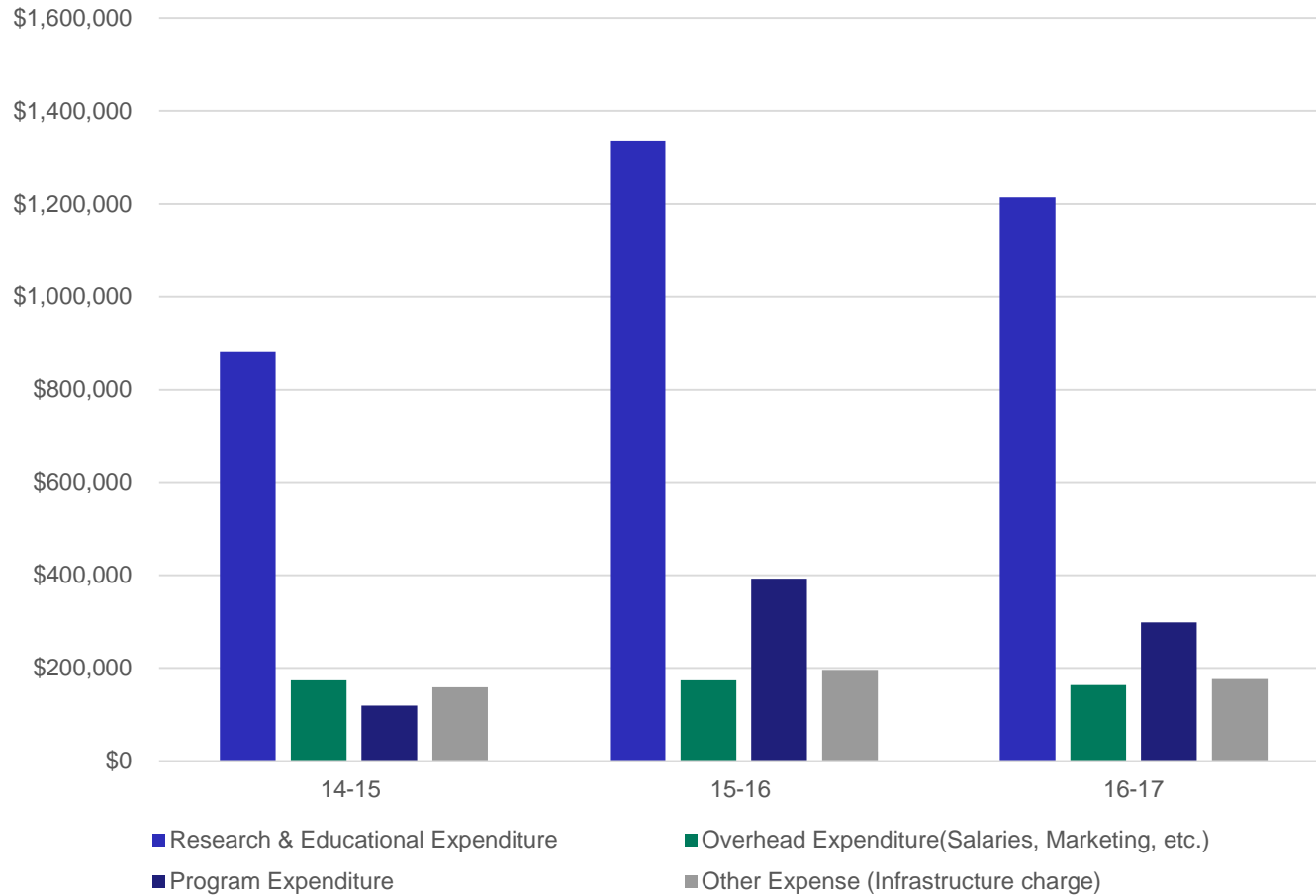
HOK Group, Inc.

