

*Celebration*

of Computer Science at Harvard

———— In honor of ————

**Harry Lewis**

# AGENDA

---

- 8:00 a.m. **Registration and Continental Breakfast**
- 9:00 a.m. **Welcome**  
Margo I. Seltzer '83  
*Herchel Smith Professor of Computer Science*
- 9:05 a.m. **Top Tips From Harry**  
Marty Chavez '85, SM '85  
*Incoming CFO, Goldman Sachs*
- 9:20 a.m. **Why This Is a Golden Age for Building SaaS Companies—and an Early Glimpse at What the Post-cloud Era Will Look Like**  
James Gwertzman '95  
*CEO, PlayFab*
- 9:50 a.m. **A Logical Concern**  
Guy Steele '75  
*Software Architect, Oracle Labs*
- 10:20 a.m. **WWHD**  
Stuart Shieber '81  
*James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science*
- 10:30 a.m. **Break**
- 11:00 a.m. **Settling P Versus NP With Respect to Education**  
Moderator: Michael Mitzenmacher '91  
Professors: David Malan (Harvard), Eric Roberts (Stanford), Lynn Stein (Olin)  
Not professors: Hannah Blumberg (Khan Academy), Jonathan Katzmann (Minerva), Ali Partovi '94 (code.org)
- 12:30 p.m. **Lunch**
- 1:30 p.m. **Oddball**  
Rebecca Nesson '94, JD '01, PhD '09  
*Director of Online Course Development and Production, Harvard Division of Continuing Education*
- 1:40 p.m. **Hints for Special-purpose Computer Design**  
Cliff Young '89, PhD '97  
*Software Engineer, Google*
- 2:10 p.m. **Going West and Going East**  
Christoph Freytag PhD '86  
*Professor for Databases and Information Systems, Humboldt-Universität zu Berlin*
- 2:30 p.m. **What I Learned at Harvard**  
Danielle Feinberg '96  
*Director of Photography for Lighting, Pixar*
- 2:50 p.m. **A Message From Harry**  
Harry R. Lewis '68, PhD '74  
*Gordon McKay Professor of Computer Science*
- 3:00 – 6:00 p.m. **Reception**

## SPEAKER BIOGRAPHIES

---

### **Margo Seltzer: took AM110 (CS51) and AM108 (CS121); TF'd AS11 (CS50)**

In 1980, starting her Sophomore year at Harvard, Margo walked into Harry's office and indicated that she was unhappy with her current advising assignment and wanted Harry as her advisor. Little did he know that by saying yes, he would end up in that role for 37 years and counting. She did take a brief hiatus from constantly peppering him with questions during her romp through three Boston-area startups over the four and a half years after college and her five years as a Ph.D. student at Berkeley. Without quite realizing what he was getting himself into, toward the end of her stint in grad school, Harry said something to the effect of, "You know, there are some places you could apply where teaching matters." Still not sure what he was suggesting, she was delighted to discover that within moments of Harvard launching a Junior search in Computer Systems, she had already applied. The rest is history — she's been at Harvard for almost twenty-five years, where she tries to apply all the lessons Harry taught her, including some about pestering the administration. Her strange fascination with Dr. Seuss doesn't seem to have come from Harry.

### **Marty Chavez: took CS 121; TF'd AS11 (CS50)**

Marty Chavez grew up in Albuquerque. He thought he wanted to study CS at MIT, but instead he studied Biochemistry at Harvard. He thought he wanted to do a Ph.D. in CS at Harvard, but instead he enrolled in an MD / Ph.D. program at Stanford. He thought he wanted to be an entrepreneur in Silicon Valley, but instead he became a quant on Wall Street. He thought he wanted to be straight, but instead he accepted being gay. He thought he wanted to be an entrepreneur again, but instead he returned to Wall Street. He led the quants, then the equity business, then the engineers. Now he has found serenity as a father and as incoming CFO of Goldman Sachs.

### **James Gwertzman: took CS51 and CS121; TF'd CS51**

James is CEO and Co-Founder of PlayFab, a backend platform for games that delivers powerful real-time tools and services to more than fifty million players each month across thousands of games. His particular passion is the intersection between art and technology. Before founding PlayFab, James spent more than fifteen years on the game creation side, including eight years at PopCap, where he started and ran PopCap Shanghai, PopCap's first free-to-play game studio. James is also an advisor to Code.org, where he served in 2013 as chief evangelist for the Hour of Code initiative that introduced more than twenty million students to computer science. He graduated Harvard in 1995 with a degree in computer science.

