

# Welcome to ISTW 2015!



ISTW-2015

Search this site

ISTW 2015 Web Pages:

[Home](#)

[Upload Presentation](#)

[Agenda and Presentations](#)

[Conference Venue](#)

[Accommodations / Hotel](#)

[Important Dates](#)

[Local Organizing Committee](#)

[Meeting Format](#)

[Objectives and Topics](#)

[Program Committee](#)

[Reception and Banquet](#)

[Abstract Submission \(CLOSED\)](#)

[Registration and Payment Forms](#)

[Travel to Princeton](#)

[Visa Information](#)

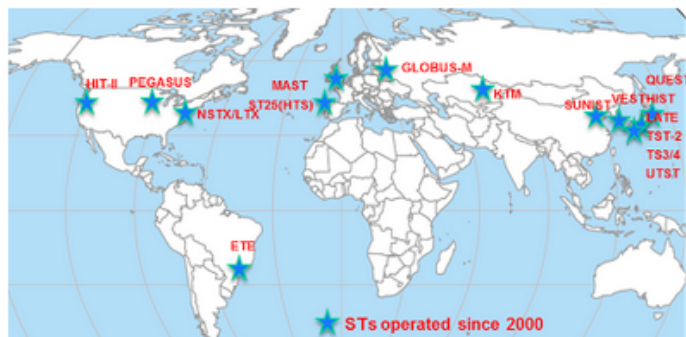
[Sitemap](#)

Other Useful Links:



## 18<sup>th</sup> International Spherical Torus Workshop (ISTW 2015) and 2015 US-Japan Workshop on ST Plasmas

Princeton University, 3-6 November 2015



### Introduction

The joint 18th International Spherical Torus Workshop (ISTW 2015) and 2015 US-Japan Workshop on ST Plasmas will be held during November 3-6, 2015 at Princeton University, Princeton, New Jersey, USA.

Previous ISTWs were held in Oak Ridge (1994), Princeton (1995), Culham (1996), St. Petersburg (1997), Tokyo (1998), Seattle (1999), Sao Jose dos Campos (2001), Princeton (2002), Culham (2003), Kyoto (2004), St. Petersburg (2005), Chengdu (2006), Fukuoka (2007), Frascati (2008), Madison (2009), Toki (2011), and York (2013).

# Internet and laptop logistics

- **Wireless network: “puvisitor”**
  - There is no password
- Power strips are provided at back of the auditorium for charging laptops
  - Charge during breaks or over lunch
    - Very likely one of Joanne, Carol Ann, or Jennifer will be here during lunch
    - If so, you can leave your stuff during lunch

Please: No food or  
drink in auditorium  
*(maybe top secret water is ok)*

# Local Organizing Committee

- Dr. Jonathan Menard (Chair)
  - [jmenard@pppl.gov](mailto:jmenard@pppl.gov)
- Dr. Stanley Kaye

## The people really doing the work:

- Carol Ann Austin ([caustin@pppl.gov](mailto:caustin@pppl.gov))
- Joanne Savino ([jsavino@pppl.gov](mailto:jsavino@pppl.gov))
- Jennifer Jones

**Questions? Ask them at registration desk**

# Thanks to Program Committee!

- **Dr. Brian Lloyd - Culham Centre for Fusion Energy (UK) - Chair**
- Dr. Franco Alladio - ENEA (Italy)
- Prof. Raymond Fonck - University of Wisconsin - Madison (USA)
- Prof. Zhe Gao - Tsinghua University (China)
- Prof. Kazuaki Hanada - Kyushu University (Japan)
- Prof. Yong-Seok Hwang - Seoul National University (Korea)
- Dr. Masayuki Ono - Princeton Plasma Physics Lab (USA)
- Dr. Alan Sykes - Tokamak Energy, LLC (UK)
- Prof. Yuichi Takase - University of Tokyo (Japan)
- Prof. Howard Wilson - University of York (UK)

# ~100 registrants, 10 Overviews, 28 orals, 40 posters

~50% international covering CTs, start-up, EP, core/edge transport, MHD, boundary, RF

