Welcome to INSS 2019!

12th International Neutrino Summer School Aug 5 – Aug 16, 2019



Program / school overview

Detailed schedule / some presentation materials in the indico "Timetable" pages

Schedule-at-a-glance linked from indico page

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am	Welcome	Neutrino Detection II	Solar and Reactor	Theories Beyond the SM	Introduction to	
10:00 am	Intro. to the Physics of Massive Neutrinos I	Mark Messier (One West WH1W)	Neutrino Theory Joachim Kopp (One West WH1W)	and Neutrinos Joachim Kopp (One West WH1W)	Leptogenesis Jessica Turner (One West WH1W)	
11:00 am	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break	
11:00 am	Break	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor Neutrino Experiments	Short-Baseline Expts. and Phenom	Tours 1 4	Week 1
12:00 pm	Intro. to the Physics of Massive Neutrinos II Concha González-Garcia	Concha González-García (One West WH1W)	Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial	WOOK 1
1:00 pm	(One West WH1W)	Lunch break	Lunch break	Lunch break	WH7X	
1.00 piii	Lunch break (Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	Lunch break	
2:00 pm	(relillationale)	Long-Baseline Oscillation Experiments	Statistical Methods in Neutrino Physics	Origin and Nature of Neutrino Mass I	(
	Tours 1 4 Meet in front of atrium	Patricia Vahle (One West WH1W)	Thomas R. Junk	Goran Senjanović (One West WH1W)	Origin and Nature of Neutrino Mass II	
3:00 pm	Science Commun. Tutorial	Break		Break	Goran Senjanović (One West WH1W)	
	WH8X		Break		W&C break (WH2X)	
4:00 pm	Break	Group Working Time	Fermilab Colloquium			
5:00 pm	Neutrino Detection I	(Atrium, Oscillatorium WH13NW, Homet's Nest WH8X)	Goran Senjanović (One West WH1W)	Group Working Time (Atrium, Oscillatorium WH13WW,	Group Working Time	
3.00 piii	Mark Messier		Group Working Time	Small dining room WH1SW)	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	
6:00 pm	(One West WH1W)		Small dining room WH1SW)			
	Organize working groups					
7:00 pm	Welcome reception	Poster Session		BBQ Dinner		
	(Atrium)	, , , , , , , , , , , , , , , , , , , ,		(Buses depart WH at 8:00 pm)		
8:00 pm					Optional pub crawl	
0.00					near hotel	
9:00 pm						

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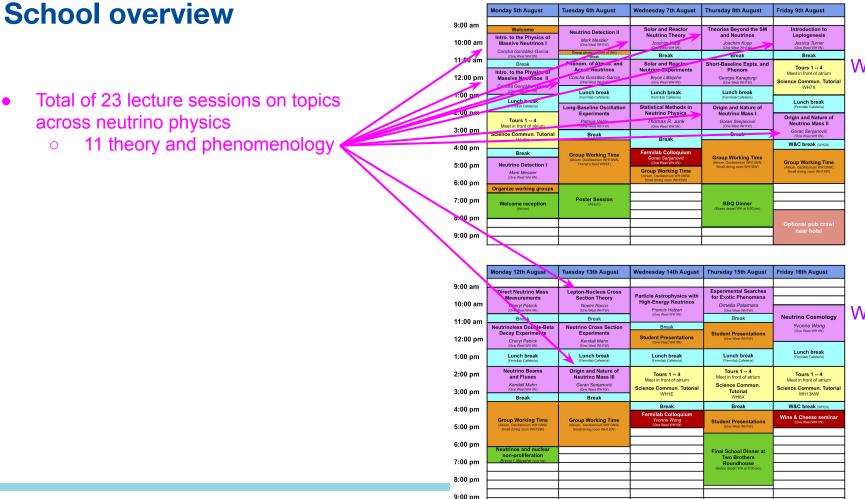
	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One West WHTW)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One West WHTW)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WHTW)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
11.00 am	Neutrinoless Double-Beta	Neutrino Cross Section	Break		Yvonne Wong (One West WH1W)
12:00 pm	Decay Experiments Cheryl Patrick (One West WH1W)	Experiments Kendall Mahn (One West WH1W)	Student Presentations (One West WH1W)	Student Presentations (One West WHTW)	(One West Printy)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes	Origin and Nature of Neutrino Mass III	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium
3:00 pm	Kendall Mahn (One West WH1W)	Goran Senjanović (One West WH1W)	Science Commun. Tutorial	Tutorial	Science Commun. Tutorial
-	Break	Break		WH8X	
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Alnium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wang (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WH1W)
6:00 pm	Neutrinos and nuclear				
7:00 pm	non-proliferation Bryce Littleiohn www			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

Total of 23 lecture sessions on topics across neutrino physics

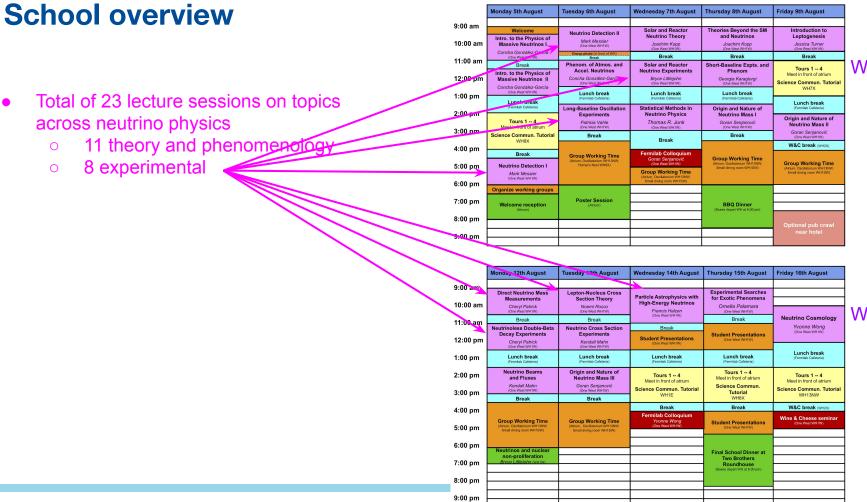
	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am						
9.00 am	Welcome	Neutrino Detection II	Solar and Reactor	Theories Beyond the SM	Introduction to	
10:00 am	Intro. to the Physics of	Mark Messier	Neutrino Theory	and Neutrinos	Leptogenesis	
10:00 am	Massive Neutrinos I	(One West WH1W)	Joachim Kopp (One West WH1W)	Joachim Kopp (One West WH1W)	Jessica Turner (One West WH1W)	
44.00	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break	
11:00 am	Break	Phenom. of Atmos. and	Solar and Reactor	Short-Baseline Expts. and	Tours 1 4	Week 1
	Intro. to the Physics of	Accel. Neutrinos	Neutrino Experiments	Phenom	Meet in front of atrium	VVCCKI
12:00 pm	Massive Neutrinos II	Concha González-García (One West WH1W)	Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Science Commun. Tutorial	
	Concha González-García (One West WH1W)	Lunch break	Lunch break	Lunch break	WH7X	
1:00 pm	Lunch break	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	Lunch break	
	(Fermilab Cafeteria)	Long-Baseline Oscillation	Statistical Methods in	Origin and Nature of	(Fermilab Cafeteria)	
2:00 pm		Experiments	Neutrino Physics	Neutrino Mass I	Origin and Nature of	
	Tours 1 4 Meet in front of atrium	Patricia Vahle	Thomas R. Junk	Goran Senjanović	Neutrino Mass II	
3:00 pm	Science Commun. Tutorial	Break		Break	Goran Senjanović (One West WH1W)	
	WH8X		Break		W&C break (WH2X)	
4:00 pm	Break		Fermilab Colloquium		WGC Dreak (WH2X)	
	Diedk	Group Working Time (Atrium, Oscillatorium WH13NW,	Goran Senjanović	Group Working Time	O	
5:00 pm	Neutrino Detection I	Hornet's Nest WH8X)	(One West WH1W)	(Afrium, Osofistonum WH13VW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW,	
	Mark Messier (One West WH1W)		Group Working Time (Atrium, Oscillatorium WH13NW,		Small dining room WH1SW)	
6:00 pm			Small dining room WH1SW)			
	Organize working groups					
7:00 pm	Welcome reception	Poster Session		BBQ Dinner		
	(Atrium)	(-2000)		(Buses depart WH at 6:00 pm)		
8:00 pm						
					Optional pub crawl	
9:00 pm					near hotel	

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	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One West WH1W)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One West WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen (One West WH1W)	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break		Break	Neutrino Cosmology
	Neutrinoless Double-Beta Decay Experiments	Neutrino Cross Section Experiments	Break	Student Presentations	Yvonne Wong (One West WH1W)
12:00 pm	Cheryl Patrick (One West WH1W)	Kendall Mahn (One West WH1W)	Student Presentations (One West WH1W)	(One West WHTW)	
1:00 pm	Lunch break (Fernilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermitab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes	Origin and Nature of Neutrino Mass III	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium
3:00 pm	Kendall Mahn (One West WH1W)	Goran Senjanović (One West WHTW)	Science Commun. Tutorial	Science Commun. Tutorial	Science Commun. Tutorial
	Break	Break	WHIE	WH8X	WHISINW
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Arrium, Oscillatorium WH13AW, Small clining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WH1W)
6:00 pm	Neutrinos and nuclear			F	
7:00 pm	non-proliferation Bryce Littleiohn www.			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					



Week 1



Week 1

- Total of 23 lecture sessions on topics across neutrino physics
 - 11 theory and phenomenology
 - 8 experimental
 - 3 combined theory / phenom / experiment

