## ONLINE REPORTING Processes and Lessons Learned



# outlier

RESEARCH & EVALUATION CEMSE | UNIVERSITY OF CHICAGO

• What is an online report?

- What is an online report?
- Lessons learned from creating online reports

   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money

- What is an online report?
- Lessons learned from creating online reports

   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?

- What is an online report?
- Lessons learned from creating online reports

   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users

- What is an online report?
- Lessons learned from creating online reports

   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users
- Online reporting & you!



- What is an online report?
- Lessons learned from creating online reports

   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users
- Online reporting & you!

Computer Science Research > OS4CS Home

### BUILDING AN OPERATING SYSTEM FOR Computer Science Education

Landscape Study

**Teacher Capacity Study** 

Stories from the Field

CS in Schools Study

Design Studio

Five Challenges and Call to Action

### **TEACHERS**

The goal of this study was to identify the most significant supports and barriers that CS teachers and principals perceive most affect CS education in their schools. We also sought to understand practitioners' opinions about the qualities they felt CS teachers needed to have; steps that needed to be taken to move CS forward' and their visions for CS in the future. In order to answer these questions, we interviewed 19 teachers and 8 principals (see description of sample).

This study complements the Teacher Capacity Study in that both examine teachers' current contexts, capacities and needs. The Teacher Capacity Study did so through the administration of a questionnaire. This study examines these issues more in-depth and provides rich descriptions, in practitioners' own words.

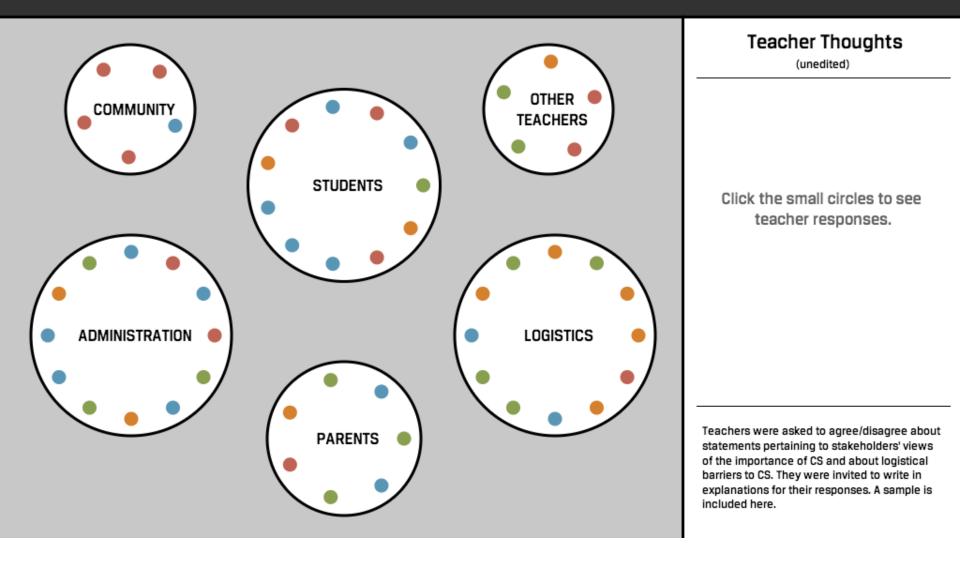


#### CHALLENGES

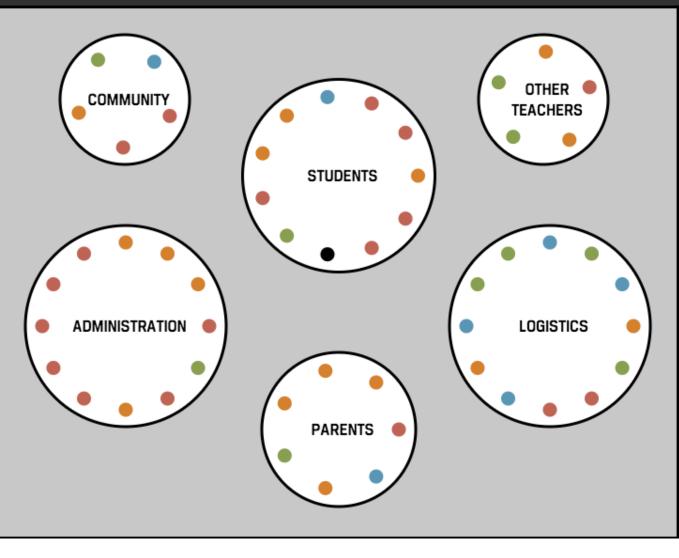
Open all sections / Close all sections

- Computer science teachers feel isolated.
- Computer science teachers feel that they lack sufficient instructional materials.
- Computer science teachers perceive that computer science isn't understood or valued as a rigorous discipline.
- Computer science teachers perceive that because CS is low priority it receives fewer resources.
- Computer science teachers are scarce.
- **Close section**

### **Teacher Thoughts on CS Stakeholders**



### **Teacher Thoughts on CS Stakeholders**



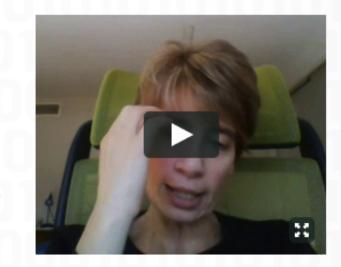
Teacher Thoughts

(unedited)

Majority of students see CS as something difficult and don't want to enroll in any elective classes that require effort

Teachers were asked to agree/disagree about statements pertaining to stakeholders' views of the importance of CS and about logistical barriers to CS. They were invited to write in explanations for their responses. A sample is included here. Lucia remembers how this drive and commitment helped them preserve:

When the second one was not funded, we grouped with the bad news around the table at Northside College Prep and we said "can we make a pact that this is too important to wait for someone in Washington to bless us? And can we just make it happen." We were determined after this second proposal was not funded to make it up somehow.



Lucia also cautions that you need a coalition of diverse stakeholders:

It is very important to have a champion of your cause. One person that is in your team, in your core, committed, that's not going say "this could be a solution, but I don't know..." Someone that really gets it. Unfortunately that's not enough, so I think you want to try to diversify and have contacts at different levels in the district.





