



7th Annual PNT Symposium • November 14-15, 2013 • Kavli Auditorium at SLAC

Schedule

- November 14
All Day,
plus Dinner at the
Stanford Faculty Club
- November 15
Morning

Hosts

- Per Enge
- Jim Spilker
- Brad Parkinson
- Leo Hollberg
- Mark Kasevich
- Tom Langenstein

Invited Speakers

- **Brad Parkinson**—Assured PNT
- **Ganesh Pattabiraman**—Overcoming the Challenges of Indoor & Urban Canyon Location with a Terrestrial Constellation
- **Stuart Shaw**—GPS III Signal Integrity Improvements & Aviation Applications
- **Phil Scherrer**—NASA SDO: Observing the Sources of Space Weather
- **Mykel Kochenderfer**—Aircraft Collision Avoidance System (ACAS-X)
- **Ada Poon**—Wireless Powering of Catheter Insertable Electronics
- **Mitch Narins**—Alternative Position Navigation and Time (APNT)
- **Jean-Paul Clarke**—Airspace System Efficiencies Enabled by PNT
- **Alissa Fitzgerald**—A Practical Guide to MEMS Inertial Sensors
- **Frank van Diggelen**—Who's Your Daddy? Why GPS rules GNSS
- **Christophe Salomon**—ACES: Atomic Clock Ensemble in Space
- **Bryant Walker Smith**—Legal Aspects of Vehicle Automation
- **Michael O'Connor**—The Role of Location in Cybersecurity
- **Todd Humphreys**—Secure PNT for Autonomous Systems
- **Jade Morton**—International Monitoring of Ionosphere
- **Rita Lollok**—Update on GPS & Thoughts on its Future
- **Sven Beiker**—Automated Vehicles are Coming, But...
- **Edward Marks**—Location Services in the Real World

**Plus:
Student
Poster
Sessions**

Sponsors



Web Site: <http://scpnt.stanford.edu>
Email: tom.langenstein@stanford.edu
Phone: (650) 823-4906

SPACE IS LIMITED to 160 Attendees! — RSVP Required



Stanford's 2013 PNT Challenges and Opportunities Symposium - 'R13'

November 14 & 15, 2013 - Kavli Auditorium, SLAC & Stanford Faculty Club

Day / Date	~ Start Time	~mins w/ Q&A	Invited Speaker	Affiliation	Title of Presentation
Thu 11/14/13	8:00am	30	<i>Reception & Coffee Service at SLAC's Kavli Auditorium Lobby</i>		
	8:30am	5	Enge, Per	Stanford	Welcome
1	8:35am	60	Parkinson, Brad	Stanford Aero-Astro	"Assured PNT"
2	9:35am	30	Narins, Mitch	FAA	"Alternative Position Navigation and Time (APNT)"
	10:05am	25	<i>Morning Break</i>		
3	10:30am	30	Humphreys, Todd	University of Texas	"Secure PNT for Autonomous Systems"
4	11:00am	30	Pattabiraman, Ganesh	NextNav, LLC	"Overcoming the Challenges of Indoor and Urban Canyon Location with a Terrestrial Constellation"
5	11:30am	30	Fitzgerald, Alissa	A.M. Fitzgerald & Associates, LLC	"A Practical Guide to MEMS Inertial Sensors."
	noon	60	<i>Catered Lunch at Kavli Porch & Panosky Grove</i>		
6	1:00pm	30	Marks, Edward	Entrepreneur	"Location Services in the Real World"
7	1:30pm	30	O'Connor, Michael	iKare	"The Role of Location in Cybersecurity"
8	2:00pm	30	Morton, Jade	Miami of Ohio Univ.	"International Monitoring of Ionosphere"
	2:30pm	30	<i>Afternoon Break # 1 and Student Poster Session</i>		
9	3:00pm	30	Scherrer, Phil	Stanford Physics	"Solar Dynamics Observatory: Observing the Sources of Space Weather"
10	3:30pm	30	Salomon, Christophe	CNRS (ENS, France)	"ACES - Atomic Clock Ensemble in Space"
11	4:00pm	30	Poon, Ada	Stanford, EE	"Wireless Powering of Catheter Insertable Electronics"
	4:30pm	30	<i>Afternoon Break #2 and Student Poster Session</i>		
	6:00pm	120	<i>Reception and Dinner on campus at Stanford's Faculty Club</i>		
12	7:30pm	30	van Diggelen, Frank	Broadcom and Stanford Aero-Astro	"Who's Your Daddy? Why GPS rules GNSS."
Fri 11/15/13	8:00am	30	<i>Reception & Coffee Service in SLAC's Kavli Lobby</i>		
13	8:30am	30	Clarke, Jean-Paul	Georgia Tech	"Airspace System Efficiencies Enabled by PNT"
14	9:00am	30	Kochenderfer, Mykel	Stanford Aero-Astro	"Airborne Collision Avoidance System (ACAS X)"
15	9:30am	30	Beiker, Sven	Stanford CARS	"Automated vehicles are coming - but they might not be exactly what we expect."
	10:00am	30	<i>Morning Break</i>		
16	10:30am	30	Walker Smith, Bryant	Stanford Law School	"Legal aspects of Vehicle Automation"
17	11:00am	30	Shaw, Stuart	Lockheed Martin	"GPS III Signal Integrity Improvements and Aviation Applications"
18	11:30am	30	Lollock, Rita	Aerospace Corp.	"Update on GPS and thoughts on its future"
	noon	60	<i>Catered Lunch at Kavli Porch & Panosky Grove</i>		