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am						
0.00 a	Welcome	Neutrino Detection II	Solar and Reactor Neutrino Theory	Theories Beyond the SM and Neutrinos	Introduction to Leptogenesis	
10:00 am	Intro. to the Physics of Massive Neutrinos I	Mark Messier (One West WH1W)	Joachim Kopp	Joachim Kopp	Jessica Turner	
	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	(One West WHIW) Break	(One West WH (W) Break	(One West WH1W) Break	
11:00 am	Break	Phenom. of Atmos. and	Solar and Reactor	Short-Baseline Expts. and	Tours 1 4	Week 1
12:00 pm	Intro. to the Physics of Massive Neutrinos II	Accel. Neutrinos Concha González-García	Neutrino Experiments Bryce Littlejohn	Phenom Georgia Karagiorgi	Meet in front of atrium	AACCK I
12.00 pm	Concha González-Garcia	(One West WH1W)	(One West WH1W)	(One West WH1W)	Science Commun. Tutorial	
1:00 pm	(One West WH1W)	Lunch break (Fermilab Cafeteria)	Lunch Greak	Lunch break (Fermilab Cafeteria)	111174	
	Lunch break (Fermilab Cafeteria)	Long-Baseline Oscillation	Statistical Methods in	Origin and Nature of	Lunch break (Fermilab Cafeteria)	
2:00 pm		Experiments	Neutrino Physics	Neutrino Mass I	Origin and Nature of	
2.00	Tours 1 4 Meet in front of atrium	Patricic vahle (C., West WH1W)	Thomas R. Junk (One West WH1W)	Goran Senjanović (One West WH1W)	Neutrino Mass II	
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)	
4:00 pm					W&C break (WH2X)	
	Break	Group Working Time	Fermilab Colloquium Goran Senjanović	Group Working Time		
5:00 pm	Neutrino Detection I	Homet's Nest WH8X)	(One West WHTW) Group Working Time	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW,	
	Mark Messier (One West WH1W)		(Afrium, Oscillatorium WH13NW, Small dining room WH1SW)		Small dining room WH1SW)	
6:00 pm	Organize working groups					
7:00 p.:-	- 00 /	Poster Session				
pi	Welcome reception (Atrium)	(Atrium)		BBQ Dinner (Buses depart WH at 8:00 pm)		
8:00 pm						
					Optional pub crawl near hotel	
9:00 pm					110101	

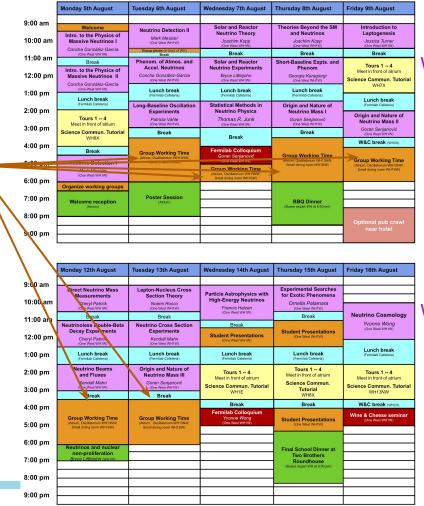
	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One West WH1W)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One West WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searching for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
12:00 pm	Neutrinoless Double-Beta Decay Experiments Cheryl Patrick (One West WHTW)	Neutrino Cross Section Experiments Kendall Mahn (One West WHTW)	Student Presentations (One West WHTW)	Student Presentations (One West WH1W)	Yvonne Wong (One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermitab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes Kendall Mahn	Origin and Nature of Neutrino Mass III Goran Senjanović (One West WHTW)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial	Tours 1 4 Meet in front of atrium Science Commun. Tutorial	Tours 1 4 Meet in front of atrium Science Commun. Tutorial
3:00 pm	Break	Break	WH1E	WH8X	WH13NW
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Arnum, Oscillatorium WH13kW, Small clining room WH15W)	Group Working Time (Artum, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WH1W)
6:00 pm	N				
7:00 pm	Neutrinos and nuclear non-proliferation Bryce Littleiohn เพศเพก			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

- Total of 23 lecture sessions on topics across neutrino physics
 - 11 theory and phenomenology
 - 8 experimental
 - 3 combined theory / phenom / experiment
 - 1 statistical methods

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am						
5.00 am	Welcome	Neutrino Detection II	Solar and Reactor Neutrino Theory	Theories Beyond the SM and Neutrinos	Introduction to Leptogenesis	
10:00 am	Intro. to the Physics of Massive Neutrinos I	Mark Messier (One West WH1W)	Joachim Kopp (One West WH1W)	Josehim Kopp (One West WH1W)	Jessica Turner (One West WH1W)	
11:00 am	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break	1
11:00 am	Break	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor	Short-Baseline Expts. and Phenom	Tours 1 4	Week 1
12:00 pm	Intro. to the Physics of Massive Neutrinos II Concha González-García	Concha González-García (One West WH1W)	Neutrino Experiments Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial	VVCCR
1:00 pm	(One West WHTW)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X Lunch break	
2:00 pm	(Fermilab Cafeteria)	Long-Baseline Oscillation	Statistical Methods in	Origin and Nature of	(Fermilab Cafeteria)	
	Tours 1 4 Meet in front of atrium	Experiments Patricia Vahle (One West WHIV)	Neutrino Physics Thomas R. Junk (One West WH1W)	Neutrino Mass I Goran Senjanović (One West WHTW)	Origin and Nature of Neutrino Mass II	
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)	
4:00 pm	WH8X		Бгеак		W&C break (WHZX)	
4.00 pm	Break	Group Working Time	Fermilab Colloquium Goran Senianović	Group Working Time		
5.00 pm	Neutrino Detection I	(Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	(One West WH1W)	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW.	
	Mark Messier (One West WH1W)		Group Working Time (Atrium, Oscillatorium WH13NW,		Small dining room WH1SW)	
6:00 pm	Organize working groups		Small dining room WH1SW)			
	Organize working groups					
7:00 pm	Welcome reception	Poster Session (Afrium)		BBQ Dinner (Buses depart WH at 6:00 pm)		
8:00 pm	(Atrium)			(buses depart with at 0:00 pm)		
o.oo piii	·	·			Optional pub crawl	
9:00 pm					near hotel	
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	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One West WH1W)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One West WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	,	Break	Neutrino Cosmology
12:00 pm	Neutrinoless Double-Beta Decay Experiments Cheryl Patrick (One West WH1W)	Neutrino Cross Section Experiments Kendall Mahn (One West WH1W)	Student Presentations (One West WH1W)	Student Presentations (One West WH1W)	Yvonne Wong (One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes Kendall Mahn	Origin and Nature of Neutrino Mass III Goran Senjanović	Tours 1 – 4 Meet in front of atrium Science Commun. Tutorial	Tours 1 4 Meet in front of atrium Science Commun.	Tours 1 4 Meet in front of atrium Science Commun. Tutorial
3:00 pm	(One West WH1W) Break	(One West WH1W) Break	WH1E	Tutorial WH8X	WH13NW
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Arium, Osotilatorium WH13NW, Small dining room WH15W)	Group Working Time (Afrium, Decilatorium WH13NW, Small dining room WH15W)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WH1W)
6:00 pm	Neutrinos and nuclear				
7:00 pm	Neutrinos and nuclear non-proliferation Bryce Littleichn (WHTW)			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

- Total of 23 lecture sessions on topics across neutrino physics
- 10.5 hours of scheduled working group time
 - Students assigned to groups of ~5
 - Work on open-ended problems



Week 1

- Total of 23 lecture sessions on topics across neutrino physics
- 10.5 hours of scheduled working group time
 - Students assigned to groups of ~5
 - Work on open-ended problems
 - Will organize work at 6:00 pm today

Problems, groups posted to indico

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am					
0.00 a	Welcome	Neutrino Detection II	Solar and Reactor Neutrino Theory	Theories Beyond the SM and Neutrinos	Introduction to Leptogenesis
10:00 am	Intro. to the Physics of Massive Neutrinos I	Mark Messier (One West WH1W)	Joachim Kopp (One West WH1W)	Joachim Kopp (One West WH1W)	Jessica Turner (One West WH1W)
11:00 am	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break
11.00 am	Break	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor	Short-Baseline Expts. and Phenom	Tours 1 4
12:00 pm	Intro. to the Physics of Massive Neutrinos II Concha González-García	Concha González-García (One West WH1W)	Neutrino Experiments Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial
1:00 pm	(One West WHIW)	Lunch break (Fermilab Cafeteria)	Lunch break (Fernilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X Lunch break
2.00	(Fermilab Cafeteria) Long-Baseline Oscillation		Statistical Methods in	Origin and Nature of	(Fermilab Cafeteria)
2:00 pm	Tours 1 4 Meet in front of atrium	Experiments Patricia Vahle (One West WH1W)	Neutrino Physics Thomas R. Junk (One West WH1W)	Neutrino Mass I Goran Senjanović (One West WH1W)	Origin and Nature of Neutrino Mass II
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)
4:00 pm	WH8X	Вгеак	Бгеак		W&C break (WH2X)
5:00 pm	Break Neutrino Detection I	Group Working Time (Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	Fermilab Colloquium Goran Senjanović (One West WH1W)	Group Working Time (Atrium, Oscillatorium WH13NW,	Group Working Time
	Mark Messier (One West WH1W)		Group Working Time (Advium, Oscillatorium WH13NW, Small clining room WH1SW)	Small dining room WH1SW)	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)
6:00 pm	Organize working groups				
7:00 pm	Welcome reception	Poster Session (Atrium)		BBQ Dinner	
8:00 pm	(Atrium)			(Buses depart WH at 6:00 pm)	
					Optional pub crawl
9:00 pm					near hotel

Week 2

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August	
9:00 am						
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One Wast WHTW)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One Wast WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WH1W)		,
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology	١V
11.00 um	Neutrinoless Double-Beta	Neutrino Cross Section	Break		Yvonne Wong	
12:00 pm	Decay Experiments Cheryl Patrick (One West WH1W)	Experiments Kendall Mahn (One West WH1W)	Student Presentations (One West WH1W)	Student Presentations (One West WHTW)	,	
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	
2:00 pm	Neutrino Beams and Fluxes	Origin and Nature of Neutrino Mass III	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	
3:00 pm	Kendall Mahn (One West WH1W)	Goran Senjanović (One West WH1W)	Science Commun. Tutorial	Science Commun. Tutorial	Science Commun. Tutorial WH13NW	
	Break	Break	300	WH8X		
4:00 pm			Break	Break	W&C break (WH2X)	
5:00 pm	Group Working Time (Alnium, Oscillatorium WH13NW, Small clining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WHTW)	
6:00 pm						
7:00 pm 8:00 pm	Neutrinos and nuclear non-proliferation Bryce Littleiohn мичи			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)		
9:00 pm						

- Total of 23 lecture sessions on topics across neutrino physics
- 10.5 hours of scheduled working group time
- Student presentations of group work
 - APS-style, 8+2 minutes
 - Prizes for best presentations