# How many of you have developed an online report like this?

How many of you have seen an online report like this?

- What is an online report?
- Lessons learned from creating online reports

   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users
- Online reporting & you!



## ONLINE REPORTS... require teamwork

### University of Chicago Research Team

















### University of Chicago Research Team















### Visual.ly





### University of Chicago Research Team















### Visual.ly





## Designers & Web Team









asana:		* ACM Computer Science	Share নি 🗸	,
Q Search	~	Other		
■ RESEARCH & EVALUATI ~	<			
My Tasks		<sup>1</sup> <sup>2</sup> <sub>3</sub> Sort V Filter V	New V Archive V	,
Inbox	=			
OSLN	$\star$	Overall Project Management:		
CEMSE R&E Admin	÷	4 Monthly reports drafted	Wednesday >	
ACM Computer Science	*	5 Baker: Compile hours worked	Tomorrow 🗵 >	
Data Visualization	*	6 Baker: Submit Baker's Hours for ESP	Thursday 🙁 >	
S3	$\star$	Communication and Coordination:		
Purple Asparagus Evaluation	*	8 Submit CSTA Voice Article for Jan 2014 Issue	Nov 10	
Development	*			
Web Development: ACM Project	*	9 Send Status Reports to Cameron	Today 🛞 🗦	
Web Development: S3	*	10 Solicit Feedback on Design Studio Report from Attendees prior to announ	C&C Today >	
Graphic Design	*	AEA Presentation:		
LEAD CSI Evaluation	*	12 Plan AEA presentation	Oct 19	
Web Development: R&E Team	*			
CS10K	*	Create handout	Oct 9 🔇	
Show more		14 Rand review AEA presentation slide deck < Plan AEA presentation	Today >	
🥑 CE CC GV 🌆 🎑 KB 🊳	1	Other Presentations:		
PROJECTS +		September 25th Webinar:		
CEMSE R&E Admin		Design Studios:		
OSLN		18 Grant Report for NSF design stud	dios Oct 7 🙁 >	
ACM Computer Science		Framing/Concluding Documents:		
Websites				
School Health and Wellness Devel		Other Policy/Support Tasks:		
Data Visualization				

## ONLINE REPORTS... are powerful and dynamic

#### CHALLENGES

Lack of sustainability: Gray explained that once funding of a program ends, the program can be in danger of ending. He said that it can be a challenge to involve teachers in the program in a consistent way.

Gray on sustainability:

Sustainability has always been the challenge. And then just finding the kind of teacher you need who has that excitement and passion as well and doing it for the right reasons. That's been the main challenges. It's kind of frustrating when you know that we can only do this two or three times per session, so we do it for two years, and we hope the teacher will take over, but if they're back grading papers and not paying attention and we have no mechanism to bring them up and engage them, that's the main challenge.