## Program for 18<sup>th</sup> International ST Workshop - November 3-6, 2015

Princeton University - McDonnell Hall, Room A01

Tuesday, November 3				Wednesday, November 4				Thursday, November 5				Friday, November 6				
8AM - 8:30AM - Registration				8AM - 8:30AM - Registration				8AM - 8:30AM - Registration								
8:30 - 8:50AM - S. Prager - Welcome J. Menard - Agenda, logistics, local info				8:30 - 8:40AM - J. Menard: Updates, logistics				8:30 - 8:45AM - J. Menard: Updates, logistics				8:30 - 8:40AM - J. Menard: Final updates, logistics				
8:50AM - Session O1 - Chair: Rajesh Maingi				8:40AM - Session O3 - Chair: Richard Majeski				8:45AM - Session O5 - Chair: Roger Raman				8:40AM - Session O6 - Chair: Yuichi Takase				
Extended Oral	S. Gerhardt	<a href="#">Abstract</a>	Presentation	Extended Oral	K. Hanada	<a href="#">Abstract</a>	Presentation	Extended Oral	Y. Takase	<a href="#">Abstract</a>	Presentation	Extended Oral	Y. Hwang	<a href="#">Abstract</a>	Presentation	
Oral	P. Micozzi	<a href="#">Abstract</a>	Presentation	Oral	H. Tanabe	<a href="#">Abstract</a>	Presentation	Oral	M. Nagata	<a href="#">Abstract</a>	Presentation	Oral	J. Lee	<a href="#">Abstract</a>	Presentation	
Oral	S. Cohen	<a href="#">Abstract</a>	Presentation	Oral	H. Tanaka	<a href="#">Abstract</a>	Presentation	Oral	F. Ebrahimi	<a href="#">Abstract</a>	Presentation	Oral	M. Inomoto	<a href="#">Abstract</a>	Presentation	
Oral	M. Gryaznevich	<a href="#">Abstract</a>	Presentation	Oral	F. Poli	<a href="#">Abstract</a>	Presentation	10 - 10:25AM - Coffee Break				Oral	R. Raman	<a href="#">Abstract</a>	Presentation	
10:25 - 10:45AM - Coffee Break				10:15 - 10:45AM - Coffee Break				10 - 10:25AM - Coffee Break				10:15 - 10:45AM - Coffee Break				
Extended Oral	A. Kirk	<a href="#">Abstract</a>	Presentation	Extended Oral	Y. Ono	<a href="#">Abstract</a>	Presentation	Extended Oral	Y. Tan	<a href="#">Abstract</a>	Presentation	Extended Oral	D. Sutherland	<a href="#">Abstract</a>	Presentation	
Oral	E. Fredrickson	<a href="#">Abstract</a>	Presentation	Oral	S. Jardin	<a href="#">Abstract</a>	Presentation	Oral	R. Minami	<a href="#">Abstract</a>	Presentation	Oral	J. Reusch	<a href="#">Abstract</a>	Presentation	
Oral	Z. Gao	<a href="#">Abstract</a>	Presentation	Oral	S. Sabbagh	<a href="#">Abstract</a>	Presentation	Oral	R. Perkins	<a href="#">Abstract</a>	Presentation	Oral	J. Menard	<a href="#">Abstract</a>	Presentation	
12 - 1:30PM - LUNCH at Frist Campus Center				12PM - Group photo in McDonnell Hall courtyard				Gather all belongings, board bus by 12:10PM 12:15PM - Bus leaves for PPPL				12 - 12:30PM - Discussion and Closing Remarks				