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am			Solar and Reactor	Theories Beyond the SM	Introduction to	
10:00 am	Welcome Intro. to the Physics of Massive Neutrinos I Concha González-Garcia	Neutrino Detection II Mark Messier (One West WHIW)	Neutrino Theory Joachim Kopp (One West WH1W)	and Neutrinos Joachim Kopp (One West WH1W)	Leptogenesis Jessica Turner (One West WH1W)	
11:00 am	(One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break	107 1 4
12:00 pm	Break Intro. to the Physics of Massive Neutrinos II	Phenom. of Atmos. and Accel. Neutrinos Concha González-García (One West WHTW)	Solar and Reactor Neutrino Experiments Bryce Littlejohn (One West WH1W)	Short-Baseline Expts. and Phenom Georgia Karagiorgi (One West WHTW)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial	Week 1
1:00 pm	Concha González-García (One West WH1W) Lunch break	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X Lunch break	
2:00 pm	(Fermitab Cafeteria) Tours 1 4 Meet in front of atrium	Long-Baseline Oscillation Experiments Patricia Vahle (One West WHTW)	Statistical Methods in Neutrino Physics Thomas R. Junk (One West WHTW)	Origin and Nature of Neutrino Mass I Goran Senjanović (One West WHTW)	(Fermilab Cafeteria) Origin and Nature of Neutrino Mass II	
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)	
4:00 pm	WH8X Break	Group Working Time	Fermilab Colloquium		W&C break (WHZX)	
5:00 pm	Neutrino Detection I Mark Messier (One West WH1W)	(Atrium, Oscillatorium WH13NW, Homet's Nest WH8X)	Goran Senjanović (One West WHTW) Group Working Time (Ashum, Osolitaterium WHTSNW, Smell dning room WHTSNW)	Group Working Time (Afrium, Osofistorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Osolilatorium WH13NW, Small dining room WH1SW)	
6:00 pm	Organize working groups					
7:00 pm	Welcome reception	Poster Session (Adrium)		BBQ Dinner (Buses depart WH at 6:00 pm)		
8:00 pm					Optional pub crawl	
9:00 pm					near hotel	

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August	
9:00 am						
5.00 dill	Direct Neutrino Mass Measurements	Lepton-Nucleus Cross Section Theory	Particle Astrophysics with	Experimental Searches for Exotic Phenomena		
10:00 am	Measurements Cheryl Patrick	Noemi Rocco	Wigh-Energy Neutrinos	Ornella Palamara		
	(One WH1W)	(One West WH1W)	Francis Halzen (One West WHTM)	(One West WH1W)	Neutrino Cosmology	Week 2
11:00 am	Break Neutrinoless Double-Beau	Neutrino Cross Section	Break	Break	Yvonne Wona	TTOOK Z
	Decay Experiments	Experiments		Student Presentations	(One West WH1W)	
12:00 pm	Cheryl Patrick (One West WH1W)	Kendali Mahn	Student Presentations (One West WH1W)	(One West WH1W)		
4.00	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break	
1:00 pm	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	
2:00 pm	Neutrino Beams	Origin and Nature of	Tours 1 4	Tours 1 4	Tours 1 4	
2.00 p	and Fluxes Kendall Mahn	Neutrino Mass III Goran Senianović	Meet in front of atrium	Meet in front of atrium Science Commun.	Meet in front of atrium	
3:00 pm	(One West WH1W)	(One West WH1W)	Science Commun. Tutorial	Tutorial	Science Commun. Tutorial	
	Break	Break		WH8X		
4:00 pm			Break	Break	W&C break (WH2X)	
	Group Working Time	Group Working Time	Fermilab Colloquium Yvonne Wong	Student Presentations	Wine & Cheese seminar	
5:00 pm	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	(One West WH1W)	(One West WH1W)	ζ=	
6:00 pm	Neutrinos and nuclear			Final School Dinner at		
7.00	non-proliferation Bryce Littleighn (WHY)			Two Brothers		
7:00 pm	DIVES EROSIONI WHITE			Roundhouse (Buses depart WH at 6:00 pm)		
mq 00:8						
0.00 piii						
9:00 pm						
p						

School overview		Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
	9:00 am 10:00 am	Welcome Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WH1W)	Solar and Reactor Neutrino Theory Joachim Kopp	Theories Beyond the SM and Neutrinos Joschim Kopp	Introduction to Leptogenesis Jessica Tumer
	11:00 am	Concha González-García (One West WHIW) Break	Group phote (in front of WH) Break Phenom. of Atmos. and	(One West WHTW) Break Solar and Reactor	(One West WHTW) Break Short-Baseline Expts. and	(One West WH1W) Break
	12:00 pm	Intro. to the Physics of Massive Neutrinos II Concha González-Garcia	Accel. Neutrinos Concha González-García (One West WHTW)	Neutrino Experiments Bryce Littlejohn (One West WH1W)	Phenom Georgia Karagiorgi (One West WH1W)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH7X
 Total of 23 lecture sessions on topics across 	1:00 pm	(One West WH1W) Lunch break (Fermilab Cafeteria)	Lunch break (Fermiab Cafeteria) Long-Baseline Oscillation	Lunch break (Fermilab Cafeteria) Statistical Methods in	Lunch break (Fermilab Cafety)	Lunch break (Fermilab Cafeteria)
neutrino physics	2:00 pm 3:00 pm	Tours 1 4 Meet in front of atrium	Experiments Patricia Vahle (One West WH1W)	Neutrino Physics Thomas is. Junk (One West WH1W)	Neutrino Mass I Goran Senjanović (One West WHTW)	Origin and Nature of Neutrino Mass II Goran Senjanović
	4:00 pm	Science Commun. Tutorial WH8X	Break	Break Fermilab Colloquium	Break	(One West WH1W) W&C break (WH2X)
 10.5 hours of scheduled working group time 	5:00 pm	Neu+:o Detection I	Group Working Time (Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	Goran Senjanović (One West WHIW) Group Working Time	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH15W)	Group Working Time (Athum, Oscillatorium WH13NW, Small dining room WH1SW)
	o:00 pm	(One West WH1W) Organize working groups		(Arium, Oscillatorium WH139W, Small clining room WH15W)		
 Student presentations of group work 	7:00 pm	Welcome reception (Atrium)	Poster Session (Atrium)		BBQ Dinner (Buses depart WH at 6:00 pm)	
	8:00 pm 9:00 pm					Optional pub crawl near hotel
 Tours and tutorials 						
 Split into groups of ~18 		Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
 4 groups visit facilities 	9:00 am	Direct Neutrino Mass	Lepton-Nucleus Cross		1	
	10·00 am	Measurements	Section Theory	Particle Astrophysics with High-Energy Neutrinos	Experimental Searches for Exotic Phenomena	
	10:00 am 11:00 am	Cheryl Patrick (One West WH1W) Croak	Section Theory Noemi Rocco (One West WH1W) Break	High-Energy Neutrinos Francis Halzen (One West WH1W)		Neutrino Cosmology
Muon g-2 experiment		Cheryl Patrick (One West WHTW) Croak Moutrinoless Double-Beta Decay Syperiments	Section Theory Noemir Rocco (One West WHYW) Break Neutrino Cross Section Exp. Timents Kendall Mahn	High-Energy Neutrinos Francis Halzen	for Exotic Phenomena Ornella Palamara (One West WH1W)	Neutrino Cosmology Yvonne Wong (One West VHTW)
Muon g-2 experimentDØ detector	11:00 am	Cheryl Patrick (Coe West WHYW) Chearly Partitioness Double-Beta Decy "Voeriments Cheryl Patrick (Coe West WHYW) Luncia "Peak (Peantab Carlos on	Section Theory Noemi Rocco (one West Wirthin) Break Neutrino Cross Section Exp. diments Kendall Matin (One West Wirthin) Lunch break (Fermillo Caleteria)	High-Energy Neutrinos Francis Halzen (One West WH1W) Break	for Exotic Phenomena Omelia Palamara (one West Wirthy) Break Student Presentations (One West Wirthy) Lunch break	Yvonne Wong
 Muon g-2 experiment DØ detector SRF + SC magnet facilities 	11:00 pm 12:00 pm 1:00 pm 2:00 pm	Charyl Patrick Charles Bouble-Bera Deca, Yeoriments Charles Patrick Che West With Will Lunco Areak (renda Carell Was Neutrino Beams and Fluxes Kondall Mahn	Section Theory Noenth Rocco (One West WHIW) Break Neutrino Cross Section Experiments Kendall Mahn (One West WHIW)	High-Energy Neutrinos Francis Halzen (One West WHW) Break Student Presentations (One West WHW)	for Exotic Phenomena Ornella Palamarra Cross West Wattryy Break Student Presentations Cross West Wattryy Lunch break Tours 1 - 4 Meet in front of arium Science Commun.	Yvonne Wong (One West WH1W)
 Muon g-2 experiment DØ detector SRF + SC magnet facilities NOvA / MINOS / MINERvA 	11:00 am 12:00 pm 1:00 pm	Charyl Patrick (Cha West Wester) Charal Mastrinoless Double-Beta Deca, "Evocriments Charyl Patrick Charles Wester) Lunc, "Yeak (Femilia Catego Neutrino Beams and Fluxes	Section Theory Noam Rocco (One West WHYN) Break Nautrino Cross Section Experiments Kendal Mahn One West WHYN) Lunch Dreak (Femilia Calefornia) Origin and Nature of Neuron Mass III	High-Energy Neutrinos Francis Hazer Francis Hazer Ches West WHTW) Break Student Presentations Cons west WHTW) Lunch break (Femilia Cathesia) Tours I - Meet in front of adraum Science Commun. Tutorial WHIE Break	for Exotic Phenomena Omelia Palamarra Chow West Vertiff) Break Student Presentations (One West Vertiff) Lunch break Control Celefonia Tours 1 - 4 Meet in fort of aritum	Yvonne Wong (One West VHTW) Lunch break (Formist Calders s) Tours 1 - 4 Meet in front of atrium
 Muon g-2 experiment DØ detector SRF + SC magnet facilities NOvA / MINOS / MINERvA underground 	11:00 pm 12:00 pm 1:00 pm 2:00 pm 3:00 pm	Cheny Petrick Cox West Wittin Connok **Instrinoless Double-Beta Decay **Certiments Chiny Patrick Cox Medical Wittin Lurich Treak (remate Cambria And Fluxes Kendali Mahin Cox West Wittin)	Section Theory Noam Rocco (One West WHYN) Break Neutrino Cross Section Experiments Kendal Mahn (One West WHYN) Lunch Dreck Lunch Dreck Crigin and Nature of Neutrino Mass III Goran Senjanova (Des West WHYN)	High-Energy Neutrinos Finance Hatter Frame West WHIW) Break Student Presentations Cone West WHIW) Lunch break (Firmino Zeferion) Tours 1 — Meet in front of afrairan Science Commun. Tutorial WHIE	for Exotic Phenomena Omella Palamarra Crow West Wattrily Break Student Presentations Crow West Wattrily Lunch Broak Wattrily Tours 1 - 4 Meet in front of afrium Science Commun. Tutorial WHSX	Yvonne Wong (Dus Year MHHH) Lunch break (Fermilab Caldustra) Tours 1 - 4 Meet in front of artistm Science Commun. Tutorial WH13NW
 Muon g-2 experiment DØ detector SRF + SC magnet facilities NOvA / MINOS / MINERvA underground 1 group attends tutorial 	11:00 am 12:00 pm 1:00 pm 2:00 pm 3:00 pm 4:00 pm	Cheny Patrick (Cox West Wirthly) Canal Mouthrioless Double-Beta Decay Sensiments Cox West Wirthly Lunco, Areak (Patrick Coxed Mann and Fluxes Kendal Mann (cox West Wirthly) Broak Group Working Time (West West Wirthly) Send long pare Wirthly) Neutrino Bann And Time John Decay Coxed Time John Decay Time John Decay Wirthly Neutrinos and nuclear	Section Theory Nearm Rocco (One West WINTHO) Break Neutrino Cross Section Experiments Kendal Mahin Cow West WINTHO) Curion in One Control Calcium Crisin and Nature of Neutrino Mass III Geno September (One West WINTHO) Break Group Working Time	High-Energy Neutrinos Firshelm Hatter Frame West WHIW) Break Student Presentations Cone West WHIW) Lunch break (Femblic Zelfeine) Tours 1 Meet in front of arisum Science Commun. Tutorial WHIE Break Fermillab Colloquium	Final School Dinner at	Viconne Wong (One Visual Viertivity) Lunch break (Fernande Catellera's) Tours 1 - 4 Meet in front of atrium Science Commun. Tutorial ViH13MV W&C break (MeDX) Wins & Cheese seminar
 Muon g-2 experiment DØ detector SRF + SC magnet facilities NOvA / MINOS / MINERvA underground 	11:00 am 12:00 pm 1:00 pm 2:00 pm 3:00 pm 4:00 pm 5:00 pm	Chary Patrick Cox West Wittin) Connot Cox West Wittin) Connot Chary Patrick Cox West Wittin Chary Patrick Cox West Wittin Lunco Yeak (Femala Candilly Neutrino Beams and Fluxes Kandali Mahn (Cox West Wittin) Break Group Working Time Whom Condension and patrick Smal dang yoon West Sky)	Section Theory Nearm Rocco (One West WINTHO) Break Neutrino Cross Section Experiments Kendal Mahin Cow West WINTHO) Curion in One Control Calcium Crisin and Nature of Neutrino Mass III Geno September (One West WINTHO) Break Group Working Time	High-Energy Neutrinos Firshelm Hatter Frame West WHIW) Break Student Presentations Cone West WHIW) Lunch break (Femblic Zelfeine) Tours 1 Meet in front of arisum Science Commun. Tutorial WHIE Break Fermillab Colloquium	for Exotic Phenomena Omelia Palamara Come West Vertry) Break Student Presentations (one West Vertry) Lunch break Come West Vertry) Tours 1 - 4 Meet in front of afrium Science Commun. Tutorial VWHSX Break Student Presentations (One West Vertry)	Viconne Wong (One Visual Viertivity) Lunch break (Fernande Catellera's) Tours 1 - 4 Meet in front of atrium Science Commun. Tutorial ViH13MV W&C break (MeDX) Wins & Cheese seminar
 Muon g-2 experiment DØ detector SRF + SC magnet facilities NOvA / MINOS / MINERvA underground 1 group attends tutorial 	11:00 pm 12:00 pm 1:00 pm 2:00 pm 3:00 pm 4:00 pm 5:00 pm 6:00 pm	Cheny Patrick (Cox West Wirthly) Canal Mouthrioless Double-Beta Decay Sensiments Cox West Wirthly Lunco, Areak (Patrick Coxed Mann and Fluxes Kendal Mann (cox West Wirthly) Broak Group Working Time (West West Wirthly) Send long pare Wirthly) Neutrino Bann And Time John Decay Coxed Time John Decay Time John Decay Wirthly Neutrinos and nuclear	Section Theory Nearm Rocco (One West WINTHO) Break Neutrino Cross Section Experiments Kendal Mahin Cow West WINTHO) Curion in One Control Calcium Crisin and Nature of Neutrino Mass III Geno September (One West WINTHO) Break Group Working Time	High-Energy Neutrinos Firshelm Hatter Frame West WHIW) Break Student Presentations Cone West WHIW) Lunch break (Femblic Zelfeine) Tours 1 Meet in front of arisum Science Commun. Tutorial WHIE Break Fermillab Colloquium	for Exotic Phenomena Omelia Palamaria Cow Www WHIND Break Student Presentations Cow Week WHIND Lunch break Code Week Code Commun. Tutorial WHEX Break Student Presentations Cow Week WHIND Final School Dinner at TWO Brothers Roundhouse	Viconne Wong (One Visual Viertivity) Lunch break (Fernande Catellera's) Tours 1 - 4 Meet in front of atrium Science Commun. Tutorial ViH13MV W&C break (MeDX) Wins & Cheese seminar