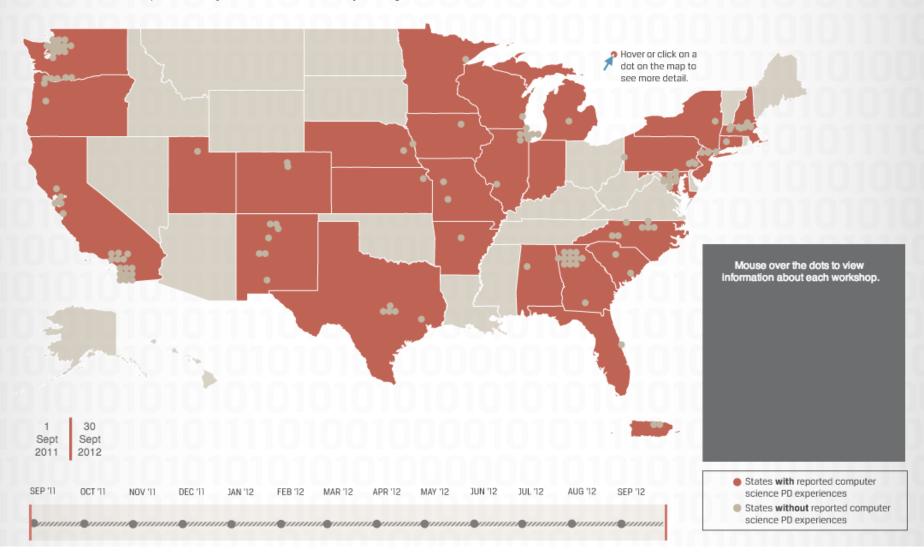


000					Asse	t Ma	ap Data 11	-7-12.xlsx								
	) 🗶 🔓 🕻	5 🖋 🖾 • 🖾 •	Σ·23·7	F.	50	%	- 0								9	🕶 Sea
Calibri (Body)       I2       B       I       U       E       I $\land$ $\land$ $\circ$ <th< th=""></th<>																
A Home Layo	ut Tables	Charts SmartAr	rt Formulas	5 Data	Review											
Edit		Font		Alignment		-	N	umber			Fo	rmat				Cells
🗎 📮 🛃 Fill 🔻	Calibri (Body)	• 12 • A• A•		abc 🔻 🖥	💫 Wrap Text	Ŧ	General		•			Vormal			<b>G</b> -	
							<b>2</b> - 0/	• 0.0 0.0	0 0	≦ ≤ anditiona		3ad			Ě.	H
Paste 🥥 Clear 🔻	BIU			¢ 2	Merge	* I	<b>*</b> %	°, 0	e Fo	ormatting		bau			Insert	Delete
A67 ‡		:														
A B C	D E F C	G H I J yr email pd_multi pd_title pd_org	K L M pd_fund pd_ipaid1	N O pd [paid2 pd [credit pd		S pd_loth2		V W X inv pd_p1fnar.pd_p1inar.pd		Z AA p2fnar pd_p2ina			AE AF			Al Aj p3fnar pd_p3inar
2 8/29/2012 8/29/2012 Laurie 3 8/29/2012 8/29/2013 Dan	Boeding Trident Te Departme Lewis Santa Clar Associate	10 laurie.boe 2 Computer Trident Techr 37 diewis@sc 2 NSF Explor Santa Clara U	ical College Google CS 2		1 2	textbooks		ntact information of participants			Santa Clar, Ruth		Santa Clara Universi			
4 8/30/2012 8/30/2012 Emmanuel	Schanzer Bootstrap Director	6 scharzer@ 1 Bootstrap: Bootstrap	Funding vi 2	1		All partici	p 2 Schools an	1 Emmanuel Schanzer Bo	otstrap		Carrier State (red)		and a second second second			
5 8/30/2012 8/30/2012 Duncan 6 8/23/2012 9/2/2012 Helene	Buell U of South Professor Martin University Lecturer	12 buell@acr 2 AP Summe Dept of Comp 1 In@cs.wat 1 CS4HS Wa University of			2 2 4 Clock hout 1	classroom	2 This is an i 2 Participati	1 Duncan Buell De	pt of Comp !	Sci and E						
7 9/5/2012 9/5/2012 Chris	Stephenod CSTA Executive	8 cstephens 1 Computer Computer Sci	ence Teachers Corporate 2	2	2		1	6		1000	Mallands and	Tanana	Martine days 1945			
8 9/5/2012 9/5/2012 Nathan 9 9/6/2012 9/6/2012 Krishnendu	White McKendre Instructor Roy Valdosta S Assistant R	5 nawhite@ 2 CSHS McKendree U 3 kroy@valc 2 Valdosts C Valdosts Stat	e University Google CS 1	100 1	2	printed m	2 Advice fro 2 Teachers r	2 1 Krishnend Ray Va	idosta State		McKendre Julie	Tonsing-M	McKendree Univers	wey		
10 9/6/2012 9/6/2012 Apama 11 9/6/2012 9/6/2012 Patricia	Mahadev Worcester Professor Morreale Kean Univ Associate	13 Aparna.M. 1 ICCCF - Inc Worcester St. 6 pmorreal( 2 CS4HS Wo Department of		2		Classroom		2	Apa Jud		Worcester Karl Kean University	Wurst	Worcester State Un	iversity		
12 9/6/2012 9/6/2012 Tammy	Pirmann CSTA-Phill Vice Presid	7 tpirmann( 1 Summer V CSTA membe	n CSTA and 2	2	1	classroom	2 Workshop	2			Springfield Jean	Griffin	University of Penns			
13 9/11/2012 9/11/2013 Gall 14 9/14/2012 9/14/2013 Ci	Chapman UCLA Director of Chung Lawrence Professor	4 chapgali@ 2 Exploring (University of 14 chung@LT 1 RoboMath Lawrence Tec		\$200/day- 2	2	Exploring	2 Robofest t	3	c	Chung	Lawrence Chris	Cartwright	Gail Lawrence Tech Unit	Chapman V	UCLA Joa	nna Goode
15 9/14/2012 9/14/2012 Ben	Schafer University Associate	12 schafer@c 2 CS4H5 - Sc University of	Northern Iowa Google 2	1		Classroom		4								
16 9/14/2013 9/14/2013 Stephen 17 9/14/2013 9/14/2013 Michael	Bloch Adelphi Ul Associated Enlingen Harvey Mi Professor	18 sbloch@ad 2 Program 8 Adelphi Unive 31 mike@cs.f 1 MyCS - Mi Harvey Mudd	College Compi Self,Googi 1	500 1		Printed te All materi		2	Zac	hary Dodds	Harvey Mudd Co	lege Computer	Science			
18 9/14/2012 9/14/2012 Suzanne 19 9/14/2012 9/14/2013 Alicia	Buchele Southwest Associate Washingto Howard U Associate	14 bucheles@ 2 Summer V Southwestern 6 a_n_wash 1 Exploring (Howard Univ		\$100/day: 2 30 per ho. 2		Books (2) cutticulus		1 Suzanne Buchele So	uthwestern	University				_		
20 9/14/2013 9/14/2013 Tim	DeClue Southwest Professor	27 tdeclue@1 2 CS4H5 Wo Southwest Ba	ptist University Google 1	200 1	1 1	Classroom	n 2 Local scho	4								
21 9/14/2013 9/14/2013 Loti 22 9/14/2013 9/14/2013 Deborah	Pollock University Professor, Bolovert University Executive	20 pollock@u 1 Partner4C University of 11 deborah.b 1 IT Problem University of		2075 2		classroom Faculty re		6				_				
2.3 9/14/2012 9/15/2012 Helen	Hu Westmine Associate	9 hhu@wes 2 Exploring (Utah State Of	fice of Educatic Utah State 2	2		Utah Stat		2		en Hu	Westmine Jay		Brigham Young Unit	versity		
24 9/15/2013 9/15/2013 CI# 25 9/17/2013 9/17/2013 Beth	Kussmaul Muhlenbe Associate Simon University Faculty an	10 kussmaul) 2 Process Di Muhlenberg ( 7 bsimon@c 2 COMPASS San Diego Su;		1000 2	1	Clickers fo	a 3 Meeting a	1 Beth Simon Ur		alifornia, San Die	Springfield Town	enip High Schoo				
26 9/18/2012 9/18/2012 Bob 27 9/20/2012 9/20/2012 Bradiev	Houghton Western C Associate Beth The Unive Research I	20 houghton: 1 a semeste School of Tea 3 bbeth@cs 1 Project In The Universit	ching and Lean university 2	1		they do n software,	c 1	1 Bob Houghton Sc	hool of Tead	hing and Learnin)	g, Western Carolin	a University				
28 9/20/2013 9/20/2013 Helene	Martin University Lecturer	1 In@cs.wat 1 AP Compu University of	Washington Co Private do 2	1	4 Clock hour 1	access to	2 Seattle Pu	2	Stu	art Reges	University of Wa	shington				
29 9/21/2013 9/21/2013 Chris 30 9/22/2013 9/22/2013 Pierre	Brooks TechStart Board met Bierre AlgoGeom Founder, 0	7 chris@chr Algorithm SuperQue TechStart Edu 4 pierre@Al 1 Algorithm AlgoGeom.or		2		Classroom classroom	n 3 Teacher in 2 School die	6 Dierre Al	goGeom.org			_				
31 9/22/2012 9/22/2012 Michael	Braun railnier be computer	2 mebrauni 1 microsoft microsoft res	earch seattle pu 2	1		students		5				_				