1:30PM - Session O2 - Chair: Andrew Kirk				12:15 - 1:45PM - LUNCH at Frist Campus Center or Nassau Street				12:30 - 1:50 PM - LUNCH in PPPL Cafeteria				12:30PM - Official End of Workshop				
Extended Oral	J. Menard	<a href="#">Abstract</a>	Presentation	1:45PM - Session O4 - Chair: Steven Sabbagh	Extended Oral	R. Majeski	<a href="#">Abstract</a>	Presentation	2:00 PM Tour group meets in LSB lobby to begin tour				1:30-3:00PM - US-Japan Collaboration Discussion			
Oral	F. Alladio	<a href="#">Abstract</a>	Presentation	Oral	Y. Ren	<a href="#">Abstract</a>	Presentation	Group:	Group 1	Group 2	Group 3	Group 4	Takase, Menard, all others who are interested			
Oral	D. Battaglia	<a href="#">Abstract</a>	Presentation	Oral	A. Thornton	<a href="#">Abstract</a>	Presentation	Guide:	J. Menard	S. Kaye	R. Maingi	R. Kaita				
Oral	M. Bongard	<a href="#">Abstract</a>	Presentation	Oral	J.-W. Ahn	<a href="#">Abstract</a>	Presentation	2:10 PM	NSTX-U Control Rm	QUASAR	Hall Thruster	LTX				
Oral	R. Maingi	<a href="#">Abstract</a>	Presentation	Oral	H. Frerichs	<a href="#">Abstract</a>	Presentation	2:30 PM	NSTX-U Test Cell	Hall Thruster	QUASAR	PFRC-2				
3:25 - 3:45PM - Coffee Break				3:40 - 4:00PM - Coffee Break				2:20 PM								
3:45 - 5:45PM - Poster Session 1 (P1)				4:00 - 6:00PM - Poster Session 2 (P2)				2:30 PM								
Abstract	Poster	Abstract	Poster	Abstract	Poster	Abstract	Poster	2:50 PM	QUASAR	NSTX-U Control Rm	PFRC-2	MRX				
P1-1	J. Yang	P1-11	W. Guttenfelder	P2-1	S. Banerjee	P2-11	C. Ribeiro	3:10 PM	Hall Thruster	NSTX-U Test Cell	LTX	QUASAR				
P1-2	H. Furu	P1-12	E. Evans	P2-2	K. Gan	P2-12	P. Titus	3:30 PM	MRX	LTX	NSTX-U Control Rm	Hall Thruster				
P1-3	C. Swanson	P1-13	M. Podesta	P2-3	R. Lunsford	P2-13	L. El-Guebaly	3:50 PM	PFRC-2	MRX	NSTX-U Test Cell	NSTX-U Control Rm				
P1-4	G. Hao	P1-14	D. Liu	P2-4	H. Lee	P2-14	B. Colling	4:10 PM	LTX	PFRC-2	MRX	NSTX-U Test Cell				
P1-5	J. Berkery	P1-15	F. Wang	P2-5	J. Park	P2-15	Y. Jung	4:30 PM	Tour ends in PPPL Lobby near Plasma Hutch							
P1-6	G. Canal	P1-16	S. Medley	P2-6	K. Yamasaki	P2-16	H. Togashi	5:00 PM	Bus leaves PPPL for Prospect House / Nassau Inn							
P1-7	I. Waters	P1-17	T. Bigelow	P2-7	M. Boyer	P2-17	M. Lee									
P1-8	P. Jandovitz	P1-18	J. Jo	P2-8	Z. Ilhan	P2-18	S.-K. Kim									
P1-9	W. Wang	P1-19	Y. Nozawa	P2-9	R. Yoneda	P2-19	J. Matteucci									
P1-10	J. Ruiz-Ruiz	P1-20	N. Tsujii	P2-10	S. McNamara	P2-20	Z. Wang									
Catered wine reception at Princeton Art Museum 6-8PM				Banquet at Prospect House 6PM - 8PM												