Week 1

- Total of 23 lecture sessions on topics across neutrino physics
- 10.5 hours of scheduled working group time
- Student presentations of group work
- Tours and tutorials
- Poster session
 - Current student research topics
 - Prizes for best (as determined by judges)
 - Snacks to be served
 - O Note:
 - Set-up: after 12:30 pm on Tues, Aug 6
 - Take-down: by 1:30 pm on Wed, Aug 7

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am	Welcome		Solar and Reactor	Theories Beyond the SM	Introduction to
10:00 am	Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WH1W)	Neutrino Theory Joachim Kopp (One West WHTW)	and Neutrinos Joachim Kopp (One West WHTW)	Leptogenesis Jessica Turner (One West WH1W)
11:00 am	(One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break
	Break Intro. to the Physics of	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor Neutrino Experiments	Short-Baseline Expts. and Phenom	Tours 1 4
12:00 pm	Massive Neutrinos II Concha González-Garcia	Concha González-García (One West WH1W)	Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial
1:00 pm	(One West WH1W)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X
0.00	(Fermilab Cafeteria)	Long-Baseline Oscillation	Statistical Methods in	Origin and Nature of	Lunch break (Fermilab Cafeteria)
2:00 pm	Tours 1 4 Meet in front of atrium	Experiments Patricia Vahle (One West WH1W)	Neutrino Physics Thomas R. Junk (One West WH1W)	Neutrino Mass I Goran Senjanović (One West WH1W)	Origin and Nature of Neutrino Mass II
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)
4:00 pm	WH8X				W&C break (WH2X)
-1.00 p	Break	Group Working Time	Fermilab Colloquium Goran Senjanović	Group Working Time	
5:00 pm	Neutrino Detection I	Homet's Nest WH8X)	(One West WHTW) Group Working Time	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW,
	Mark Messier (One West WH1W)		(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)		Small dining room WH1SW)
6:00 pm	Organize working groups				
7:00 pm	Malaanaanaan	Poster Session		BBQ Dinner	
•	Welcome reception (Atrium)	(Adrium)		(Buses depart WH at 8:00 pm)	
8:00 pm					Optional pub crawl
0.00					near hotel
9:00 pm					

Week 1

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am	Direct Neutrino Mass	Lepton-Nucleus Cross		Experimental Searches	
10:00 am	Measurements Cheryl Patrick (One West WHTW)	Section Theory Noemi Rocco (One West WHIW)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
12:00 pm	Neutrinoless Double-Beta Decay Experiments Cheryl Patrick (One West WHTW)	Neutrino Cross Section Experiments Kendall Mahn (One West WHTW)	Student Presentations (One West WH1W)	Student Presentations (One West WH1W)	Yvonne Wong (One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm 3:00 pm	Neutrino Beams and Fluxes Kendall Mahn (One West WH1W) Break	Origin and Nature of Neutrino Mass III Goran Senjanović (One West WHTW)	Tours 1 – 4 Meet in front of atrium Science Commun. Tutorial WH1E	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH8X	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH13NW
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Arisum, Oscillatorium WH13XW, Small dining room WH15VV)	Group Working Time (Afrium, Decilatorium WH13NW, Small dining room WH15W)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WHTW)
6:00 pm					
7:00 pm	Neutrinos and nuclear non-proliferation Bryce Littleiohn เพศเพล			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

School overview Total of 23 lecture sessions on topics across neutrino physics

- 10.5 hours of scheduled working group time
- Student presentations of group work
- Tours and tutorials
- Poster session
- Three scheduled social events
 - Welcome reception today 6:30 to 8:90 pm
 - **BBQ** dinner
 - Final school dinner @ Two Brothers Roundhouse

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am	Welcome		Solar and Reactor	Theories Beyond the SM	Introduction to
10:00 am	Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WH1W) Group photo (in front of WH)	Neutrino Theory Joachim Kopp (One West WH1W)	and Neutrinos Joschim Kopp (One West WH1W)	Leptogenesis Jessica Turner (One West WH1W)
11:00 am	(One West WH1W)	Break	Break	Break	Break
12:00 pm	Break Intro. to the Physics of Massive Neutrinos II Concha González-Garcia	Phenom. of Atmos. and Accel. Neutrinos Concha González-García (One West WHTW)	Solar and Reactor Neutrino Experiments Bryce Littlejohn (One West WHTW)	Short-Baseline Expts. and Phenom Georgia Karagiorgi (One West WH1W)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH7X
1:00 pm	(One West WHTW)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break
2:00 pm	(Fermilab Cafeteria)	Long-Baseline Oscillation Experiments Patricia Vahle	Statistical Methods in Neutrino Physics Thomas R. Junk	Origin and Nature of Neutrino Mass I Goran Senjanović	(Fermilab Cafeteria) Origin and Nature of
3:00 pm	Meet in front of atrium Science Commun. Tutorial	(One West WH1W) Break	(One West WH1W)	(One West WH1W)	Neutrino Mass II Goran Senjanović
4:00 pm	WH8X	Dieak	Break	Dieux	(One West WH1W) W&C break (WH2X)
5:00 pm	Break Neutrino Detection I	Group Working Time (Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	Fermilab Colloquium Goran Senjanović (One West WH1W)	Group Working Time (Atrium, Osolistorium WH15W), Small dining room WH15W)	Group Working Time
6:00 pm	Mark Messier (One West WH1W)		Group Working Time (Atrium, Oscillatorium WH13NW, Small clining room WH1SW)	Charles of the Control of the Contro	Small dining room WHISW)
7:00 pm	Organize working groups	Poster Session			
8:00 pm	Welcome reception (Atrium)	(Adrium)		BBQ Dinner (Buses depart WH at 6:00 pm)	
	7				Optional pub crawl near hotel
9:00 pm					