32 9/22/2013 9/22/2013 Jeff 33 9/23/2013 9/23/2013 Fred	Gray University Associate Martin UMass Lov Associate	3 gray@cs.u 1 CS Princip[University of 11 fredm@cs 2 CS4H5 @ University of	Massachusetts Google, Le 2	2	2	at the 201	1 1	1 Jeff Gray Ur 3	niversity of A	labama			Kelly	Powers	Advanced Pad	maja Bandaru
34 9/21/2012 9/24/2012 Harvey 35 9/14/2012 9/25/2012 Barbara	Siy University Associate Ericson Georgia Te Director G	8 hsiy@uno 2 Research ( Department o 14 ericson@c 1 Summer o Georgia Tech		5000 1 800 a wee 2		They get t Classroom		4								
36 9/25/2013 9/25/2013 Christopher	Starr Computer Assoc. Pro	25 starroffice 2 CSHIS College of Ch	arleston Google 2	2	1	Continuin	2 A point pe	6								
37 9/25/2012 9/25/2013 Barbara 38 9/25/2012 9/25/2013 Alfredo	Ericson Georgia Te Director, C Perez Northern E Assistant R	8 ericson@c 1 Advanced Georgia Tech 1 ajpenez@r 2 CT4HS (Co Northern Nev		K00 1		lesson pla Lego Mine		3	Crys	ital Furman	Brookwoo Barba	ira Ericson	Georgia Tech Alfredo	Perez	Northern I Ivan	Lopez
39 9/25/2012 9/25/2012 Naodong	Yue University Associate	8 yee@ucm 1 CS4HS Wo University of	Central Missou Google 1	300 2	2		2 None	4								
40 9/25/2013 9/25/2013 Barbara 41 9/25/2013 9/25/2013 Carl	Ericson Georgia Te Director, C Lyman Utah State Informatic	8 ericson@c 1 Computing Georgia Tech 6 carUyman 1 Utah IT Su Utah State Of		1	1 1 2	lesson pla	a 3 A local tea 3 Ideas for d	4	Gail	Chapman	Luella Higi Barba	ina Ericson	Georgia Tech			
42 9/25/2012 9/25/2012 Arvin 43 9/25/2012 9/25/2012 James	Agah University Professor Cohoon University Professor	15 2 Google CS University of		2		Tutorial o classroom	2 N/A 2 Had discut	1 Arvin Agah Ur	versity of K	875.85						
44 9/25/2012 9/25/2012 Letile	Kern California Program C	3 Kem@csu 2 Computer Cal State Mor	sterey Bay, Har Google CS 1	400 2	1	classroom	a Input from	3					Sathya	Narayana	Cal State 1 Kat	e Lockwoo
45 9/25/2012 9/25/2012 Audrey 46 9/25/2012 9/25/2012 Barbara	Bennett Rensselae Associate Ericson Georgia Te Director, 0	15 bennett@ 2 CS4H5 wo Renselaer Po 8 ericson@c 1 Intermedia Georgia Tech		5800 2 800 1		Art Suppl Classroom		2	Aud	trey Bennett	Rensselae Ron	Eglash	Renaselaer Barbara	Ericson	Georgia Te Ria	Galarics
47 9/26/2012 9/26/2012 Renee	Fall Commony Project Ma	4 rfall@cs.u 1 Coaches C Commonwea	th Alliance for National S 2	1	4 Not acade 1	Classroom	n 2 Schools ar	3					Karen		Indep. STE Cat	
48 9/14/2012 9/26/2012 Dennis 49 9/26/2013 9/26/2013 John	Brylow Marguette Associate Heffernan Williamsbi Tech Teaci	7 brylow@n 2 CS4HS @ [Marquette U 8 johnheffer 2 Elementar Williamsburg	Schools/Hamp State Gran 1	700 2		Classroom Robotics )		5 1 John Heffernan W	Elamsburg S	chools						
50 9/15/2012 9/26/2013 Irene 51 9/26/2013 9/26/2013 Samuel	Lee Santa Felir PI, Project Cho Wake Fore Assistant F	15 kee@santa 1 Project GL Project GUTS 2 choss@wf 1 Wake@Ha Wake Forest		\$25/hour 1 \$150 2		cutticular sample te		6	E.	uel Cho	Wake Fore Paul	Parent	Wake Forest Univer	nity.		
52 9/26/2012 9/26/2013 Margaret	Yau Crafton HI Assistant R	1.5 myau@cts 1 Learning C Crafton Hills (	College Google CS 1	42 2	2	sample te	2 Help with	1 Margaret Yau Cr	aften Hills Co		crasse of the make					
53 9/26/2012 9/26/2012 David 54 9/27/2012 9/27/2012 Kevin	Kratzer Supercom Executive Wang TEALS Founder	23 dhk@lant. 2 Supercom Supercomput 4 knvw@mi 1 TEALS TEALS	ing Challenge Foundatio 1 Microsoft 2	\$500/wee 1	2 1	books, so	f 2 They anno 4 Move CS c	4 Vang TE	ALS							
55 9/27/2012 9/27/2012 Fran	Trees Rutgers Ut Director of	1 fran.trees 1 CS4HS-Rut CS Department	nt, Rutgers Unit Google 1	200 2	2		3 Worked to	2	Fran	n Trees	Rutgers Ut Lans	Sprenpen	Rutgers University			-
56 9/27/2013 9/27/2013 Holly 57 9/14/2013 9/27/2013 Mark	Yanco UMass Lov Professor Guzdial Georgia in Professor	11 holly@cs.c 1 STREAM: UMass Lowel 19 guzdial@c 2 CSLearnin Georgia Tech	NSF throu 2 NSF CE21 2	2	2	PDPs for s	1 1	3					Barbara		UMass Loy Ada Georgia Te Bria	
58 9/27/2013 9/27/2013 Owen 59 9/27/2013 9/27/2013 Dale	Astrachan Duke Univ Professor Reed University Lecturer, 0	24 ola@cs.du 1 Computer College Board		2		classroom This year		3					Lien		College Bo Bro	
60 9/27/2012 9/27/2012 Diane	Baxter UC San Die Education	7 dbaster@ 1 Computing University of	California, San National 5 1	500 Z	1	This year Classroom	n 3 SD County	4						_		
6.1 9/17/2013 9/27/2013 Marie 6.2 9/27/2013 9/27/2013 Barbara	deslardins UMBC Professor Ericson Georgia Te Director, C	11 maried(@v 1 Google CS UMBC 8 ericson@c 1 Web Deve Georgia Tech	Google 2 Operation 2	2		Raffle for Head First		4	Berl	bara Ericson	Georgia Te Barba	ra Fox	Greater Atlanta Chr	ristian School		
63 9/27/2012 9/27/2012 Barbara	Ericson Georgia Te Director, C	8 ericson@c 1 Programm Georgia Tech	Operation 2	1	1 1	Head First	t 3 A local tea	1 Thomas Cooper Th								
64 9/26/2013 9/27/2013 Irene A. 65 9/27/2013 9/27/2013 Irene A.	Lee Supercom President, Lee Santa Fellt Program c	9 lee@sants 1 Supercom Supercomput 15 lee@sants 2 New Mexi Santa Fe Insti		2750 1		curriculur classroom		6								
	Rader Colorado S Teaching F Morelli Trinity Col Professor	12 crader@vr 2 Exploring (Colorado Sch 26 ralph.mon 1 Applitven Trinity Colleg	col of Mines Google 1	200 to 500 2	1	Access to Travel acc	2 Some prin	2					Colorado School of	Mines		
68 9/17/2012 9/28/2012 Dan	Garcia UC Berkele Senior Lec	22 ddgarcia@ 2 The Beaut UC Berkeley	NSF CE21 ( 1	2000 1	1 1	Digital coy		4	CAR	and other	CT Computer Sci	And reachers A				
6.9 9/28/2012 9/28/2012 Manuel 20 9/28/2012 9/28/2012 Barbara	Perez CS @ Virgi Assoc. Pro Eriques Generals To Director (	12 perez@cs. 2 CSHIS Wo Computer Sci 8 etimon@c 1 Programmer General Tech		200 2	1 1	A brock as	1 A local tea	3	Barl	hara Eticana	Generale To Ris	Galance	Stephen Centennial HS	Edwards	CS @ VT Bar	bara Ryder
			is data 🖌 Final 79	cases / She	et2 +											