### **Guy Steele: took AM208**

Guy L. Steele Jr. (A.B., 1975, Harvard College; S.M., 1977, and Ph.D., 1980, MIT) is a Software Architect at Oracle Labs. He has taught at Carnegie-Mellon University and worked for Tartan Laboratories, Thinking Machines Corporation, and Sun Microsystems. He is author or co-author of five books: Common Lisp: The Language, C: A Reference Manual, The Hacker's Dictionary, The High Performance Fortran Handbook, and The Java Language Specification. He is an ACM Fellow, IEEE Fellow, Fellow of the American Academy of Arts and Sciences, and a Member of the National Academy of Engineering. He has served on accredited standards committees X3J11 (C language) and X3J3 (Fortran), and served as chairman of X3J13 (Common Lisp). He designed the original EMACS command set and was the first person to port TeX.

**Stuart Shieber: took AM110 (CS51) and AM108 (CS121)**

Stuart Shieber is James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science in the School of Engineering and Applied Sciences in the Faculty of Arts and Sciences at Harvard University. He got his start in computer science taking Applied Math 110 with Professor Harry Lewis in 1979, receiving an AB in applied mathematics summa cum laude from Harvard College in 1981 and a PhD in computer science from Stanford University in 1989, afterwards joining the research staff of SRI International in 1981 and the Harvard computer science faculty in 1989. He has been awarded two honorary chairs: the John L. Loeb Associate Professorship in Natural Sciences in 1993 and the Harvard College Professorship in 2001. He was named a fellow of the American Association for Artificial Intelligence in 2004 and a fellow of the Association for Computing Machinery in 2014. His work on open access and scholarly communication policy led to his appointment as the first director of the university's Office for Scholarly Communication.

**Michael Mitzenmacher: took CS121**

Michael Mitzenmacher, a Professor of Computer Science in the School of Engineering and Applied Sciences at Harvard University, joined the Harvard faculty in 1999, and served as Area Dean for Computer Science from 2010-2013. Michael has authored or co-authored over 200 conference and journal publications on a variety of topics, including algorithms for the Internet, efficient hash-based data structures, erasure and error-correcting codes, power laws, and compression. He has also written a textbook on randomized algorithms and probabilistic analysis. Michael graduated summa cum laude in mathematics and computer science from Harvard in 1991. He had started as a math concentrator, but Harry Lewis's CS 121 convinced him that theoretical computer science was the path to follow. Harry Lewis also set him on the road to being a professor by giving Michael his first Teaching Assistant jobs, and co-advising his senior thesis.

**David Malan: took CS121; TF'd CSCI E-207**

David J. Malan is Gordon McKay Professor of the Practice of Computer Science in the School of Engineering and Applied Sciences and a Member of the Faculty of Education in the Graduate School of Education at Harvard University. He received his A.B., S.M., and Ph.D. in Computer Science from the same in 1999, 2004, and 2007, respectively. He teaches Computer Science 50, otherwise known as CS50, Harvard's largest course (and one of Yale's largest too) and edX's largest MOOC. He also teaches at Harvard Business School, Harvard Extension School, and Harvard Summer School.

**Eric Roberts: took CS208; TF'd NS110 (CS50)**

Eric Roberts (Harvard College '73) received his Ph.D. in Applied Mathematics from Harvard University in 1980. While at Harvard, Eric was deeply involved in teaching undergraduate courses and served as Head Teaching Fellow in courses taught by Professors Harry Lewis, Bill Bossert, Thomas Chetham, and Charles Prenner. After receiving his degree, Eric taught at Wellesley College from 1980 to 1985, where he launched the Computer Science Department and served as its first chair. From 1985 to 1990, Eric was a member of the research staff at Digital Equipment Corporation's Systems Research Center in Palo Alto, California, where his research focused on programming tools for multiprocessor architectures. In September 1990, Eric joined the Stanford faculty, where he was the principal architect of the current introductory curriculum. Eric retired in 2015 and is now the Charles Simonyi Professor of Computer Science, emeritus.