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One West WH1W)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One West WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
12:00 pm	Neutrinoless Double-Beta Decay Experiments Cheryl Patrick (One West WH1W)	Neutrino Cross Section Experiments Kendall Mahn (One West WHTW)	Student Presentations (One West WHTW)	Student Presentations (One West WH1W)	Yvonne Wong (One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm 3:00 pm	Neutrino Beams and Fluxes Kendali Mahn (One West WHW)	Origin and Nature of Neutrino Mass III Goran Senjanović (One West WHTW) Break	Tours 1 – 4 Meet in front of atrium Science Commun. Tutorial WH1E	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH8X	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH13NW
4:00 pm	The same of the sa		Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Anium, Osotilatorium WH1SW), Small clining room WH1SW)	Group Working Time (Afrium, Decilationium, 193NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West VH1VI)
6:00 pm	Neutrinos and nuclear		*	Final School Dinner at	
7:00 pm	non-proliferation Bryce Littleiohn (VIHTV)			Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

Week 1

- Total of 23 lecture sessions on topics across neutrino physics
- 10.5 hours of scheduled working group time
- Student presentations of group work
- Tours and tutorials
- Poster session
- Three scheduled social events
- Special interest session
 - Neutrinos and non-proliferation -

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am					
	Welcome Intro. to the Physics of	Neutrino Detection II	Solar and Reactor Neutrino Theory	Theories Beyond the SM and Neutrinos	Introduction to Leptogenesis
10:00 am	Massive Neutrinos I	Mark Messier (One West WH1W)	Joachim Kopp (One West WH1W)	Joachim Kopp (One West WH1W)	Jessica Turner (One West WH1W)
11:00 am	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break
11:00 am	Break	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor Neutrino Experiments	Short-Baseline Expts. and Phenom	Tours 1 4
12:00 pm	Intro. to the Physics of Massive Neutrinos II Concha González-García	Concha González-García (One West WH1W)	Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial WH7X
1:00 pm	(One West WH1W) Lunch break	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break
2:00 pm	(Fermilab Cafeteria)	Long-Baseline Oscillation Experiments	Statistical Methods in Neutrino Physics	Origin and Nature of Neutrino Mass I	(Fermilab Cafeteria)
3:00 pm	Tours 1 4 Meet in front of atrium	Patricia Vahle (One West WH1W)	Thomas R. Junk (One West WH1W)	Goran Senjanović (One West WH1W)	Origin and Nature of Neutrino Mass II
3.00 pm	Science Commun. Tutorial WH8X	Break	Break	Break	Goran Senjanović (One West WH1W)
4:00 pm					W&C break (WH2X)
	Break	Group Working Time	Fermilab Colloquium Goran Senjanović	Group Working Time	
5:00 pm	Neutrino Detection I	Homet's Nest WH8X)	(One West WHIW) Group Working Time	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW,
	Mark Messier (One West WH1W)		(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)		Small dining room WH1SW)
6:00 pm	Organize working groups		Charles and global Hillory		
7:00 pm		Poster Session			
7.00 p	Welcome reception (Atrium)	(Atrium)		BBQ Dinner (Buses depart WH at 8:00 pm)	
8:00 pm					
					Optional pub crawl near hotel
9:00 pm					nou-noter

Week 2

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
3.00 am	Direct Neutrino Mass	Lepton-Nucleus Cross	Particle Astrophysics with	Experimental Searches	
10:00 am	Measurements	Section Theory	High-Energy Neutrinos	for Exotic Phenomena	
10.00 am	Cheryl Patrick (One West WH1W)	Noemi Rocco (One West WH1W)	Francis Halzen	Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
11.00 am	Neutrinoless Double-Beta	Neutrino Cross Section	Break		Yvonne Wong
12:00 pm	Decay Experiments	Experiments	Student Presentations	Student Presentations (One West WHTW)	(One west WH IV)
12.00 pm	Cheryl Patrick (One West WH1W)	Kendall Mahn (One West WH1W)	(One West WH1W)	(one mean minn)	
1:00 pm	Lunch break	Lunch break	Lunch break	Lunch break	Lunch break (Fermilab Cafeteria)
1.00 piii	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(Fermilab Cafeteria)	(remines careins)
2:00 pm	Neutrino Beams	Origin and Nature of	Tours 1 4	Tours 1 4	Tours 1 4
2.00 pm	and Fluxes	Neutrino Mass III	Meet in front of atrium	Meet in front of atrium	Meet in front of atrium
3:00 pm	Kendali Mahn (One West WH1W)	Goran Senjanović (One West WH1W)	Science Commun. Tutorial	Science Commun. Tutorial	Science Commun. Tutorial
5.00 pm	Break	Break	WH1E	WH8X	WH13NW
4:00 pm			Break	Break	W&C break (WH2X)
	Group Working Time	Group Working Time	Fermilab Colloquium Yvonne Wong		Wine & Cheese seminar
5:00 pm					
	(Atrium, Oscillatorium WH13NW,	(Atrium, Oscillatorium WH13NW,	(One West WH1W)	Student Presentations (One West WH1W)	(One West WH1W)
3.00 pm	(Atrium, Oscillatorium WH13NW, Small clining room WH1SW)				
		(Atrium, Oscillatorium WH13NW,			
6:00 pm	Small dining room WH1SW) Neutrinos and nuclear	(Atrium, Oscillatorium WH13NW,			
6:00 pp	Small dining room WH1SW)	(Atrium, Oscillatorium WH13NW,		(One West WHIW) Final School Dinner at Two Brothers	
	Small dring from WH15W) Neutrinos and nuclear non-proliferation	(Atrium, Oscillatorium WH13NW,		(One West WHTW) Final School Dinner at	
6:00 pp. 7:00 pm	Small dring from WH15W) Neutrinos and nuclear non-proliferation	(Atrium, Oscillatorium WH13NW,		Final School Dinner at Two Brothers Roundhouse	
6:00 pp	Small dring from WH15W) Neutrinos and nuclear non-proliferation	(Atrium, Oscillatorium WH13NW,		Final School Dinner at Two Brothers Roundhouse	
6:00 pp. 7:00 pm	Small dring from WH15W) Neutrinos and nuclear non-proliferation	(Atrium, Oscillatorium WH13NW,		Final School Dinner at Two Brothers Roundhouse	

- **INSS2019** group photo
 - 10:30 am on Tues, Aug 6
 - Immediately after morning lecture
 - Meet in front of atrium

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am	Welcome		Solar and Reactor	Theories Beyond the SM	Introduction to	
10:00 am	Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WHTW)	Neutrino Theory Joachim Kopp (One West WH1W)	and Neutrinos Joachim Kopp (One West WHIW)	Leptogenesis Jessica Turner (One West WH1W)	
11:00 am	(One Whee was	Group photo (in front of WH) Break	Break	Break	Break	107 1 4
12:00 pm	Break Intro. to the Physics of Massive Neutrinos II Concha González-Garcia	Phenom. of Atmos. and Accel. Neutrinos Concha González-García (One West WHTW)	Solar and Reactor Neutrino Experiments Bryce Littlejohn (One West WH1W)	Short-Baseline Expts. and Phenom Georgia Karagiorgi (One West WHTW)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial	Week 1
1:00 pm	Concha Gonzalez-Garcia (One West WH1W)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X Lunch break	
2:00 pm	(Fermilab Cafeteria)	Long-Baseline Oscillation Experiments	Statistical Methods in Neutrino Physics	Origin and Nature of Neutrino Mass I	(Fermilab Cafeteria) Origin and Nature of	
2.00	Tours 1 4 Meet in front of atrium	Patricia Vahle (One West WH1W)	Thomas R. Junk (One West WH1W)	Goran Senjanović (One West WH1W)	Neutrino Mass II	
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)	
4:00 pm					W&C break (WH2X)	
5:00 pm	Break Neutrino Detection I	Group Working Time (Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	Fermilab Colloquium Goran Senjanović (One West WH1W)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time	
6:00 pm	Mark Messier (One West WH1W)		Group Working Time (Advium, Oscillatorium WH13NW, Small clining room WH1SW)		Small dining room WH1SW)	
	Organize working groups					
7:00 pm	Welcome reception	Poster Session (Adrium)		BBQ Dinner (Buses depart WH at 6:00 pm)		
8:00 pm	•				Optional pub crawl	
9:00 pm					near hotel	

Week 2

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
0.00 a	Direct Neutrino Mass Measurements	Lepton-Nucleus Cross Section Theory	Particle Astrophysics with	Experimental Searches for Exotic Phenomena	
10:00 am	Cheryl Patrick	Noemi Rocco	High-Energy Neutrinos Francis Halzen	Ornella Palamara	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
11:00 am	Neutrinoless Double-Beta	Neutrino Cross Section	Break		Yvonne Wong
12:00 pm	Decay Experiments Cheryl Patrick (One West WH1W)	Experiments Kendall Mahn (One West WH1W)	Student Presentations (One West WH1W)	Student Presentations (One West WH1W)	(One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes	Origin and Nature of Neutrino Mass III	Tours 1 – 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium
3:00 pm	Kendall Mahn (One West WH1W)	Goran Senjanović (One West WH1W)	Science Commun. Tutorial	Science Commun. Tutorial	Science Commun. Tutorial
	Break	Break		WH8X	
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Alnum, Oscillatorium WH13kW, Small clining room WH15W)	Group Working Time (Arium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WHTW)
6:00 pm	Neutrinos and nuclear			Final School Dinner at	
7:00 pm	non-proliferation Bryce Littleiohn www.			Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

- INSS2019 group photo
 - 10:30 am on Tues, Aug 6
 - Immediately after morning lecture
 - Meet in front of atrium
- Breaks
 - 30 minutes in the morning and afternoon
 - o 60 minutes for lunch