## The Landscape of **Computer Science**

#### **Professional Development**

Data presented in this map is from a survey administered in September 2012 by CEMSE and UEI at the University of Chicago.



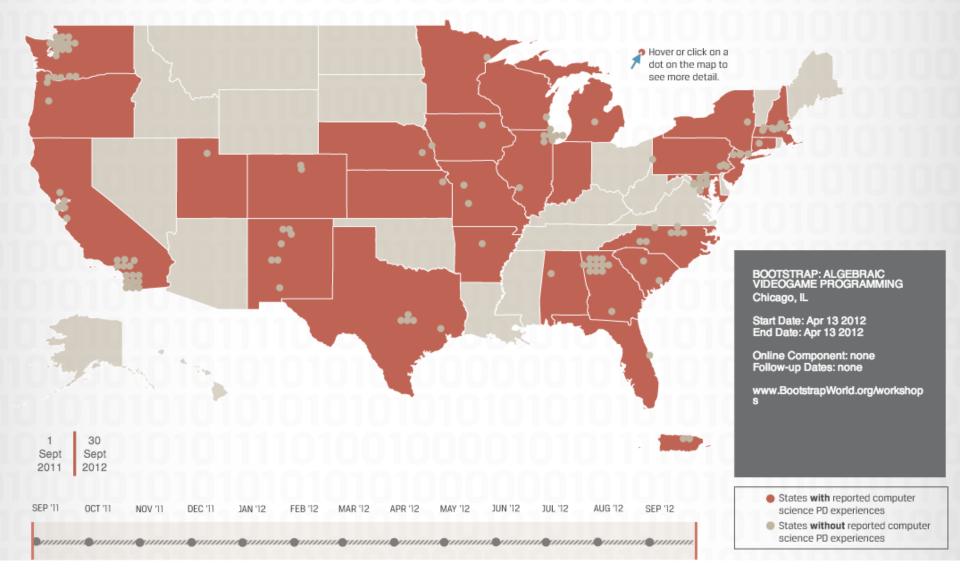
С

Ó O

## The Landscape of **Computer Science**

#### **Professional Development**

Data presented in this map is from a survey administered in September 2012 by CEMSE and UEI at the University of Chicago.



ÓO



## ONLINE REPORTS... require time and money



E

Landscape Study Final Report Outline

Numerous professional development opportunities for computer science teachers exist, however the computing

education is of vital importance to the United States, and the community's engagement on this grand challenge has

computer science courses in 10,000 high schools taught by 10,000 teachers by 2016. Does the nation and education community have the capacity to greatly increase the ranks of computer science teachers, and put rigorous computer

science in places where it currently is not and never has been? If so, where will those teachers come from, and what kinds of professional development and supports do they need? If we are going address the grand challenge of

prepare, develop and support computer science teachers of all levels and advocate for expansion and improvement.