- 3 events during workshop:
  - Reception at Art Museum
  - NSTX-U / PPPL tour
  - Banquet at Prospect House

Extended Oral 30 + 5 min  
Oral 15 + 5 min

Poster Width = 96 inches = 240 cm, Height = 48 inches = 120 cm, 2 hours duration

# PPPL / NSTX-U Tours

- **Please confirm that you are signed up with Carol Ann / Joanne / Jen**
- Buses leave campus ~12:15PM Thursday
- Eat lunch in PPPL cafeteria
  - Food served until 1:30PM
- Meet in PPPL lobby at 1:45PM sharp for tour
- Split into 4 groups for guided tour
- Return to lobby by 4:30PM
- Buses leave from PPPL no later than 5PM
  - Returning to Nassau Inn, Lot 21, or Prospect House

# Reception & banquet tickets still available

- **All** participants must register  
<http://istw-2015.pppl.gov/registration-and-payment>
- We have ~45-50 reception and banquet participants each
- **Would like to get ~60 banquet participants to use “Garden Room” at Prospect House**
- Sign up and pay ASAP online or at registration desk:  
<https://ppplconfreg.pppl.gov/istw2015-reg/dinnerreg.aspx>  
– Today is last day!

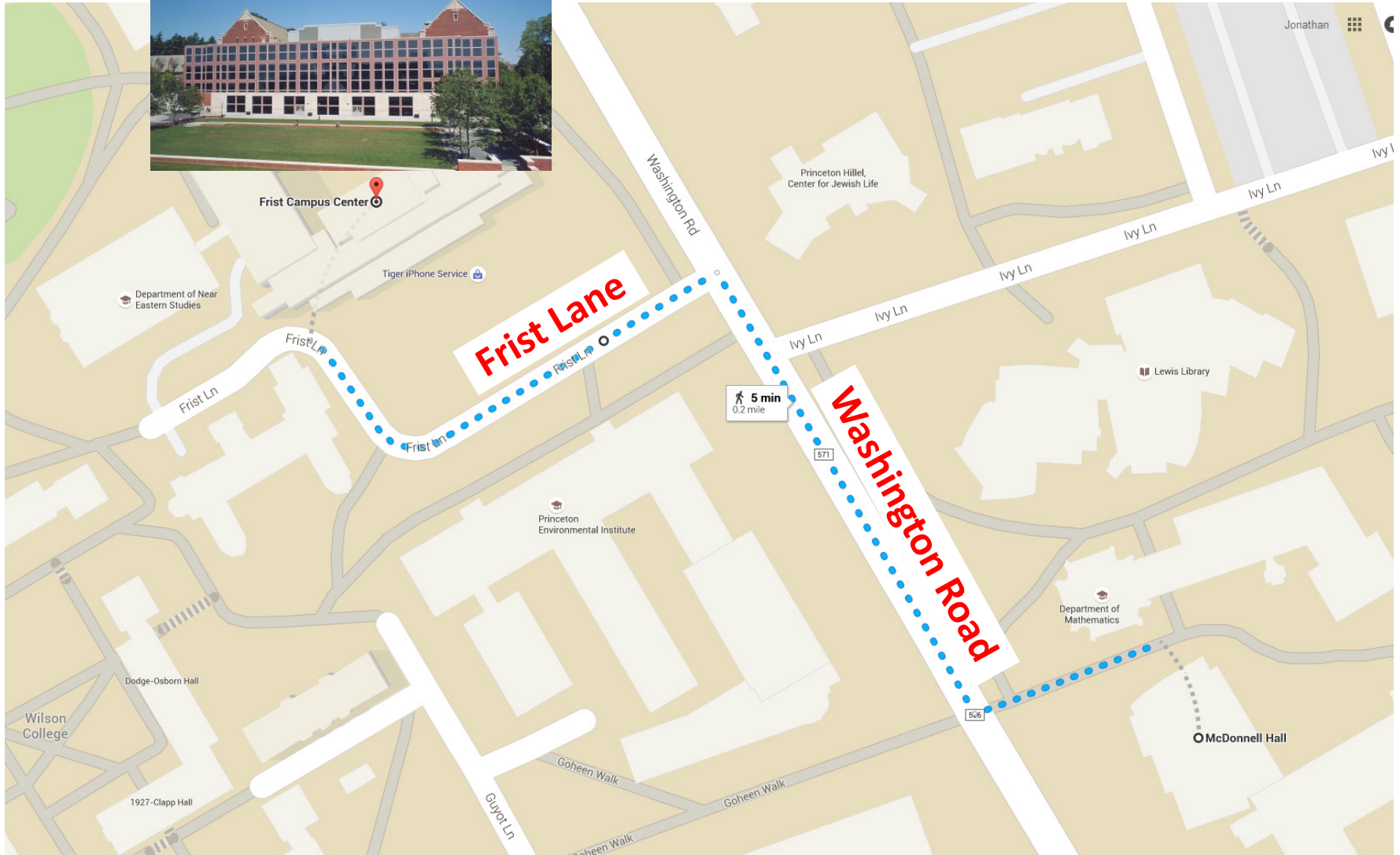


Art Museum Wine Reception - \$30  
Prospect House Banquet - \$70





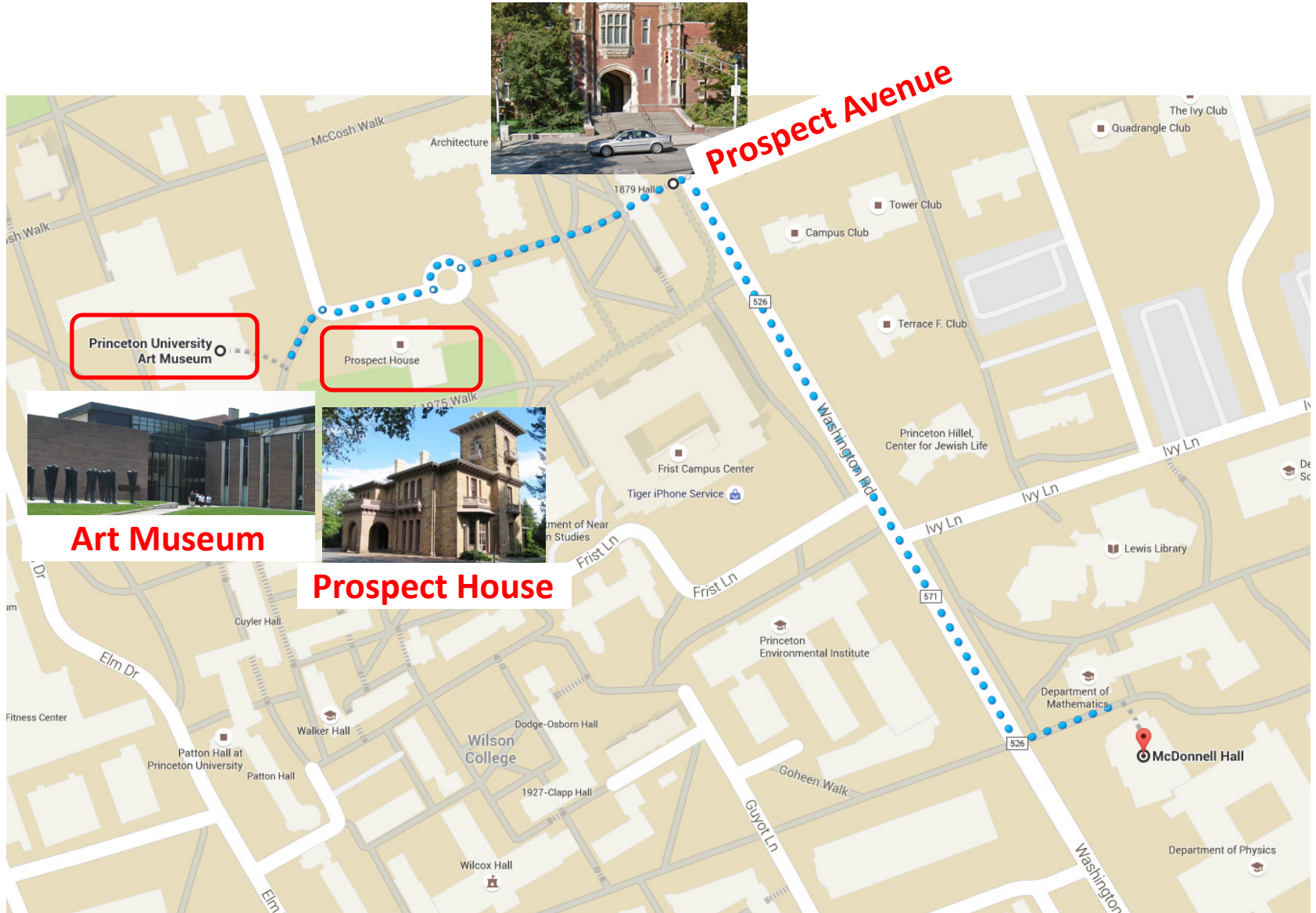
# Map for walking from McDonnell Hall to Frist Campus Center for Lunch