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am	Welcome		Solar and Reactor	Theories Beyond the SM	Introduction to
10:00 am	Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WH1W)	Neutrino Theory Joachim Kopp (One West WHTW)	and Neutrinos Joachim Kopp (One West WHTW)	Leptogenesis Jessica Turner (One West WH1W)
11:00 am	(One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break
12:00 pm	Break Intro. to the Physics of Massive Neutrinos II Concha González-Garcia	Phenom. of Atmos. and Accel. Neutrinos Concha González-García (One West WHIW)	Solar and Reactor Neutrino Experiments Bryce Littlejohn (One West WH1W)	Short-Baseline Expts. and Phenom Georgia Karagiorgi (One West WHTW)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial
1:00 pm	(One West WHTW)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X
2.00	(Fermilab Cafeteria)	Long-Baseline Oscillation	Statistical Methods in	Origin and Nature of	Lunch break (Fermilab Cafeteria)
2:00 pm	Tours 1 4 Meet in front of atrium	Experiments Patricia Vahle (One West WH1W)	Neutrino Physics Thomas R. Junk (One West WH1W)	Neutrino Mass I Goran Senjanović (One West WH1W)	Origin and Nature of Neutrino Mass II
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)
4:00 pm	WH8X Break	Group Working Time	Fermilab Colloquium		W&C break (WH2X)
5:00 pm	Neutrino Detection I Mark Messier (One West WHYW)	(Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	Goran Senjanović (One West WHIW) Group Working Time (Arium, Osoliatorium WHISWW,	Group Working Time (Atrium, Oscillatorium WH13WV, Small dining room WH15W)	Group Working Time (Athum, Oscillatorium WH13NW, Small dining room WH1SW)
6:00 pm	Organize working groups		Small dining room WH1SW)		
7:00 pm	Welcome reception	Poster Session (Adrium)		BBQ Dinner (Buses depart WH at 8:00 pm)	
8:00 pm	(in any			(according to the control of the con	Optional pub crawl
9:00 pm					near hotel

Week 2

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am					
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One West WHTW)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One West WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
12:00 pm	Neutrinoless Double-Beta Decay Experiments Cheryl Patrick (One West WHTW)	Neutrino Cross Section Experiments Kendall Mahn (One West WHTW)	Student Presentations (One West WHTW)	Student Presentations (One West WHTW)	Yvonne Wong (One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermitab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes Kendall Mahn	Origin and Nature of Neutrino Mass III Goran Senjanović	Tours 1 4 Meet in front of atrium Science Commun. Tutorial	Tours 1 4 Meet in front of atrium Science Commun.	Tours 1 4 Meet in front of atrium Science Commun. Tutorial
3:00 pm	Break	Break	WH1E	Tutorial WH8X	WH13NW
4:00 pm			Break	Break	W&C break (WH2X)
5:00 pm	Group Working Time (Atrium, Oscillatorium WH13kW, Small clining room WH15W)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WH1W)
6:00 pm	Neutrinos and nuclear			Final School Dinner at	
7:00 pm	non-proliferation Bryce Littleiohn (WHYM)			Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am	Welcome		Solar and Reactor	Theories Beyond the SM	Introduction to
10:00 am	Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WH1W)	Neutrino Theory Joachim Kopp (One West WHTW)	and Neutrinos Joachim Kopp (One West WH1W)	Leptogenesis Jessica Turner (One West WH1W)
11:00 am	(One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break
12:00 pm	Break Intro. to the Physics of Massive Neutrinos II Concha Ganzález-Garcia	Phenom. of Atmos. and Accel. Neutrinos Concha González-García (One West WHTW)	Solar and Reactor Neutrino Experiments Bryce Littlejohn (One West WH1W)	Short-Baseline Expts. and Phenom Georgia Karagiorgi (One West WHTW)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial
1:00 pm	(One West WHTW)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X Lunch break
2:00 pm	(Fermilab Cafeteria) Tours 1 4	Long-Baseline Oscillation Experiments Patricia Vahle	Statistical Methods in Neutrino Physics Thomas R. Junk	Origin and Nature of Neutrino Mass I Goran Senjanović	(Fermilab Cafeteria) Origin and Nature of Neutrino Mass II
3:00 pm	Meet in front of atrium Science Commun. Tutorial	(One West WH1W) Break	(One West WH1W)	(One West WH1W) Break	Goran Senjanović (One West WH1W)
4:00 pm	WH8X				W&C break (WHZX)
5:00 pm	Break Neutrino Detection I Mark Messier (One West WH W)	Group Working Time (Atrium, Oscillatorium WH13NW, Hornet's Nest WH8X)	Fermilab Colloquium Goran Senjanović (One West WHIV) Group Working Time (Artum, Oscilatorum WH13NW)	Group Working Time (Atrium, Oscillatorium WH13WW, Small dining room WH1SW)	Group Working Time (Atrium, Osofilatorium WH13NW, Small dinling room WH15W)
6:00 pm	Organize working groups		Small dining room WH1SW)		
7:00 pm	Welcome reception	Poster Session (Arrum)		BBQ Dinner (Buses depart WH at 6:00 pm)	
8:00 pm	**************************************				Optional pub crawl
9:00 pm					near hotel

9:00 am						
10:00 am	Direct Neutrino Mass Measurements Cheryl Patrick (One Wast WH1W)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One Wast WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WH1W)		١,
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology	Ι'
	Neutrinoless Double-Beta Decay Experiments	Neutrino Cross Section Experiments	Break	Student Presentations	Yvonne Wong (One West WH1W)	
12:00 pm	Cheryl Patrick (One West WH1W)	Kendali Mahn (One West WH1W)	Student Presentations (One West WH1W)	(One West WHTW)		
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	
2:00 pm	Neutrino Beams and Fluxes	Origin and Nature of Neutrino Mass III	Tours 1 – 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	
3:00 pm	Kendall Mahn (One West WH1W)	Goran Senjanović (One West WH1W)	Science Commun. Tutorial	Science Commun. Tutorial	Science Commun. Tutorial	
5.00 pin	Break	Break	WH1E	WH8X	WH13NW	
4:00 pm			Break	Break	W&C break (WH2X)	
5:00 pm	Group Working Time (Atrium, Oscilatorium WH13AW, Small dining room WH15W)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WH1W)	Wine & Cheese seminar (One West WHTW)	
6:00 pm	Neutrinos and nuclear					
	non-proliferation			Final School Dinner at Two Brothers		
7:00 pm	Bryce Littlejohn (WH1W)			Roundhouse (Buses depart WH at 6:00 pm)		
8:00 pm						

Wednesday 14th August Thursday 15th August

Monday 12th August

9:00 pm

Week 1

Week 2

Friday 16th August

- Fermilab Colloquium
 - Presented by INSS2019 lecturers
 - Goran Senjanović
 - Yvonne Wong
 - Neutrino-related topics aimed a the broader Fermilab community



Week 1

- Fermilab Colloquium
- Joint Experimental-Theoretical Seminar
 - Friday at 4:00 pm in WH1W
 - (Working group time scheduled over Aug 9 seminar)

9:00 am 10:00 am

11:00 am
12:00 pm
1:00 pm
2:00 pm
3:00 pm
4:00 pm
5:00 pm
6:00 pm
7:00 pm
8:00 pm

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August	
9:00 am	Welcome		Solar and Reactor	Theories Beyond the SM	Introduction to	
10:00 am	Intro. to the Physics of Massive Neutrinos I	Neutrino Detection II Mark Messier (One West WHIW)	Neutrino Theory Joachim Kopp (One West WH1W)	and Neutrinos Joachim Kopp (One West WH1W)	Leptogenesis Jessica Turner (One West WH1W)	
11:00 am	(One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break	100
	Break Intro. to the Physics of	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor Neutrino Experiments	Short-Baseline Expts. and Phenom	Tours 1 4	Week 1
12:00 pm	Massive Neutrinos II	Concha González-García (One West WHTW)	Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial	
1:00 pm	(One West WH1W)	Lunch break	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X	
	Lunch break (Fermilab Cafeteria)	Long-Baseline Oscillation	Statistical Methods in	Origin and Nature of	Lunch break (Fermilab Cafeteria)	
2:00 pm	Tours 1 4	Experiments Patricia Vahle	Neutrino Physics Thomas R. Junk	Neutrino Mass I Goran Senianović	Origin and Nature of Neutrino Mass II	
3:00 pm	Meet in front of atrium Science Commun. Tutorial	(One West WH1W) Break	(One West WH1W)	(One West WH1W) Break	Goran Senjanović	
	WH8X	Бгеак	Break	break	(One West WH1W) W&C break (WH2X)	
4:00 pm	Break	Group Working Time	Fermilab Colloquium		WAC DIEBR (WHZX)	
5:00 pm	Neutrino Detection I	(Atrium, Oscillatorium WH13NW, Homet's Nest WH8X)	Goran Senjanović (One West WH1W)	Group Working Time (Atrium, Oscillatorium WH13NW, Small dining room WH15W)	Group Working Time	
	Mark Messier (One West WH1W)		Group Working Time (Adrium, Oscillatorium WH13NW,	anaronny nonvertawy	(Arum, Oscilatorum WH13NV, Small dining room WH1SW)	
6:00 pm	Organize working groups		Small dining room WH1SW)			
7:60 pm	0 00 1	Poster Session				
7.00	Welcome reception (Atrium)	(Adrium)		BBQ Dinner (Buses depart WH at 8:00 pm)		
8:00 pm					Ontinged much arrest	
				<u> </u>	Optional pub crawl near hotel	
9:00 pm						

ı	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
ı					
	Direct Neutrino Mass Measurements Cheryl Patrick (One Wast WH1W)	Lepton-Nucleus Cross Section Theory Noemi Rocco (One Wast WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	Experimental Searches for Exotic Phenomena Ornella Palamara (One West WHTW)	
ı	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
	Neutrinoless Double-Beta Decay Experiments Cheryl Patrick (One West WH1W)	Neutrino Cross Section Experiments Kendall Mahn (One West WH19)	Student Procentations (One West White)	Student Presentations (One West WHTW)	Yvonne Wong (One West WH1W)
	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermitab Cafeteria)	Lunch break (Fermilab Cafeteria)
	Neutrino Beams and Fluxes Kendall Mahn (One West WH1W)	Origin and Nature of Neutrino Mass III Goran Senjanović (One West WH1W)	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH1E	Tours 1 4 Mee to front of atrium Science Commun. Tutorial	Tours 1 4 Meet in front of atrium Science Commun. Tutorial WH13NW
ı	Break	Break	Break	WH8X Break	W&C break (WH2X)
	Group Working Time (Afrium, Oscilatorium WH13NW, Small clining room WH15NV)	Group Working Time (Afrium, Oscillatorium WH13NW, Small dining room WH1SW)	Fermilab Colloquium Yvonne Wong (One West WH1W)	Student Presentations (One West WHTW)	Wine & Cheese seminar (One West WHTW)
	Neutrinos and nuclear non-proliferation Bryce Lätteichn ymryn			Final School Dinner at Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
ı				l	I