**Lynn Stein: TF'd CS11 (CS50) and CS150 (CS51)**

Harry Lewis hired Lynn Stein as a CS11 TF in the fall of 1983, then mysteriously had to “let her go” two weeks later (with some mumbling about lower-than-expected enrollment). By way of overcompensation, Lynn TF'd and then head TF'd CS150 the following two springs, finally earning a coveted CS11 TF spot in her senior year. The proudest moment of Lynn's Harvard career may have been when she so surprised Harry — by suggesting that yes, she did want to go to graduate school — that he practically tied himself up in the cord of his venetian blinds. She managed to find a school willing to accept her in spite of Harry's promised “brutally honest” letter of recommendation, and has been successfully warping students' minds in a variety of computer science and other classes for the past three decades, first as a faculty member at a small engineering school down the Charles and more recently after building her “own damn college” when MIT got tired of her. In 2007, Harvard's Division of (Engineering and) Applied Sciences changed its name in what was subsequently revealed to be a vain attempt to keep Lynn away. She not only tracked them down but managed to plant herself in Maxwell Dworkin for sabbatical, where the newly renamed SEAS made her hold her semester-long class in a hallway in revenge.

**Hannah Blumberg: took CS121; TF'd CS20**

Hannah Blumberg received her A.B. in Computer Science from Harvard in 2016. She now works as a software developer at Khan Academy, where she is a member of the mobile team and focuses on classroom-based learning. She is also working towards her Master's in Interdisciplinary Education at Santa Clara University. As an undergraduate, Hannah taught computer science at the middle school, high school, and college levels through Girls Who Code, the Digital Literacy Project, CS20, CS50, and her senior thesis. Hannah worked with Professor Lewis as his academic advisee, student in CS121, and Teaching Fellow for two semesters of CS20.

**Jonathan Katzman: took CS51, CS121, and CS124**

Jonathan Katzman is Chief Product Officer at Minerva, where he leads development of the technology used to provide students an exceptional academic experience, including the hallmark Active Learning Forum platform. Previously, Jonathan founded Xoopit, an email organizational tool created on the premise that personal data was moving off desktops and into the cloud. In 2009, Xoopit was acquired by Yahoo. Jonathan went on to lead the Yahoo Social Bar product, which grew to become a top three Facebook application, as well as other social initiatives across Yahoo. From acquisition through 2010, Jonathan also managed social and photo initiatives in Yahoo Mail. Prior to Xoopit, Jonathan built and ran Tellme's directory assistance business, which accounted for nearly half of the company's revenue. Jonathan has also served as an Entrepreneur-in-Residence at Ignition Corporation and worked at Microsoft on the Office and FrontPage teams as a development lead and program manager.

**Ali Partovi: took CS51 and CS121**

Described by the San Jose Mercury News as one of “Silicon Valley's top angel investors,” Ali Partovi has backed Airbnb, Dropbox, Facebook, Uber, and Zappos. At Harvard, he majored in CS. Shortly after graduating in 1994, he co-founded LinkExchange (with Tony Hsieh '95 & Sanjay Madan '95), and later iLike (with twin brother Hadi '94). In 2013, Ali and Hadi Partovi co-founded Code.org, which promotes Computer Science education and has introduced more than 100M kids to computer programming via the “Hour of Code.” Ali is an advocate and investor in sustainable organic agriculture. He serves on the board of FoodCorps, a non-profit focused on food in public schools. He loves rock-climbing and guitar, and is learning to play the saxophone.

**Rebecca Nesson: took CS121; TF'd CS121**

Rebecca Nesson is the Executive Director of Digital Teaching and Learning at Harvard's Division of Continuing Education. She works to extend the Harvard classroom experience to nontraditional learners through creative use of online teaching and learning technology. She holds a Ph.D. in Computer Science (Computational Linguistics), a law degree, and an undergraduate degree from Harvard. She lives in Cambridge with her husband and two kids, is a devoted bicycle commuter and food forager, and sometimes tells stories at The Moth.

**Cliff Young: took CS121; TF'd CS121**

Cliff Young is a member of the Google Brain team, whose mission is to develop deep learning technologies and deploy them throughout Google. He is one of the designers of Google's Tensor Processing Unit (TPU), which is used in production applications including Search, Maps, Photos, and Translate. TPUs also powered AlphaGo's historic 4-1 victory over Go champion Lee Sedol. Before joining Google, Cliff worked at D. E. Shaw Research, building special-purpose supercomputers for molecular dynamics, and at Bell Labs.

**Christoph Freytag: took AM108 (CS121); TF'd AS11 (CS50)**

Since 1994, Johann-Christoph Freytag has been a full professor for Databases and Information Systems (DBIS) at Humboldt-Universität zu Berlin. Before joining the department, Christoph spent eight years in industrial research at the IBM Almaden Research Center, at the European Computer Industry Research Centre (ECRC), Munich, and at DEC's (Digital Equipment) Database System Research Center, Munich. He holds a Ph.D. in Applied Mathematics/Computer Science from Harvard University, MA (1986). During his twenty-three years in academia he has performed research in various areas of database systems and privacy, often in the context of applications areas (genomics, physics, geoscience) producing almost 100 papers, several books and several patents. Over the years he has been an active member of the national and international database community, an industrial consultant for different companies, an organizer of several conferences, and an active member of the German Computer Society (GI) and the ACM. He has always found time to enjoy various activities such as dancing, hiking, or piano playing to balance his life.