Science Education (CEMSE) are carrying out an 18-month study for the computer science education community to

Identify the current capacity of computer science teachers, potential sources of new computer science teachers and the organizational and institutional steps some have taken to advocate for the broader computer science education

computer science teaching and learning; and (4) Work with PD providers to identify batriers, needs and challenges,

professional development providers, computer science teachers, school leaders, and others involved in computer

http://cemse.uchicago.edu/research-and-evaluation/research/computer-science/. A final report will include a

This project seeks to provide useful, timely information to inform growth of computer science professional

development and computer science education. The project team is committed to working with the computer science

education community to accomplish that goal. To that end, our project team will work with the partnership that ACM has established with the National Science Foundation, Google, the Computer Science Teachers Association, Microsoft, and the National Center for Women and Information Technology to assure our deliverables will be

been spurred on by the National Science Foundation's "CS10K" vision, which seeks to have rigorous academic

growing computer science education across the country, we need to develop a greater understanding of how to

The University of Chicago's Urban Education Institute (UEI) and the Center for Elementary Mathematics and

(1) Understand and document the landscape of current computer science teacher professional development; (2)

effort (3) Understand the professional development and institutional supports for, and barriers to high quality

Over the course of the 18-month study, researchers are using surveys and interviews to collect data from

and define opportunities and develop strategies to grow their professional development efforts.

science education. Findings will be released as they are developed and will be available at:

useful the broader computer science and computer science teaching community.

summary of all findings and recommendations for next steps.

community has little understanding of how these opportunities fit together in a strategic framework for systematically growing the number of teachers and learners of computer science. Expanding computer science

DRAFT - DO NOT DISTRIBUTE

Background:

Study Ouestions:

Data Collection:

-

N

m

4

īn

0

6

00

σ ÷

10

---- Updated 12-19-2012

DRAFT - DO NOT DISTRIBUTE

Updated 12-19-2012

#### Landscape of Professional Development for High School Computer Science Teachers

The "Landscape Study" strand of this work focused on describing the current professional development opportunities that are available for high school computer science teachers. The primary data collection for this strand took place through a survey administered to providers of high school computer science teacher professional development

#### Survey Content

The survey sought to answer the following questions:

Who is providing high school computer science teacher professional development?

#### Who is participating in high school computer science teacher professional development?

The survey asked for information on who was providing the professional development (including the initiators, organizers and leaders) and who was participating in the professional development (e.g. Were the participants primarily computer science teachers? What grade level? Pre-service teachers? In-Service? Fulltime?). The survey also asked for information on the numbers and experience of participants as well as the interests of participants in teacher particular computer science courses.

· Where and when and how is high school computer science teacher professional development taking place?

The survey asked providers to report on the organizational structure of the professional development (e.g. duration, timing) and the delivery structure (e.g. face-to-face, on-line, combination). It also asked substantive questions about the pedagogical approaches the providers used. Other questions focused on the steps that led to the existence of the professional development including who funded it (e.g. federal, state, local, foundation), who initiated and planned it, and how participants were recruited (e.g. professional organizations, local school districts)

- · What is the PD about? Ware the goals of high school computer science professional development and what disciplinary content, and pedagogical content is included?
- What instructional approaches do high school professional development providers use?

#### Sample, Duration and Response Rate

The goal of this survey was to paint as comprehensive a picture as possible of the CS PD landscape. To that end, the research team worked with a range of experts in the field of computer science education to create a list of 129 high school computer science PD providers. The list assureviewed by funders and providers of professional development. and included CE21 (NSF) and CS4HS (Geogle) and others. The team recognized that even with a best effort to create a comprehensive list of high school computer science professional development providers some (especially local/regional) professional development experiences would be overlooked. Therefore, we made the survey link publicly available on the project web site, posted information about the survey on the SIGSCE literary, a CACM blog post, and direct outreach with follow up phone calls. We also encouraged recipients of the survey to pass it on to others.

DRAFT – DO NOT DISTRIBUTE	2	

Updated 12\_6 2012

DRAFT - DO NOT DISTRIBUTE

Updated 12\_6 2012

DRAFT - DO NOT I

DRAFT - DO NOT I

The survey opened on A

survey responses. Of the

because respondents did

they were not the approp completed less than 20%

professional development

total response rate for th

Of the 76 respondents, 5

(individuals could compl

Some people responded for p

I would say that of the 76 res

came from people we contac

Also, those 76 surveys actual

For the CE21 projects, we rec

since some of the CE21 proje

what portion of RELEVANT C

For CSAHS Google funded pro

Shane Topbert, who Baker this

to count CE21 projects.

Recruitment and commitment to implement computer science: Provide the appropriate k12 teachers, require the teachers to

DRAFT - DO NOT DISTRIBUTE

DRAFT - DO NOT DISTRIBUTE

FINDINGS

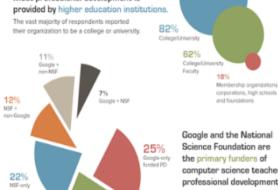
## Computer Science Professional Development

In September 2012, the University of Chicago's Center for Elementary Mathematics and Science Education (CEMSE) and the University of Chicago's Urban Education Institute (UEI) developed a survey for high school computer science teacher professional development providers. The purpose of the survey was to determine the current landscape of professional development that is available to high school computer science teachers.

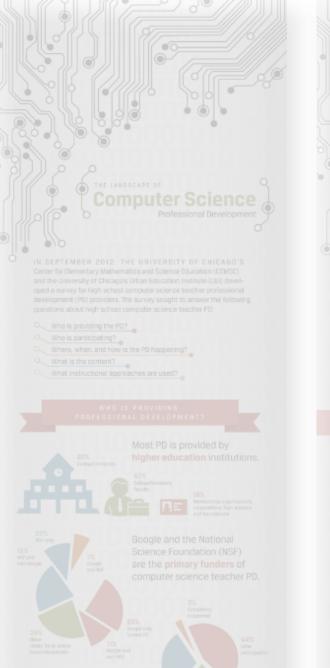
The analysis sought to answer the following questions:

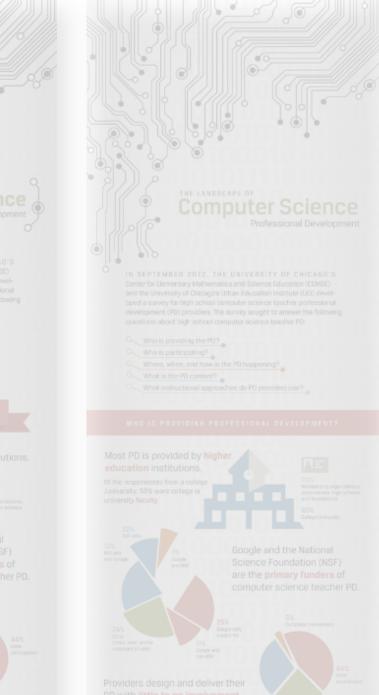
Who is Providing High School Computer Science Teacher 🞸 Professional Development?