Max Bögl

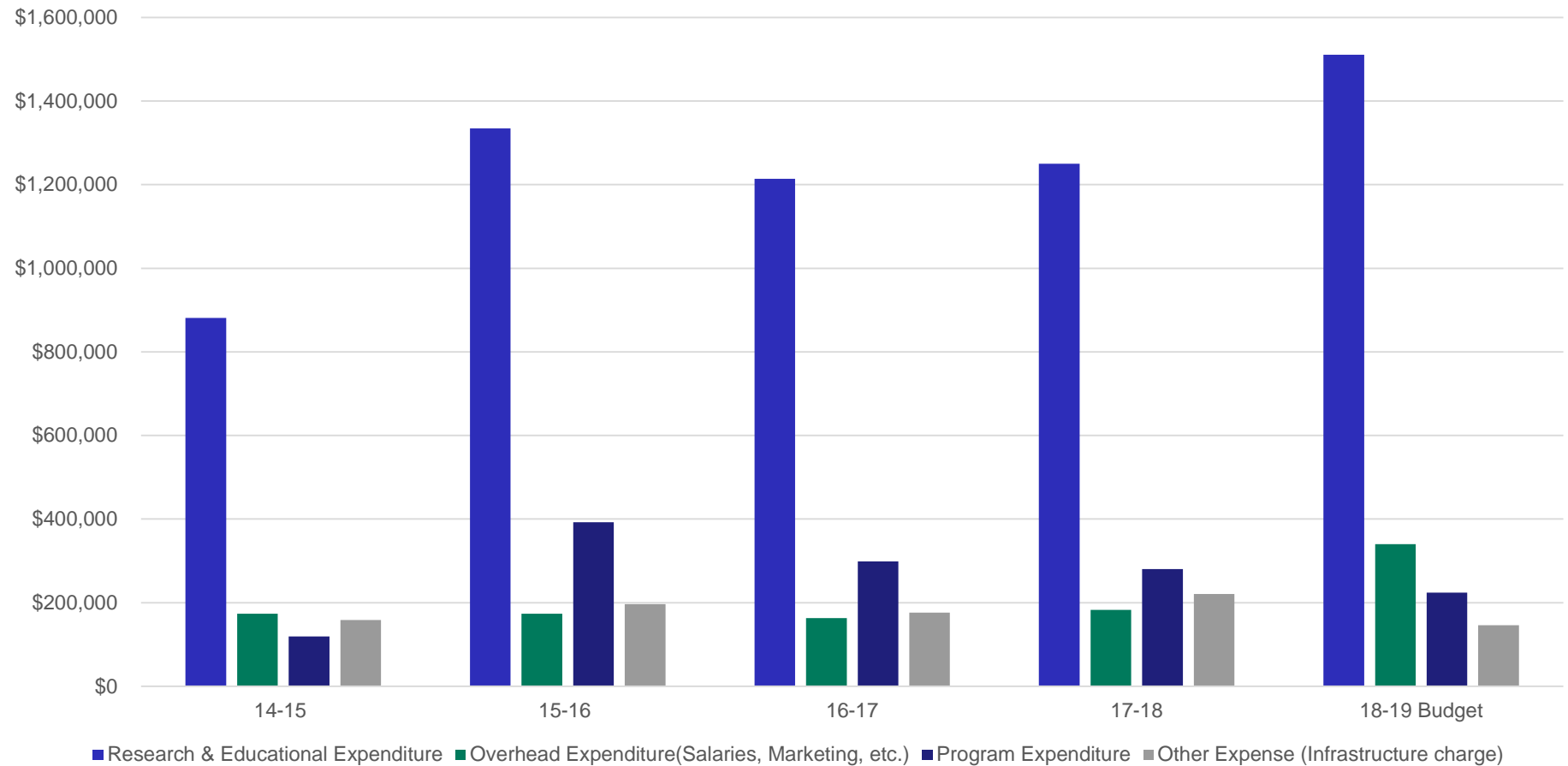
Rhumbix



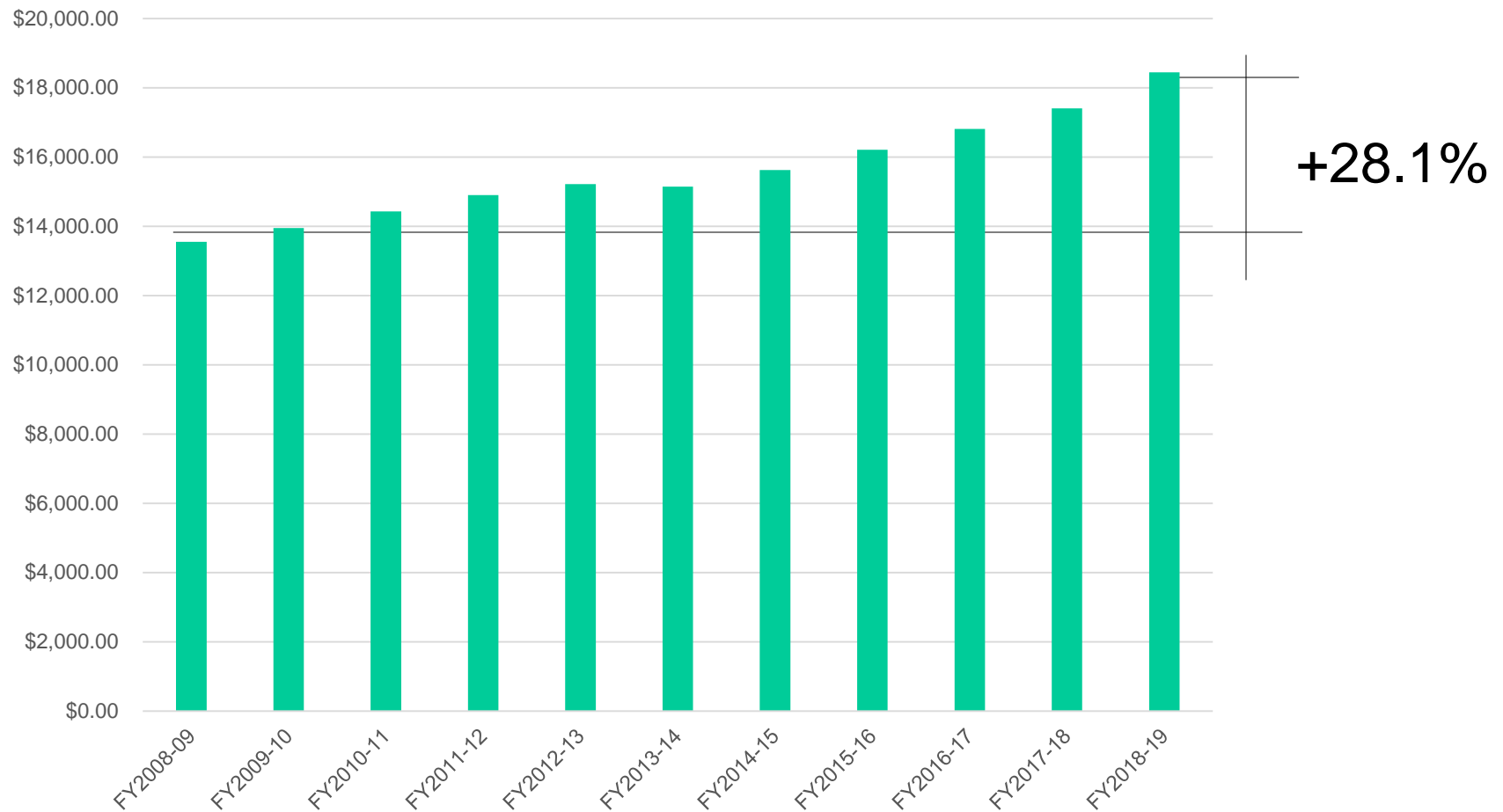
CIFE is doing fine financially: Income



CIFE spends as much money as possible on research



Cost of a Graduate Research Assistant per Quarter



Adjunct Professors & Visiting Scholars

Adjunct Professors

- Vladimir Bazjanac
- Calvin Kam (SBI)
- Jerker Lessing (BoKlok)
- William McDonough
- Ben Schwegler
- Patrick Shiel (Verteco)