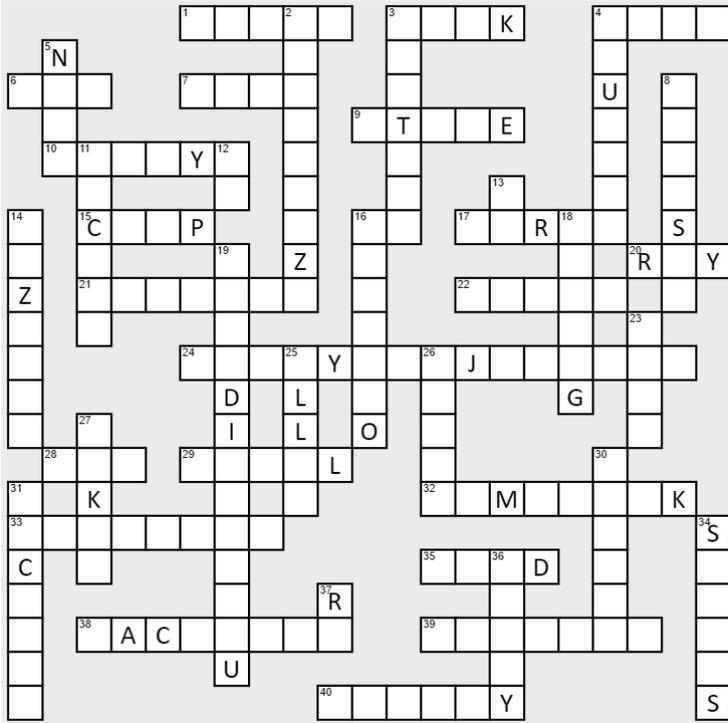
**Danielle Feinberg: took CS51 and CS121**

Danielle Feinberg began her career at Pixar Animation Studios in February 1997. As she worked her way from an entry level, technical job to one of the top creative positions, she crewed many of Pixar's feature films including Toy Story2, Monsters, Inc., Finding Nemo and The Incredibles. Feinberg rose to be the Director of Photography for Lighting on Disney•Pixar's Academy Award®-winning films WALL•E and Brave and is now working on Pixar's upcoming fall 2017 film. Feinberg's love of combining computers and art began she was eight years old, and first programmed the Logo turtle to create images. This eventually led her to a degree in Computer Science from Harvard University. In addition to her Pixar work, she works with teenage girls, encouraging them to pursue code, math and science by demonstrating to them this same magic found by combining art and technology. In 2016, she was able to bring that message to a broader audience with her TED talk that was part of the PBS "Science and Wonder" presentation for TED Talks Live. It was named one of the top TED talks of 2016.

***"He labors not for himself only but for all those who seek learning."***



# Wild about Harry



## ACROSS

1. No Henry or Harold he
3. 27D built I of these
4. Maybe they say this at Yale, but at Harvard we say HALT
6. Accepts CFLs (but get a room, will ya?)
7. 36D ended this elevation
9. 5D is the decider
10. She supplies the raw material
15. How satisfying if this identified with 12D
16. First degree
17. 1A sees our 23Ds as being, temporarily, these undiscovered
20. Ever wonder what the R stands for?
21. Bill's sticky problem
22. PhD was this degree; also, degree administered before 32A stricture excepted
24. Dog-eared by now
28. 3A's degrees to 1A
29. 1A dispatches this at all hours
32. 1A might not 11D this, if it's late
33. Euclid had some too
35. Steely freshman bonds form here
38. 1A gave this up to focus on his love life
39. This and 10A are his great loves
40. No longer 7A, 1A can again love this house best