Most professional development is









## Computer Science

III Depublic Contraction in the intervente of characteristic contraction temestation. Matcheventics and Seisone Education (CEMBE) and the University of Chicago's Urban Education Institute (UE) development providers. The purpose of the survey was to determine the current landscape of professional development that is evaluable to high school computer science tascheve.

The analysis sought to answer the following questions:

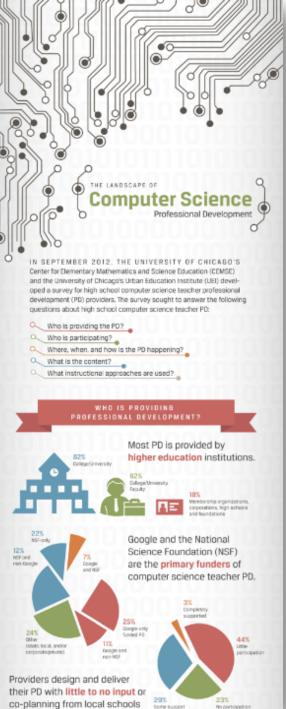
Who is Providing High School Computer Science Teacher Professional Development?

Most professional development is provided by higher education institution

The vast majority of respondents reported their organization to be a college or university.







and/or districts.

### Computer Science

In September 2012, the University of Drisage's Center for Elementary Mathematics and Science Education (CEMSE) and the University of Chicage's Urban Education Institute (UE) developed a survey for high school compute science teacher professional development providers. The purpose of the survey was to determine the curver landscape of professional development that is available to high school computer actience teachers.

The analysis sought to answer the following questions:

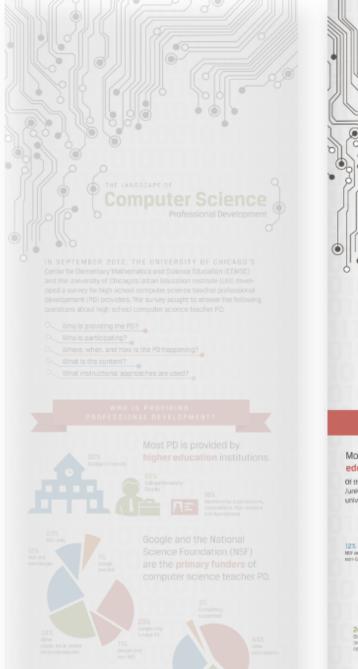
Who is Providing High School Computer Science Teacher Professional Development?

Most professional development is provided by higher education institutions

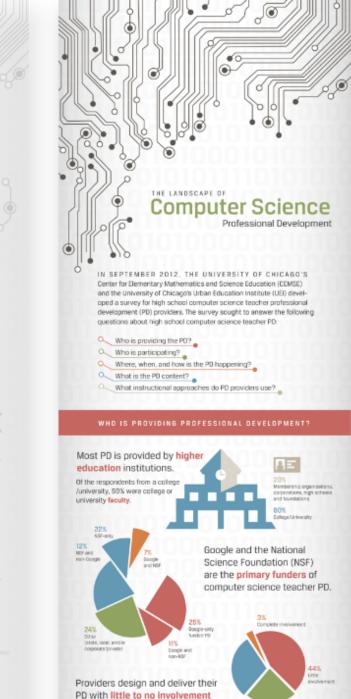
The vast majority of respondents reported their organization to be a college or university.







roviders design and deliver heir PD with little to no input or o-planning from local schools nd/or districts.



from local schools and/or districts. 28%

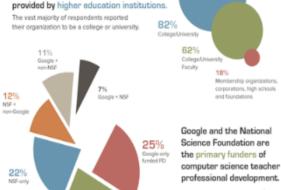
#### The Current Landscape of Computer Science Professional Development

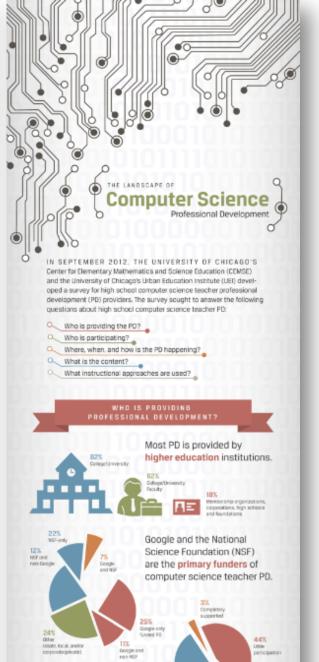
In September 2012, the University of Discago's Center for Elementary Mathematics and Science Education (CEMSE) and the University of Chicago's Urben Education institute (UE) developed a survey for high school compute science teacher professional development providers. The purpose of the survey was to determine the current landscape of professional development that is available to high school computer science teachers.

The analysis sought to answer the following questions:

Who is Providing High School Computer Science Teacher % Professional Development?

Most professional development is

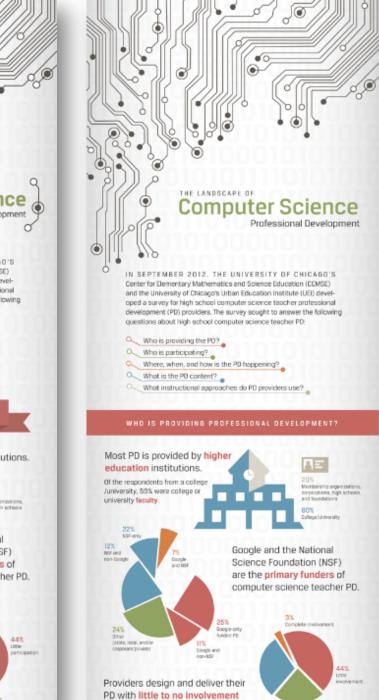




Providers design and deliver their PD with little to no input or co-planning from local schools and/or districts.