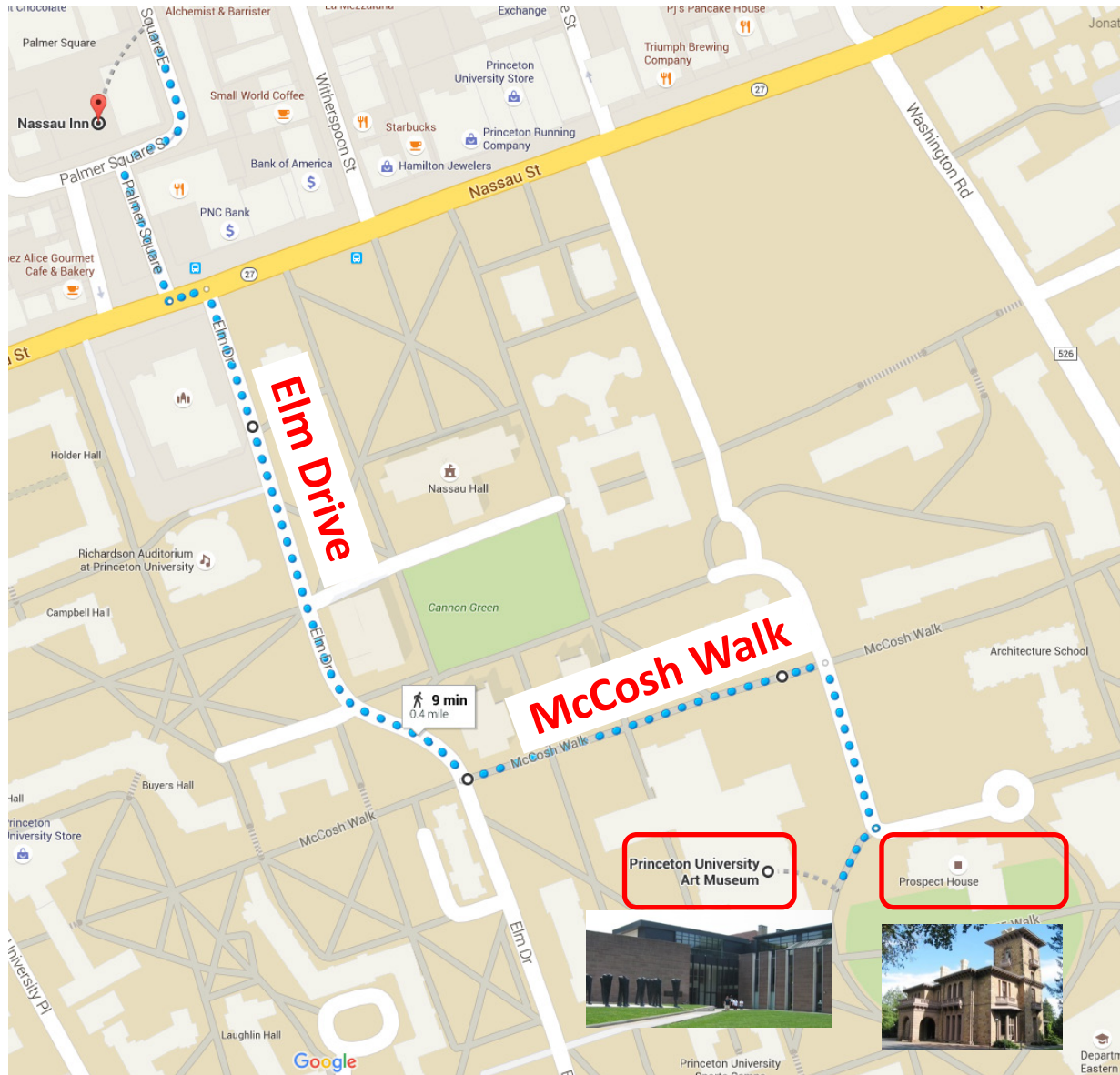
# Restaurants on Nassau Street near Palmer Square / Nassau Inn



# Map for walking from McDonnell Hall to Art Museum (Reception) & Prospect House (Banquet)



# Map for walking from Nassau Inn to/from Art Museum (Reception) & Prospect House (Banquet)



# If you are not staying at Nassau Inn, do you need transportation back to your hotel?

- Options:

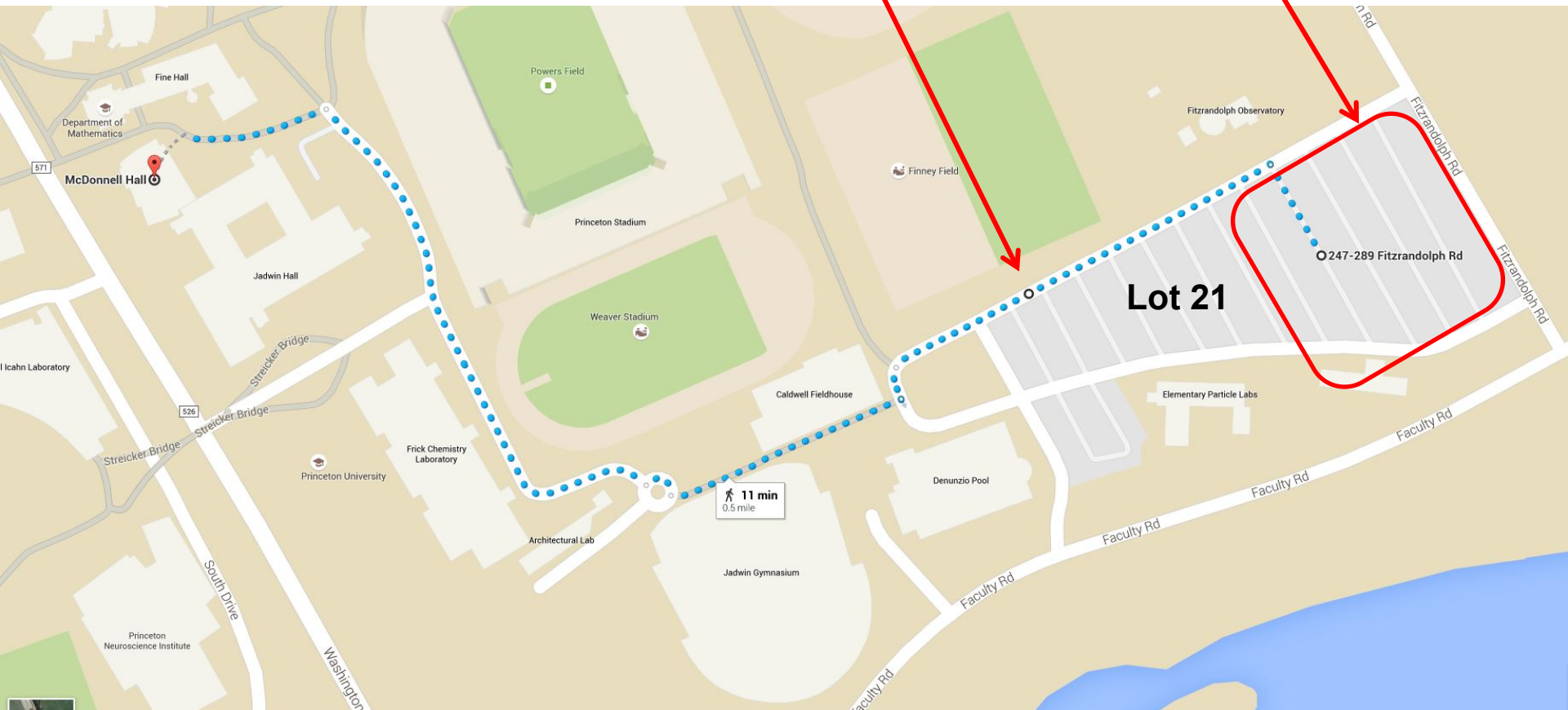
- Jon has PPPL van – can take 5-6 people from Lot 21 to somewhere...
- Get your hotel's van to pick you up
- Share a taxi

- **See Carol Ann, Joanne, Jen for assistance!**

# Map for walking from Lot 21 to McDonnell Hall

Lot 21 Tiger Transit bus stop

Visitor Parking Area



Lot 21	Jadwin
5:07 AM	5:11 AM
5:37 AM	5:41 AM
6:07 AM	6:11 AM
6:37 AM	6:41 AM
7:07 AM	7:11 AM
7:22 AM	7:26 AM
7:37 AM	7:41 AM
7:52 AM	7:56 AM
8:07 AM	8:11 AM
8:22 AM	8:26 AM
8:37 AM	8:41 AM
8:52 AM	8:56 AM
9:07 AM	9:11 AM
9:37 AM	9:41 AM
10:07 AM	10:11 AM
10:37 AM	10:41 AM
11:07 AM	11:11 AM
11:37 AM	11:41 AM
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2:37 PM	2:41 PM
3:07 PM	3:11 PM
3:37 PM	3:41 PM
4:07 PM	4:11 PM
4:22 PM	4:26 PM
4:37 PM	4:41 PM
4:52 PM	4:56 PM
5:07 PM	5:11 PM
5:22 PM	5:26 PM
5:37 PM	5:41 PM
5:52 PM	5:56 PM
6:07 PM	6:11 PM
6:37 PM	6:41 PM
7:07 PM	7:11 PM
7:37 PM	7:41 PM
8:07 PM	8:11 PM
8:37 PM	8:41 PM