Stanford's 2013 PNT Symposium Attendee List ...as of 11/13/13

Individual	Affiliation	Symposium Attendee	Dinner Attendee	Individual	Affiliation	Symposium Attendee	Dinner Attendee
Akgul, Ferit Ozan	Qualcomm	100%	100%	Losik, Len	Failure Analysis	100%	100%
Akos, Dennis	Univ. Colorado, Stanford	100%	100%	Marks, Edward	Entrepreneur	100%	100%
Allhussien, Aziz	KACST	100%	100%	Martin, Scott	Arbun University	100%	100%
Anderson, Karl	Second Nature	100%	0%	McBurney, Paul	gopherHush Corp	100%	100%
Archdeacon, Doug	Stanford	100%	0%	McMillin, Emily	Stanford	100%	100%
Arredondo, Alberto	Aerospace Corp.	100%	100%	Meiyappan, Subbu	NextNav	100%	100%
Barbender, Jeff	Coherent Solutions	100%	100%	Miller, Isaac	Coherent Navigation	100%	100%
Barrows, Andy	Stanford	100%	0%	Mitelman, Sasha	Consultant	100%	100%
Beiker, Sven	Stanford CARS	100%	100%	Mohamed, Amr	Stanford	100%	100%
Bencze, Bill	Coherent Navigation	100%	100%	Montgomery, Paul	Trimble	100%	100%
Berceau, Paul	Stanford	100%	100%	Moran, Stephen	Raytheon	100%	100%
Bevly, Dave	Auburn University	100%	100%	Morton, Jade	Miami of Ohio Univ.	100%	100%
Blake, Peter	Stanford	100%	100%	Muhlfelder, Barry	Stanford	100%	100%
Blanch, Juan	Stanford	100%	100%	Mullin, Rich	Thales	100%	100%
Blankinship, Kevin	AOSense	100%	100%	Nalluri, Ram	CSR	100%	100%
Braisted, Paul	Trimble	100%	0%	Narins, Mitch	FAA	100%	100%
Brandt, Benjamin	Mitre	100%	100%	Ndili, Awele	Ndili Technologies, Inc.	100%	100%
Brekke, Darin	Boeing	100%	100%	Nguyen, Paul	SEMPCompany	100%	100%
Brumley, Rob	Coherent Navigation	100%	100%	O'Connor, Mike	iKare	100%	100%
Buchman, Sasha	Stanford	50%	50%	Oester, David	CSR	100%	100%
Cameron, Rob	Stanford - SLAC	100%	0%	Olsen, Dave	FAA	100%	100%
Capua, Roberto	RIE-RIS Sogel	100%	100%	Opshaug, Guttorm	Qualcomm	0%	100%
Castelluccio, Mark	Boeing	100%	100%	Park, Young Shin	Qualcomm	100%	100%
Chen, Yu Hsuan	Stanford	100%	100%	Parkinson, Brad	Stanford Aero Astro	100%	100%
Christiano, Paul	Boeing	100%	100%	Pattabiraman, Ganesh	NextNav, LLC	100%	100%
Clark, Ashley	Stanford	100%	100%	Pavloff, Cris	BMW	100%	0%
Clarke, Jean-Paul	Georgia Tech	100%	50%	Pavloff, Mike	Space Systems Loral	100%	100%
Cobb, Stewart	iKare	100%	0%	Phatak, Max	Samsung	100%	0%
Cohen, Clark	PNT-holdings	100%	100%	Phelts, Eric	Stanford	100%	100%
Crabill, Carl	Lockheed Martin	100%	100%	Pierce, Brian	Jacobs Technology	100%	100%
Crews, Mark	Ball Aerospace	100%	100%	Poon, Ada	Stanford EE	100%	100%
Dara-Abrams, Alec	Strategic Spatial Solutions	100%	100%	Powell, Dave	Stanford	100%	100%
Darland, Jeff	Raytheon	100%	100%	Pullen, Sam	Stanford	100%	100%
Datta, Rajen	Qulsar	100%	100%	Qiu, Di	Polaris Wireless	100%	100%
DeLorenzo, David	Polaris Wireless	100%	100%	Ramakrishnan, Shankar	Stanford	100%	100%
Do, Ju-Yong	Qualcomm	100%	100%	Reid, Tyler	Stanford	100%	100%
Dorosky, Chris	Lockheed Martin	100%	100%	Riley, Stuart	Trimble	100%	100%
Eglington, Mike	iKare	100%	100%	Rohrke, Terry	SED, a division of Calian Ltd.	100%	200%
Elkaim, Gabe	UCSC	100%	100%	Rose, Todd	Northrop Grumman	100%	100%