29% Some support

No contribution



from local schools and/or districts. Some incomment





## Basic online report: \$55,000



Basic online report: \$55,000

#### Customized online report:

## \$10,000



Basic online report: \$5,000

### Customized online report: \$10,000

Infographic from Visual.ly:

\$4,500



#### $\mathbf{R} \cdot \mathbf{E} \cdot \mathbf{M} \cdot \mathbf{S} \cdot \mathbf{I}$









#### CIEMISIE

CENTER FOR ELEMENTARY MATHEMATICS AND SCIENCE EDUCATION THE UNIVERSITY OF CHICAGO















For REMSI Staff

Contact CEMSE



# ONLINE REPORTS... ✓ require teamwork ✓ are powerful and dynamic ✓ require time and money

## OUTLINE

- What is an online report?
- Lessons learned from creating online reports
   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users
- Online reporting & you!



## Why are online reports a good or bad investment for your projects?



## Why invest in online reports?

#### Pinterest

#### Infographics

Edit Board

education - life

0

next with your students by using the tools and channels that they use most.

-TOOLS LIKE-

**ExactTargets** 

RESOURCE CAN HELP

2

SOCIAL MEDIA

Enables Students

EDUCATE COMMUNITIES

ariety of reasons including: 83%

ENGAGING THE LOCAL COMMUNITY

3

**UNIVERSITIES OFFER** 

FREE non-credit

-ONLINE COURSES-

38%

ALC: NOT

ORILE MARKETING

use SMS to convect with student

01

Keeping staff and students informed abox important MAJOR ED-TECH TRENDS

these socurring in education. Here's a look at some of educemic com's ideas of what may happen in education in the next year.

part a featur

kod message or Peir phones

of surveyed colleges send text message slents as a part of a

deo to You'lub

had a You? or Wines

HOW SCHOOLS HAVE USED

SOCIAL MEDIA TO ADDRESS ISSUES:

80% had a Twitte

THERE ARE A VARIETY OF

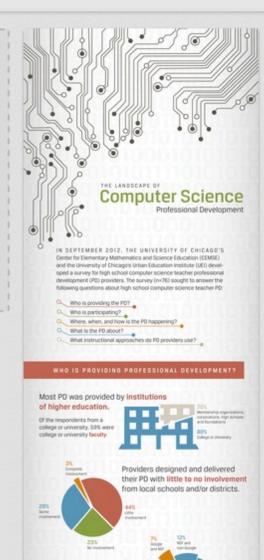
education resources

**ONLINE INCLUDING** 





Cour



r



Jeff Gray @jgrayatua Horn tooting - The University of Chicago just released their report on the K-12 CS work in Alabama:

#### cemse.uchicago.edu/computerscienc...



A

ALABA

taxman @easypopcorn 146 followers	L- Follow
Tammi @TScheiring 112 followers	L- Follow
Alabama Engineering @bamaengineering 726 followers	L → Follow

×

11 Jul

#### Building an Operating System for Computer Science Education

Join Us For A Webinar!

Dear Teacher-

Thank you for completing our Teacher Capacity Survey last winter! We have completed our analysis and created an online report. View that report<u>here</u>. Please share this report with your colleagues.





Join us for a webinar to learn about this report, ask questions, and share your thoughts about the future of computer science education.

Wednesday, September 25th at 3:00 pm CT.

Register herel

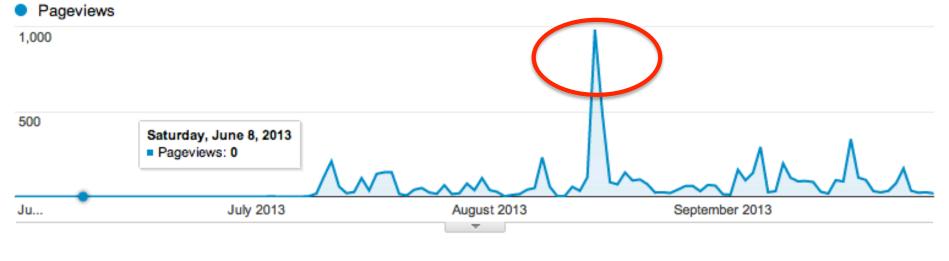




Questions? Contact Sarah Rand at srand@uchicago.edu.

1225 East 60th St | Chicago, IL 60647 US

This email was sent to <u>srand@uchicago.edu</u>. To ensure that you continue receiving our emails, please add us to your address book or safe list.



#### Primary Dimension: Page path level 3 Page Other -

Secondary dimension  Sort Type: Default  Default  Default							
Page path level 3	Pageviews 🧷 🗸	Unique Pageviews (?)	Avg. Time on Page ?	Bounce Rate	% Exit 🕐		
	<b>7,191</b> % of Total: 22.17% (32,431)	<b>4,735</b> % of Total: 0.59% (22,997)	00:01:48 Site Avg: 00:01:24 (27.85%)	63.19% Site Avg: 57.79% (9.35%)	<b>35.02%</b> Site Avg: 32.83% (6.67%)		
1. 🖂 /	2,037	1,168	00:01:18	53.16%	32.06%		
2. 🗀 /teacher-capacity/	1,377	1,112	00:02:20	64.09%	50.04%		
3. 🗀 /cs-schools-study/	1,166	656	00:01:30	45.60%	18.35%		
4. 🗀 /landscapestudy/	967	798	00:02:24	82.00%	55.95%		
5. 🗀 /stories/	921	619	00:01:39	76.24%	27.69%		
6 Ci /design_studio/	462	216	00-02-29	26 50%	10 020/		

## OUTLINE

- What is an online report?
- Lessons learned from creating online reports
   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users
- Online reporting & you!



## OUTLINE

- What is an online report?
- Lessons learned from creating online reports
   Online reports require teamwork
   Online reports are powerful and dynamic
   Online reports require time and money
- Why invest in online reports?
- Feedback from users
- Online reporting & you!



## Questions?



## Creating online reports for your projects



What challenges do you see in creating online reports?

What is exciting to you about creating online reports?



#### Courtney Heppner cheppner@uchicago.edu

#### Sarah Rand srand@uchicago.edu