- Fermilab Colloquium
- Joint Experimental-Theoretical Physics Seminar
 - Friday at 4:00 pm in WH1W
 - (Working group time scheduled over Aug 9 seminar)
- Wine and cheese break
 - Served at 3:30 pm on Friday prior to JETP
 - WH2X (up the stairs on the south end of the atrium)

	Monday 5th August	Tuesday 6th August	Wednesday 7th August	Thursday 8th August	Friday 9th August
9:00 am					
5.00 am	Welcome	Neutrino Detection II	Solar and Reactor Neutrino Theory	Theories Beyond the SM and Neutrinos	Introduction to Leptogenesis
10:00 am	Intro. to the Physics of Massive Neutrinos I	Mark Messier (One West WH1W)	Joachim Kopp (One West WH1W)	Joachim Kopp (One West WH1W)	Jessica Turner (One West WH1W)
11:00 am	Concha González-García (One West WH1W)	Group photo (in front of WH) Break	Break	Break	Break
11:00 am	Break	Phenom. of Atmos. and Accel. Neutrinos	Solar and Reactor Neutrino Experiments	Short-Baseline Expts. and Phenom	Tours 1 4
12:00 pm	Intro. to the Physics of Massive Neutrinos II Concha González-García	Concha González-García (One West WH1W)	Bryce Littlejohn (One West WH1W)	Georgia Karagiorgi (One West WH1W)	Meet in front of atrium Science Commun. Tutorial
1:00 pm	(One West WH1W)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	WH7X Lunch break
2:00 pm	(Fermilab Cafeteria)	Long-Baseline Oscillation Experiments	Statistical Methods in Neutrino Physics	Origin and Nature of Neutrino Mass I	(Fermilab Cafeteria)
·	Tours 1 4 Meet in front of atrium	Patricia Vahle (One West WH1W)	Thomas R. Junk (One West WH1W)	Goran Senjanović (One West WH1W)	Origin and Nature of Neutrino Mass II
3:00 pm	Science Commun. Tutorial	Break	Break	Break	Goran Senjanović (One West WH1W)
4:00 pm	WH8X		Dieak	_	W&C break (WH2X)
4.00 p	Break	Group Working Time	Fermilab Colloquium Goran Senjanović	Caup Working Time	
5:00 pm	Neutrino Detection I	(Atrum, Oscillatorium WH1 sNW, Hornet's Nest WH8X)	(One West WH1W)	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	Group Working Time (Atrium, Oscillatorium WH13NW,
	Mark Messier (One West WH1W)		Grow working Time (Afrium, Oscillatorium WH13NW,	V. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Small dining room WH1SW)
6:00 pm	Organize working groups		Small dining room WH1SW)		
	Organize Working groups	Poster Session			
7:00 pm	(Atrium)	(Atrium)		BBQ Dinner (Buses depart WH at 8:00 pm)	
8:00 pm	(GLAIN)			(autocoupai, 771 at 0.00 pm)	
o.oo piii	<u> </u>				Optional pub crawl
9:00 pm					near hotel

Week 2

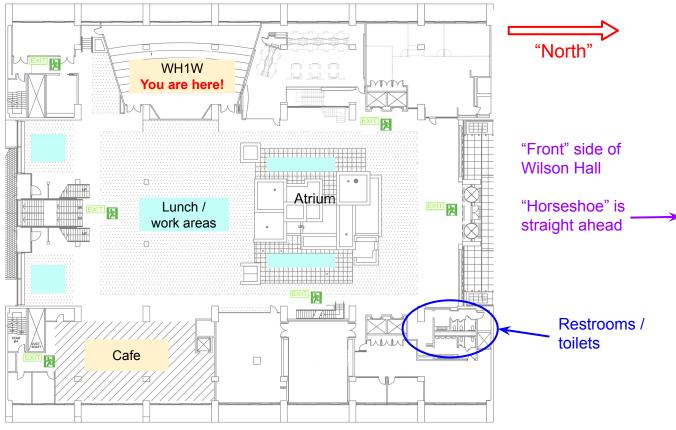
Week 1

	Monday 12th August	Tuesday 13th August	Wednesday 14th August	Thursday 15th August	Friday 16th August
9:00 am	Direct Neutrino Mass	Lepton-Nucleus Cross		Experimental Searches	
10:00 am	Measurements Cheryl Patrick (One West WH1W)	Section Theory Noemi Rocco (One West WH1W)	Particle Astrophysics with High-Energy Neutrinos Francis Halzen	for Exotic Phenomena Ornella Palamara (One West WH1W)	
11:00 am	Break	Break	(One West WH1W)	Break	Neutrino Cosmology
12:00 pm	Neutrinoless Decay Experiments Cheryl Patrick (One West WHTW)	Neutrino Cross Section Experiments Kendall Mahn (One 1 MHTW)	Student Presentations (One West WH1W)	Student Presentations (One West WHTW)	Yvonne Wong (One West WH1W)
1:00 pm	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeleria)	Lunch break (Fermilab Cafeteria)	Lunch break (Fermilab Cafeteria)
2:00 pm	Neutrino Beams and Fluxes	Origin and Nature of Neutrino Mass III	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium	Tours 1 4 Meet in front of atrium
3:00 pm	Kendall Mahn (One West WH1W)	Goran Senjanović (One West WH1W)	Science Commun. Tutorial WH1E	Turo.int WH8X	Science Commun. Tutorial WH13NW
4:00 pm	Break	Break	Break	Break	W&C break (WH2X)
4:00 pm	Group Working Time	Group Working Time	Fermilab Colloquium Yvonne Wong	Student Presentations	Wine & Cheese seminar
5:00 pm	(Atrium, Oscillatorium WH13NW, Small dining room WH1SW)	(Alrium, Oscillatorium WH13NW, Small dining room WH1SW)	(One West WH1W)	(One West WHTW)	(One West WH1W)
6:00 pm	Neutrinos and nuclear			Final School Dinner at	
7:00 pm	non-proliferation Bryce Littleiohn кинтуо			Two Brothers Roundhouse (Buses depart WH at 6:00 pm)	
8:00 pm					
9:00 pm					

Logistics and other information

Orienting





Note: Rooms in Wilson Hall (WH) are designated according to the side of the building (E/W/X) and the floor. E.g., WH2X



Orienting Public Access Areas Buildings Parking Lots Ponds ---- Public Access Roads ---- Bicycle Path - Trails Streams Test Areas WILSON ST Wilson St. Gate (All Deliveries) Silicon Beam v Detector Users Center, Facility Site W. BATAVIA RD Frontier Pub, Fermilab Pasture Kuhn Barn Technical Wilson Hall Entrance Dog Training (Open to All Visitors) Illinois Feynman. (Public Welcome Computing Accelerator Center Research Wilson Hall and Muon Ramsey Auditorium Site B Nature (Public Welcome) Main Injector Particle Accelerator Tevatron Collider (decommissioned) DZero Building Butterfield Rd Farnsworth Ave, I-88

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Buses

EVENT DATE	AM PICK UP at Courtyard*	PM PICK UP at Fermilab Horseshoe**	PM PICK UP at Two Brothers Roundhouse
August 5	8:15 a.m.	8:00 p.m.	
August 6	8:15 a.m.	8:00 p.m.	
August 7	8:15 a.m.	6:00 p.m.	
August 8	8:15 a.m.	6:00 p.m.	
August 9	8:15 a.m.	6:00 p.m.	
August 12	8:15 a.m.	7:00 p.m.	
August 13	8:15 a.m.	6:00 p.m.	
August 14	8:15 a.m.	5:00 p.m.	
August 15	8:15 a.m.	5:30 p.m. ***	8:00 p.m.
August 16	9:15 a.m.		

Posted on indico page



Fermilab ID badging process

Students should pick up Fermilab ID badges from the User's Office

 located on the Mezzanine (between Ground Floor and Atrium levels on north end)

Proceed in groups during breaks and lunch

- One group during morning and afternoon breaks
- Two groups during lunch separated by 30 minutes

List is posted under Logistics and On-the-ground Information page on INSS2019 indico site

Group 1	Group 2	Group 3	Group 4
Aug 5, 11:00 am	Aug 5, 1:00 pm	Aug 5, 1:30 pm	Aug 5, 4:00 pm
NDRADE, Diego	BROOKS, Thomas	FILKINS, Amy	LACKEY, Teresa
SCENCIO, Marvin V.	CABABIE, Mariano Ruben	GE, Guanqun	LAZAR, Jeffrey
SQUITH, Lily	CALCUTT, Jacob	GELLI, Bruno	LAZU, Ryan
TKIN, Edward	CARO TERRAZAS, Ivan	GILLIGAN, Sean	LEE, DongHa
ABICZ, Marta	CHARDONNET, Etienne	GOODWIN, Owen	LEONARD, Kayla
ALASUBRAMANIAN, Supraja	COFFANI, Alice	GROH, Micah	LOZANO SÁNCHEZ, Adrian
ARROW, Joshua	CONTRERAS, Taylor	HALL, Anna	MACHADO, Eric
ASHYAL, Amit	DALAGER, Olivia	HENRY , Sarah	MARTINEZ CASALES, Maria
ASQUE, Vincent	DANIELSON, Daine	HERRERO-GÓMEZ, Pablo	MARTIN, Joshua
ENEVIDES RODRIGUES, Ohana	DE ICAZA ASTIZ, Iker	HOEFKEN, Jaime	MASON, Katie
ODUR, Baran	DOYLE, Derek	JAKKAPU, Mahesh	MILLER, Katrina
RIANNE, Eldwan	DUEÑAS, David	JWA, Yeon-jae	MUELLER, Justin
Group 5	Group 6	Group . 7	Group 8
Aug 6, 10:45 am	Aug 6, 12:30 pm	Aug 6, 1:00 pm	Aug 6, 3:00 pm
<u> </u>	9 -		
IUKHOPADHYAY, Mainak	RAHAT, Moinul Hossain	SHARMA, Vivek	VANN, Jared
IULDER, Kevin	RICE, Logan	SMITH, Adryanna	WANG, Yue
IU, Wei	RIGAN, Michal	SOLDIN, Philipp	WESTER, Thomas
AL, Kuntal	RODRIGUES ROSSI, Rafaela	SOUZA, Henrique	WOOD, Kevin
ARKER, William	ROSAURO ALCARAZ, Salvador	STOCKER, Francesca	WU, Wanwei
ATEL, Sameer	SAFA, Ibrahim	SUTTON, Kathryn	YATES, Lauren
IPLANI, Nishtha	SANCHEZ FALERO, Sebastian	SWEENEY, Cathal	ZHANG, Kairui
ORTO SILVA, Yago Philippe	SARASTY, Carlos	SWORD-FEHLBERG, Samantha	ZHANG, Xining
RAMANICK, Soumita	SAWY, Fatma Helal	SZTUC, Artur	ZHOU, Bei
RINCE, Sebastien	SHAFAQ, Sheeba	USÓN ANDRÉS, Alberto	
RINCE, Sebastien	SHAFAQ, Sheeba	USÓN ANDRÉS, Alberto	