Lecturers

- Danish Kurani
- René Morkos (ALICE)
- Dimitris Farmakis (ALICE)

Visiting Scholars

- Max Schütz (Max Bögl/Autodesk)
- Roger West (Trinity College)



Stanford Student Visiting Scholars & Interns

Chenyao Yu (Autodesk)

Haiyin Wang (Autodesk)

Filippo Ranalli (WDI, Autodesk)

Forest Peterson (Cadwork)

Cynthia Brosque (DPR)

Yujin Lee (DPR)

Jacqueline Lo (Glodon)

Jung In Kim, postdoc (Hansung)

Bo Peng (WDI)

Sergio Tarantino (WDI)

Ashwin Agrawal (Louis Berger)

Tulika Majumdar (Skanska)

Alissa Cooperman (Gilead)

Yujin Lee (DPR)

Bo Peng (Permasteelisa)

Plus many summer interns



2017-18 CIFE Seed Projects

- Community Investment: Improving Feedback Loops in Project Delivery with Participatory Technology - R. Levitt
- Generating Bills of Materials for Daily Work Orders Consisting of Made-to-Stock Materials - M. Fischer
- Early-phase Rapid Evaluation of Prefabrication Alternatives for Building Structures - M. Fischer
- Using UAVs for Automated BIM-based Construction Progress Monitoring and Quality Control - S. Savarese, M. Fischer
- DUES: Data-driven Urban Energy Simulation - R. Jain
- Robust Design of Natural Ventilation Systems - C. Gorké, S. Lall
- Automated Facility Modeling for Simplified Energy Performance Simulation - S. Savarese, M. Fischer
- Dynamically Extending Look-Ahead Windows with a Particular Focus on Value-Adding Activities - M. Fischer



2018-19 CIFE Seed Projects

- Edge Computing Hardware for Smart Buildings - B. Murmann
- Any time Data Thinking Prototype for Construction Project Managers - M. Fischer, R. Rajagopal
- A Framework for Dynamically Updating Building Information Models using Mobile Robots and Computer Vision - K. Law
- Robust Design and Operation of Natural Ventilation Systems - C. Gorlé , M. Fischer
- CryptoBIM: Blockchain-Enabled and Cryptographic Building Information Modeling - M. Fischer, M. Lepech
- Assessment and Reduction of the Risks Inherent in Performance Based Contracting by Use of CIFE's Automated Building Energy Model Generator - C. Gorlé , M. Fischer



2018-19 CIFE Seed Projects, continued

- Comparing Different Delivery Methods of Contextual Work Instructions for Construction Laborers - M. Fischer
- Robotics Evaluation Framework - M. Fischer
- A Multidisciplinary Method to Optimize and Automate the Structural and Connection Design of Large-Scale Steel Structures - M. Fischer, E. Miranda, R. Rajagopal
- Operating LOD400-based Daily Bill of Materials through the Plan-Do-Check-Act Cycle - M. Fischer



2018-19 CIFE Visiting Scholar Projects

- Loops – Multi-scale BIM-based Construction Planning and Management (Autodesk, Max Bögl, Mortenson, DPR)
- BIM to FM (Gilead)
- Multi-criteria structural steel optimization (Autodesk, WDI)
- Automated road inspection (Louis Berger)
- Managing with client objectives and improving the design-construction interface (Skanska)
- Performance-based contracting (WDI)
- Supply chain management for prefab (DPR)
- Smart façade system (Permasteelisa)



The Business Perspective

“Automated execution of processes changes everything.”