Real-time bus tracking webpage: <http://princeton.transloc.com/>  
 Phone apps: <http://princeton.transloc.com/info/mobile>

← Timetable for Tiger Transit bus from Lot 21 to Jadwin (next to McDonnell)

Timetable for Tiger Transit bus from Jadwin back to Palmer Square / Nassau Inn →

Forrestal Campus	
Jadwin	Palmer Square
7:48 AM	7:55 AM
8:48 AM	8:55 AM
9:48 AM	9:55 AM
10:48 AM	10:55 AM
11:48 AM	11:55 AM
12:48 PM	12:55 PM
1:48 PM	1:55 PM
2:48 PM	2:55 PM
3:48 PM	3:55 PM
4:48 PM	4:55 PM
5:48 PM	5:55 PM
6:48 PM	6:55 PM
Jadwin	Palmer Square

# For PPPL /NSTX-U employees wishing to take Tiger Transit Bus from PPPL to/from Jadwin Hall, here is Forrestal Campus timetable:

Forrestal Campus											
Princeton Station	Lakeside	Lewis Library	Dean Mathey	Princeton Hospital	Forrestal	PPPL	Lakeview	Dean Mathey	Jadwin	Palmer Square	Princeton Station
7:00 AM	7:05 AM	7:09 AM	7:13 AM	7:20 AM	7:25 AM	7:29 AM	7:37 AM	7:43 AM	7:48 AM	7:55 AM	7:59 AM
8:00 AM	8:05 AM	8:09 AM	8:13 AM	8:20 AM	8:25 AM	8:29 AM	8:37 AM	8:43 AM	8:48 AM	8:55 AM	8:59 AM
9:00 AM	9:05 AM	9:09 AM	9:13 AM	9:20 AM	9:25 AM	9:29 AM	9:37 AM	9:43 AM	9:48 AM	9:55 AM	9:59 AM
10:00 AM	10:05 AM	10:09 AM	10:13 AM	10:20 AM	10:25 AM	10:29 AM	10:37 AM	10:43 AM	10:48 AM	10:55 AM	10:59 AM
11:00 AM	11:05 AM	11:09 AM	11:13 AM	11:20 AM	11:25 AM	11:29 AM	11:37 AM	11:43 AM	11:48 AM	11:55 AM	11:59 AM
12:00 PM	12:05 PM	12:09 PM	12:13 PM	12:20 PM	12:25 PM	12:29 PM	12:37 PM	12:43 PM	12:48 PM	12:55 PM	12:59 PM
1:00 PM	1:05 PM	1:09 PM	1:13 PM	1:20 PM	1:25 PM	1:29 PM	1:37 PM	1:43 PM	1:48 PM	1:55 PM	1:59 PM
2:00 PM	2:05 PM	2:09 PM	2:13 PM	2:20 PM	2:25 PM	2:29 PM	2:37 PM	2:43 PM	2:48 PM	2:55 PM	2:59 PM
3:00 PM	3:05 PM	3:09 PM	3:13 PM	3:20 PM	3:25 PM	3:29 PM	3:37 PM	3:43 PM	3:48 PM	3:55 PM	3:59 PM
4:00 PM	4:05 PM	4:09 PM	4:13 PM	4:20 PM	4:25 PM	4:29 PM	4:37 PM	4:43 PM	4:48 PM	4:55 PM	4:59 PM
5:00 PM	5:05 PM	5:09 PM	5:13 PM	5:20 PM	5:25 PM	5:29 PM	5:37 PM	5:43 PM	5:48 PM	5:55 PM	5:59 PM
6:00 PM	6:05 PM	6:09 PM	6:13 PM	6:20 PM	6:25 PM	6:29 PM	6:37 PM	6:43 PM	6:48 PM	6:55 PM	6:59 PM
Princeton Station	Lakeside	Lewis Library	Dean Mathey	Princeton Hospital	Forrestal	PPPL	Lakeview	Dean Mathey	Jadwin	Palmer Square	Princeton Station