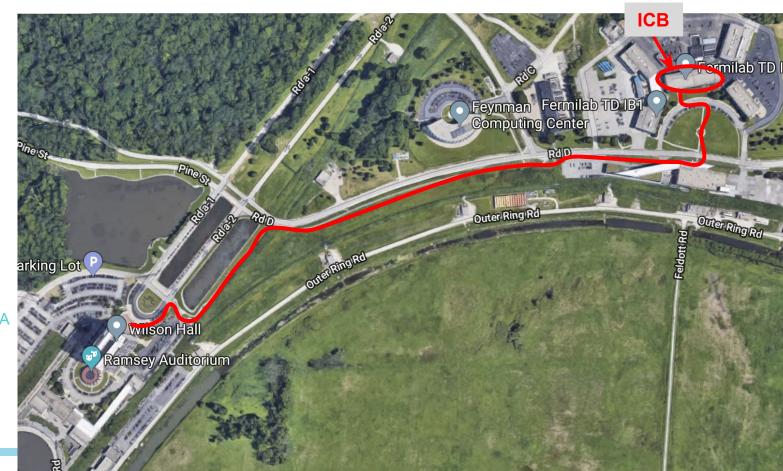
Tour and tutorial notes

Important information for those participating in tours

- Tour group assignments can be found on the INSS2019 indico site
 - Please check that to see which tour / tutorial you are scheduled to attend
- All tour participants must wear closed-toe, low-heeled shoes
- DØ Detector and NOvA / MINOS / MINERvA Underground tours
 - Shuttles will pick up in front of Wilson Hall
 - A few students may need alternative transportation. Let us know if you have a car
- SRF and SC magnet facilities, and Muon g-2 Experiment tours
 - Will walk from WH to the tour sites
 - Please let us know if a 10 to 15 minute walk outside will be a problem
- Tutorial attendees: check the schedule for the room assignment



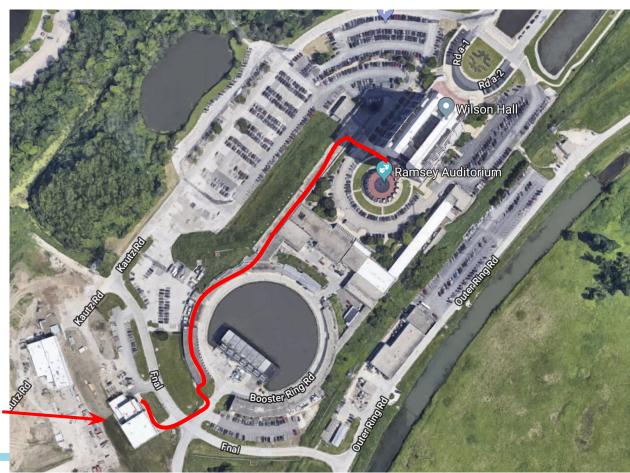
Walking route to SRF and SC Magnet Facilities tour site



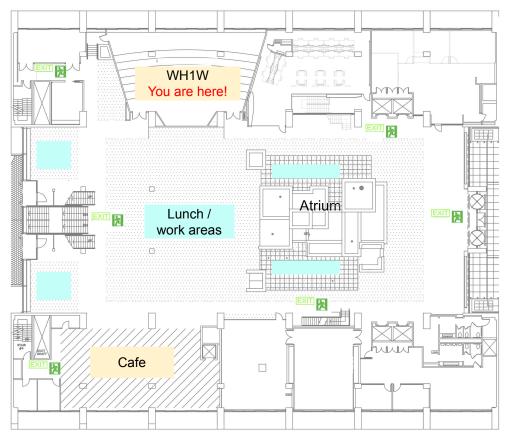
Meet at front of atrium. A guide will lead the way.

Walking route to Muon g-2 Experiment tour site

Meet at rear of atrium. A guide will lead the way.

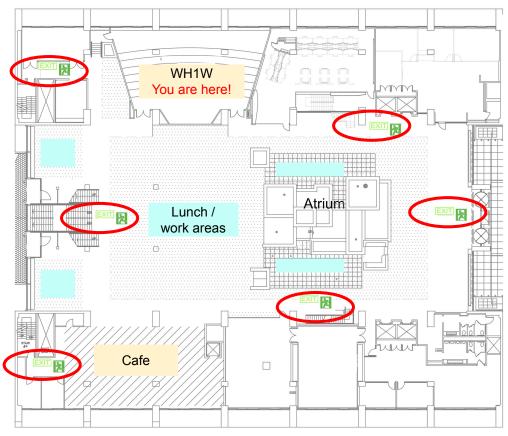


Muon g-2 experiment





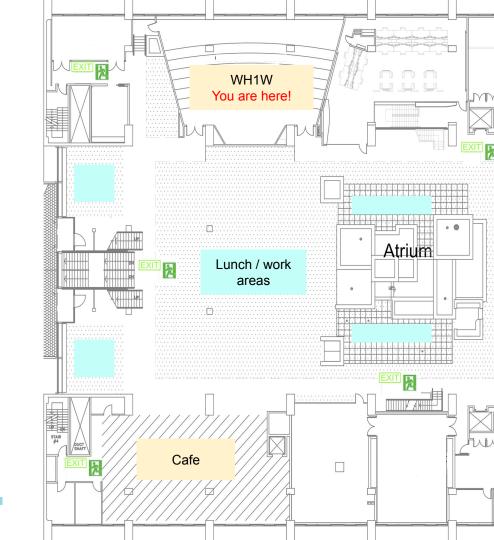
Atrium-level exits





Fire alarm

- Flashing strobes on alarm
- Three beeps followed by voice evacuation instructions

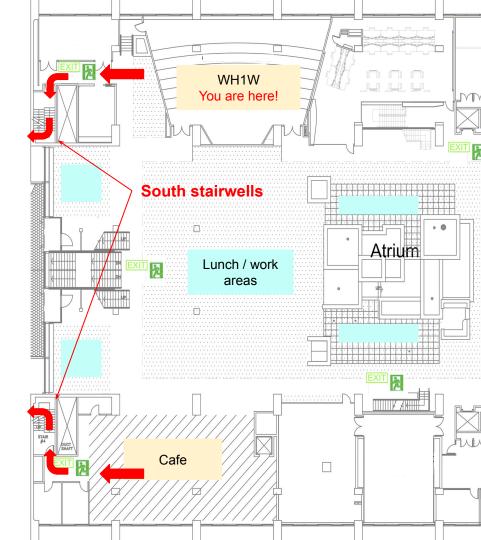


Atrium level fire evacuation routes

The south stairwells are also the route on most other floors



Once outside, gather in this area

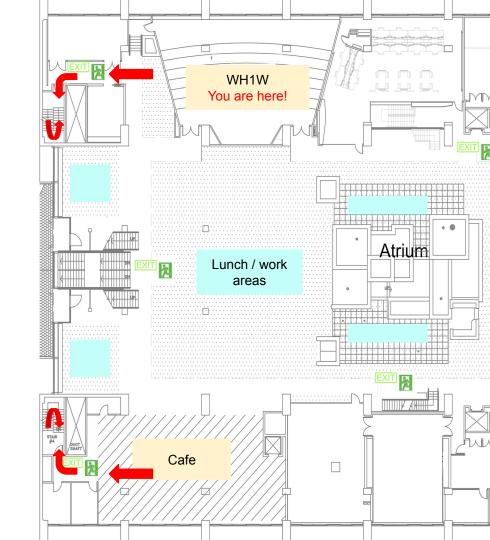


Tornado warning

- Issued over Site-wide
 Emergency Warning System
 (which will be tested tomorrow at 10 am!)
- Will be directed to proceed to tornado shelter

Wilson Hall tornado shelter

- Proceed to south stairwell
- Descend to basement tornado shelter area
 - Includes of the entire basement, tunnels



The people of INSS2019

INSS2019 lecturers

Week 1

- Concha González-Garcia
- Tom Junk
- Georgia Karagiorgi
- Joachim Kopp
- Bryce Littlejohn
- Mark Messier
- Goran Senjanović
- Jessica Turner
- Patricia Vahle



Most will be in attendance during the full week of their lecture(s). Talk to them!



INSS2019 lecturers

Week 2

- Francis Halzel
- Bryce Littlejohn
- Kendall Mahn
- Ornella Palamara
- Cheryl Patrick
- Noemi Rocco
- Goran Senjanović
- Yvonne Wong



Most will be in attendance during the full week of their lecture(s). Talk to them!



INSS2019 local organizing committee

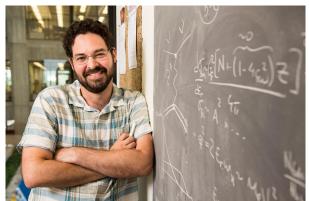


Kirsty Duffy





Laura Fields



Pedro Machado







INSS2019 conference coordinators

Joy Pomillo



Look for
Conference
Coordinator
on name tag



Melody Saperston



Questions? Comments? Suggestions?

- Find one of the organizing team
 - Local committee members
 - Conference coordinators
- Send email to <u>inss2019@fnal.gov</u>
- INSS2019 slack
 - Channel #asktheorganizers