(Alan Perlis, 1961)

The Scientific Perspective

“Science is knowledge which we understand so well that we can teach it to a computer; and if we don't fully understand something, it is an art to deal with it. Since the notion of an algorithm or a computer program provides us with an extremely useful test for the depth of our knowledge about any given subject, the process of going from an art to a science means that we learn how to automate something.”

(Donald Knuth, Computer Programming as an Art, CACM, Dec. 1974)

VDC Program

- VDC 1.0
- Online
- VDC 2.0
- PPM



CIFE Events in 2018

- Industrialized Construction Forum, February
- BIM Conference in the Middle East, April
- Technical Advisory Committee, May
- Summer Program, September



Proposed CIFE Calendar 2019

EVENTS

DATES

Industrialized Construction Forum

February 21

Call for Seed Proposals

March 5

Proposals Due

May 14

Technical Advisory Committee

May 21

Summer Program

Sept. 17-18

Industry Advisory Board

Nov. 7

VR/AR/MR Symposium

Joint with DBL



SAMPLE LEADERSHIP PROGRAM

STANFORD
BUSINESS
SCHOOL
OF
LEADERSHIP
Executive Education

DPR STRATEGIC LEADERSHIP PROGRAM
January 28 - February 2, 2018



	SUN, JAN 28	MON, JAN 29	TUE, JAN 30	WED, JAN 31	THU, FEB 1	FRI, FEB 2	
6:00 - 6:45 am		Optional Morning Exercise	Optional Morning Exercise	Optional Morning Exercise	Optional Morning Exercise	Optional Morning Exercise	
7:00 - 8:00 am		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	
8:00 - 9:20 am		Strategic Leadership: Why It Matters - A Perspective Burgelman	Managing Project Supply Chains I Lee	Design Thinking Soule	Uncovering Our Hidden Assumptions About How to Enhance Organizational Performance Pfeffer	Designing your Organization for Agility Levitt	
9:20 - 9:40 am		Break	Break	Break	Break	Break	
9:40 - 11:00 am		Strategic Leadership: Why It Matters - Analytical Tools Burgelman	Managing Project Supply Chains II Lee	Design Thinking Soule	Overcoming the Knowing-Doing Gap Pfeffer	Strategic Leadership of Corporate Innovation Burgelman, Fischer	
11:00 - 11:20 am		Break	Break and group photo	Break	Break	Break	
11:20 am - 12:40 pm		Dynamic Forces driving Firm Evolution – The Strategy Diamond Burgelman	Data Thinking for Construction Rajagopal	Connecting the Customer Brand to the Talent Brand Rao	Strategic Cooperation vs. Competition Burgelman, Fischer	Designs for Corporate Entrepreneurship in Established Firms Burgelman, Fischer	
12:40 - 2:00 pm		Check-in Schwab Residential Center 12:00pm-4:00pm	Lunch	Lunch	Lunch	Lunch	Lunch
2:00 - 3:20 pm		Optional Campus Tour (4:00 - 8:00 pm)	Virtual Design and Construction Fischer	Thinking Inside the Box Levav	Scaling Up Excellence Rao	Optimization and Data-Driven Decision Making Fischer	Building Strategic Leadership Capability: What Did We Learn? Burgelman
3:20 - 3:40 pm			Break	Break	Break	Break	
3:40 - 5:00 pm		Project/Case	Project/Case	Project/Case	Project/Case		
5:45 - 6:15 pm	Opening Reception	Reception	Dinner - Stanford Stadium (6:45 - 7:30 pm)	Reception			
6:15 - 7:30 pm	Welcome Dinner	Dinner			Dinner - Fogarty Winery (8:00 - 8:00 pm)		
7:30 - 8:00 pm							

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Member Updates

- Recent
- Ongoing
- Upcoming
- CIFE-related initiatives

- Research topics