Enge, Per	Stanford	100%	200%	Salomon, Christophe	CNRS (ENS, France)	100%	100%
Eschenbach, Ralph	Trimble Navigation	100%	0%	Scheerer, John	Consultant	100%	100%
Fay, Gary	Aerospace Corp	100%	100%	Scherrer, Phil	Stanford Physics	100%	100%
Feairheller, Scott	US Air Force - Wright Patterson AFB	75%	75%	Schlatter, Ed	Raytheon	100%	100%
Fitzgerald, Alissa	A.M. Fitzgerald & Associates, LLC	100%	100%	Segal, Ben	Stanford	100%	100%
Fixler, Jeff	Lockheed Martin	100%	100%	Shallberg, Karl	Zeta	100%	0%
Fugelseth, Ron	Rail Digital, Inc.	100%	100%	Shaw, Stuart	Lockheed Martin	100%	100%
Fuller, Rich	Entrepreneur	100%	100%	Shenoi, Kishan	Qulsar	100%	100%
Garin, Lionel	Qualcomm	100%	100%	Shuler, Andy	Lockheed Martin	100%	100%
Goel, Ashish	Stanford	100%	100%	Shverdin, Miro	AOSense	100%	0%
Gordon, Jeff	Stanford	100%	100%	Soelter, Achim	Moog Fernau	100%	100%
Green, Gaylord	NavAstro	100%	100%	Spilker, Jim	Stanford	100%	100%
Hansen, Evan	Medium	50%	50%	Stein, Ned	Northrop Grumman	100%	100%
Harris, Matt	Boeing	100%	100%	Stochino, Alberto	Stanford	100%	100%
Hegarty, Chris	MITRE	100%	100%	Stockwell, Walter	Trimble	100%	100%
Hinnant, Hank	Boeing	100%	100%	Stoner, Richard	Draper Labs	100%	100%
Hollberg, Leo	Stanford	100%	100%	Sugarbaker, Alex	Stanford	100%	100%
Hua, Quyen	PAQCom	100%	100%	Sun, Jing	John Deere	100%	100%
Hubbard, Scott	Stanford	100%	0%	Sushko, Andrey	Stanford	100%	100%
Humphreys, Todd	Univ. Texas	100%	100%	Tarantino, Paul	Stanford	100%	100%
Jones, Ed	Trimble	100%	100%	Tran, Lisa	USAF	100%	100%
Kahn, Bob	Stanford	100%	100%	Turetzky, Greg	CSR	100%	100%
Karunanayake, Dhar	CSR	100%	100%	Turgut, Ozhan	Stanford	100%	100%
Kasevich, Mark	Stanford	100%	50%	Van Dierenendonck, AJ	AJ Systems	100%	0%
Keegan, Richard	John Deere	100%	100%	van Diggelen, Frank	Broadcom and Stanford	100%	200%
Kochendoerfer, Mykel	Stanford Aero-Astro	100%	100%	Volz, Ryan	Stanford	100%	100%
Kohstall, Christoph	Stanford	100%	50%	Walker Smith, Bryant	Stanford Law School	100%	50%
Kovachy, Tim	Stanford	100%	100%	Walter, Todd	Stanford	100%	100%
Kubo, Nobuaki	Institute of PNT Tokyo University	100%	0%	Wang, Min	John Deere	100%	100%
Kulkarni, Nitish	Stanford	100%	100%	Watts, Dick	HP, retired	100%	100%
Landon, James	Raytheon	100%	100%	Watts, Kevin	Bosch	100%	100%
Langenstein, Tom	Stanford	100%	100%	Wei, Jerome	Northrop Grumman	100%	0%
Lawrence, Dave	iKare	100%	0%	Weida, George	Moog Fernau	100%	100%
Lee, Chiawei	Air Force Test Center, Edwards AFB	100%	100%	West, Sharon Lindsey	GPS Lab Alumni	100%	100%
Lee, Rich	iPosi, Greenword Telecommunications	100%	100%	Wodin, Jesse	SRI	100%	100%
LeMaster, Ed	Lockheed Martin	100%	100%	Wu, Alan	Draper Labs	100%	100%
Lentz, Will	Trimble	100%	0%	Wu, Renbiao	Civil Aviation Univ. of China	100%	100%
Linscott, Ivan	Stanford	100%	100%	Yang, Chun	Sigtem Technology	100%	100%
Litton, James	Litton Consulting Group, Inc.	100%	100%	Yu, Wei	John Deere	100%	100%
Lo, Sherman	Stanford	100%	100%	Zimmerman, Kurt	Trimble	100%	100%
Lollock, Rita	Aerospace Corp.	100%	100%	Zoellner, Andreas	Stanford	50%	50%
Loomis, Peter	Trimble	100%	100%				