## DOWN

2. Good for algorithms, but houses?
3. Fave retreat (long drive)
4. They accommodate Alan's alphabet
5. Runs off in all directions at once
8. This rag's clouded crystal ball predicted: "Lewis ... may well be remembered as a low-profile dean"
11. 18D's gizmo might either do this, or become the Energizer Bunny
12. "The class of dashed hopes and idle dreams" (no, not CS121)
13. Second degree
14. Matthew 20:16 (well, leftmost anyway)
16. (this)\*
18. Cover man (2nd ed.)
19. Coauthor's spouse?
23. Excellence's indispensable leavening
25. 1A's island ancestry, so he says
26. If 1A were your uncle, this kind he'd be
27. Pioneer with superseded edifice
30. 27D's graceful entomologist
31. You might do this again after ten profane debugging iterations
34. A favorite of 1A for building character and cooperation
36. `HAMMING_DISTANCE('HARRY', 'he')==1` but `AND(HARRY, he)≈0`
37. Countenance of those getting plenty of fiber

# Thank you Harry!

A X R O T U T D A E H E I B S P O R T S F A N A H F U R U Y  
M T J B T S H A P E S H I F T E R N O S M I R C G E R E M D  
O Y D F J E A A L Z A R M B I N X E M H V A P V K H E K P N  
K S T E W N C D D Q T E R C O H C E Q N K N B S A Q B G Y A  
N U B H A G P S J V N J B T H A M L U R U I S Y C U L T R L  
O O G Z I N N U E T I N T N Y P K B I Z Q N T M Q E F N F S  
I U Q Y O R Z Z O L F S J A G P R A N S I T I M F L S G A I  
T G E Z A L D R V T E E O O G Y T I C I Y E B E Q E D W Z S  
A I U Z O Y A S Z L B V Z R S B W F Y X Y G O T G M E Q J I  
T B G Y K O E F T S H H E M T I C S H D Z R T R C E R H R L  
U M A V B L B J F R M L V N U R N I O E P I N I A N E M G L  
P A E A X O A W R U I O L D J T O T U G S T W C T T V J J E  
M N L F X G T P O H B N R T Y H T A S R R Y O L Y S O N H F  
O U L P F I H A S A L O G U D D R S E E X K L O F O C H B O  
C Y O E X C L N S R H J L L F A C N M E L Q B G N F S T W S  
F L C Z M I E C E V X L B A A Y P U G S U K Z S G T I A K E  
O L Y S K N T A F A Y T C O F C D P C L O I W P J H D M K S  
Y U V I D C I K O R E J S O H F R K L U S G E A O E N E A I  
R F O R U S C E R D M S W V W S U O X L V A Q F C L T U T R W  
O E N I S H S S P A X J D G M L G B S G A T E Q H S E W E  
E C E D U C A T O R L D V E Y M P G O S N B N E T E T R T L  
H A E X C E L L E N C E W I T H S O U L E E E Z X O R C B D  
T R M I G U K C M R E H C A E T M D W U A W T S Y R A S Q E  
M G R G N N K R O W E M O H E T A L O N Y F R E A Y P I X F  
L I A M E T H G I N D I M Z M Y B H Y S R A F Q N B T D L R  
A U F A N Q Z G W F T M U H E E L C N U H C T U D O R Q X E  
U C M H E R B R A N D E X P A N S I O N S T W I B I M G E D  
A U Z M I E A W S E C E I P D N A S T I B C I V R O F A V S  
Q L M T D D S G Y C I K N O W Y O U C A N D O B E T T E R O  
I G J Y G C R Z E J O W T Y T N E W T D L E W K D X E W A X

## WORD LIST:

ADVISOR  
AMONETEN  
ATHLETICS  
BASEBALL  
BITSANDPIECES  
BLOWNTOBITS  
BUFFALOBUFFALOBUFFALO  
COLLEAGUE  
CRIMSON  
CSELEVEN  
DEAN  
DISCRETEMATH  
DUS  
DUTCHUNCLE  
EDUCATOR

ELEMENTSOFTHETHEORY  
EXCELLENCEWITHSOUL  
GRACEFULLYUNAMBIGUOUS  
HAPPYBIRTHDAY  
HARVARD  
HEADTUTOR  
HERBRANDEXPANSIONS  
IKNOWYOUCANDOBETTER  
INTEGRITY  
LEWISESOFELLISLAND  
LOGICINCS  
MENTOR  
MIDNIGHTEMAIL  
NOLATEHOMWORK  
PANCAKES

PARTSUNDISCOVERED  
PROFESSOR  
QUINCYHOUSE  
REDSOX  
SHAPESHIFTER  
SIXDEGREES  
SOUL  
SPORTSFAN  
SYMMETRICLOGSPACE  
TEACHER  
THEORYOFCOMPUTATION  
THIRDSTRINGLACROSSE  
UNSATISFIABLE  
WELDTWENTYTWO  
ZYZZYVA