Stanford's PNT Symposium

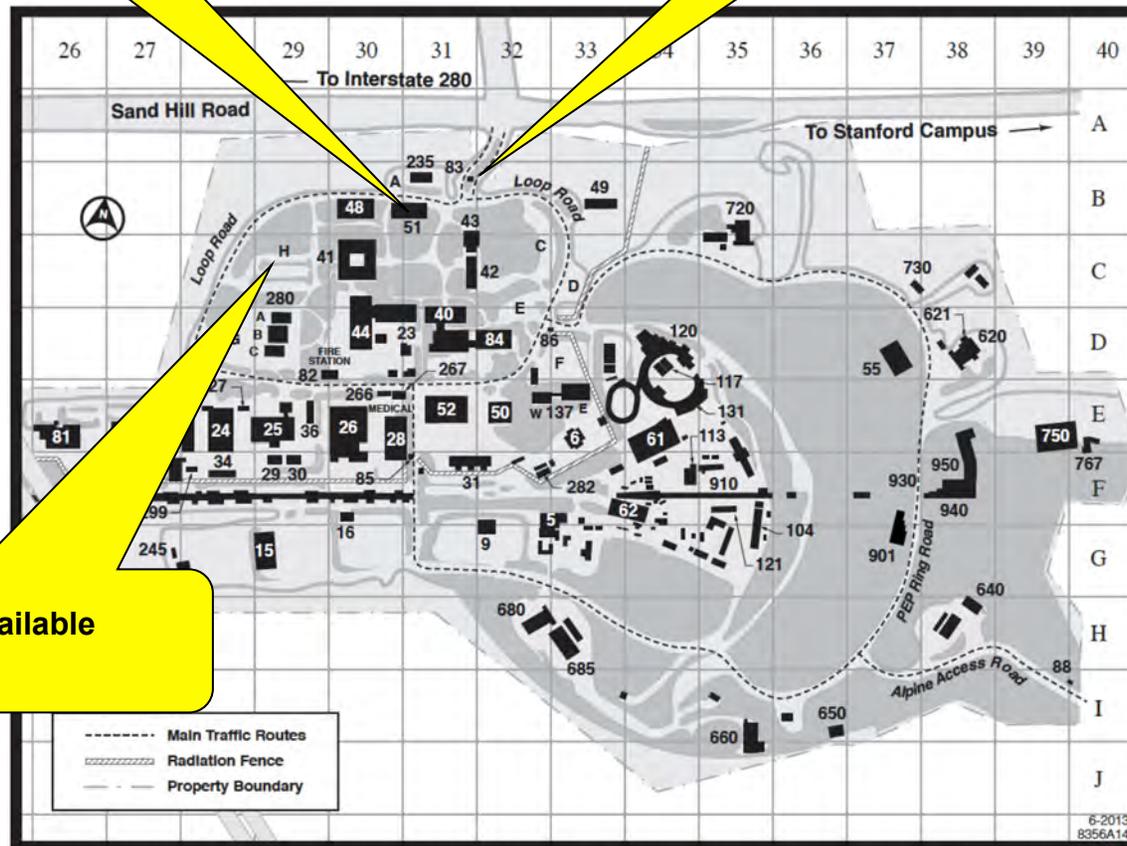
November 14th and 15th, 2013

Kavli Institute Auditorium Building (#51)

SLAC National Accelerator Lab
2575 Sand Hill Rd., Menlo Park, CA
~ 2 miles from center of campus
From Hwy 280
take Sand Hill Rd east ~ 1/2 mile

Entry Gate requires simple ID
SU Student ID, Passport, Driver's Lic

Free Parking Available
Lot 'H'



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