

AccuWeather.com Forecast

TODAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY
Considerable cloudiness	A couple of afternoon showers	Mostly cloudy, a shower; breezy	Some sun, then turning cloudy	Sun and clouds with a shower

PENDLETON TEMPERATURE FORECAST

53°	36°	46°	38°	47°	34°	45°	35°	46°	31°
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

HERMISTON TEMPERATURE FORECAST

54°	36°	49°	41°	53°	34°	50°	35°	50°	32°
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

ALMANAC

PENDLETON

through 3 p.m. yesterday

TEMPERATURE	HIGH	LOW
Yesterday	54°	46°
Normals	44°	30°
Records	66° (1894)	2° (1993)

PRECIPITATION

24 hours ending 3 p.m.	Trace
Month to date	0.78"
Normal month to date	1.20"
Year to date	11.17"
Last year to date	7.81"
Normal year to date	11.23"

HERMISTON

through 3 p.m. yesterday

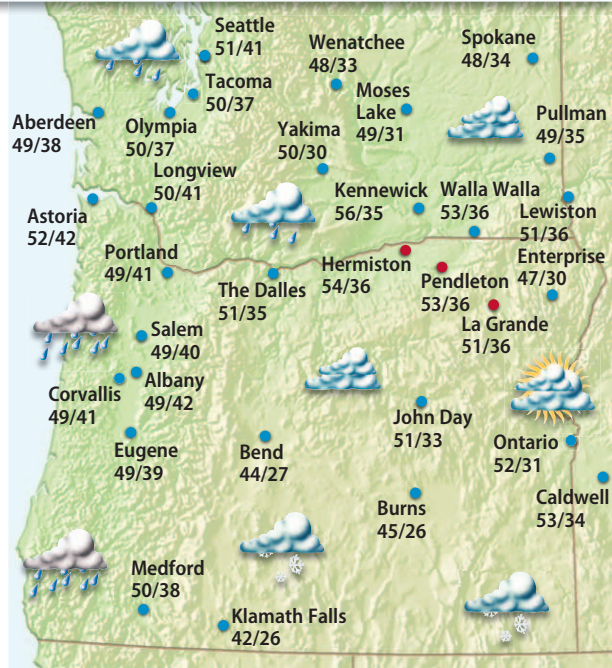
TEMPERATURE	HIGH	LOW
Yesterday	58°	46°
Normals	46°	31°
Records	70° (1960)	-4° (1985)

PRECIPITATION

24 hours ending 3 p.m.	Trace
Month to date	0.52"
Normal month to date	0.98"
Year to date	7.85"
Last year to date	5.39"
Normal year to date	8.29"

SUN AND MOON

Sunrise today	7:10 a.m.
Sunset tonight	4:15 p.m.
Moonrise today	4:12 a.m.
Moonset today	3:14 p.m.



REGIONAL FORECAST

Coastal Oregon: Occasional rain today into tomorrow. Monday: mostly cloudy with a shower.

Eastern and Central Oregon: Showers of rain and snow near the Cascades today. Some sun, then clouds in the east.

Western Washington: Rain today, steady and heaves this evening.

Eastern Washington: Showers around today; a bit of morning snow, then a little rain toward the Cascades.

Cascades: Mostly cloudy today with rain and snow; snow level mostly near 4,000 feet with 3-6 inches.

Northern California: Rain today, but snow in the interior mountains with slower and difficult travel.

REGIONAL CITIES

	Today			Sun.		
	Hi	Lo	W	Hi	Lo	W
Astoria	52	42	r	53	48	r
Baker City	46	27	c	42	28	c
Bend	44	27	sn	40	33	pc
Brookings	51	42	r	51	44	r
Burns	45	26	c	38	28	pc
Enterprise	47	30	c	39	32	c
Eugene	49	39	r	50	44	c
Heppner	51	33	c	45	36	sh
Hermiston	54	36	c	49	41	pc
John Day	51	33	c	41	37	c
Klamath Falls	42	26	sn	41	31	pc
La Grande	51	36	c	43	37	c
Meacham	50	33	c	40	35	r
Medford	50	38	r	49	41	r
Newport	50	42	r	53	46	r
North Bend	52	43	r	54	45	r
Ontario	52	31	pc	48	30	pc
Pasco	55	34	c	51	38	pc
Pendleton	53	36	c	46	38	sh
Portland	49	41	r	49	46	sh
Redmond	49	26	c	45	34	pc
Salem	49	40	r	51	44	pc
Spokane	48	34	c	41	33	pc
Ukiah	47	29	c	40	33	sf
Vancouver	49	41	r	49	46	sh
Walla Walla	53	36	c	48	36	pc
Yakima	50	30	r	50	34	pc

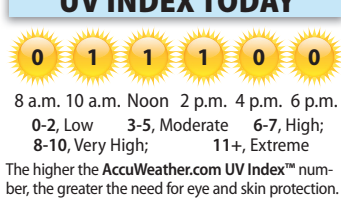
WORLD CITIES

	Today			Sun.		
	Hi	Lo	W	Hi	Lo	W
Beijing	48	26	s	44	21	s
Hong Kong	68	58	r	68	59	sh
Jerusalem	57	39	s	59	43	s
London	49	40	pc	47	38	pc
Mexico City	67	43	pc	74	42	pc
Moscow	32	29	sn	36	28	sn
Paris	50	39	c	47	36	c
Rome	63	43	pc	61	43	pc
Seoul	40	33	r	48	26	pc
Sydney	78	66	pc	73	67	pc
Tokyo	54	47	pc	53	50	r

WINDS

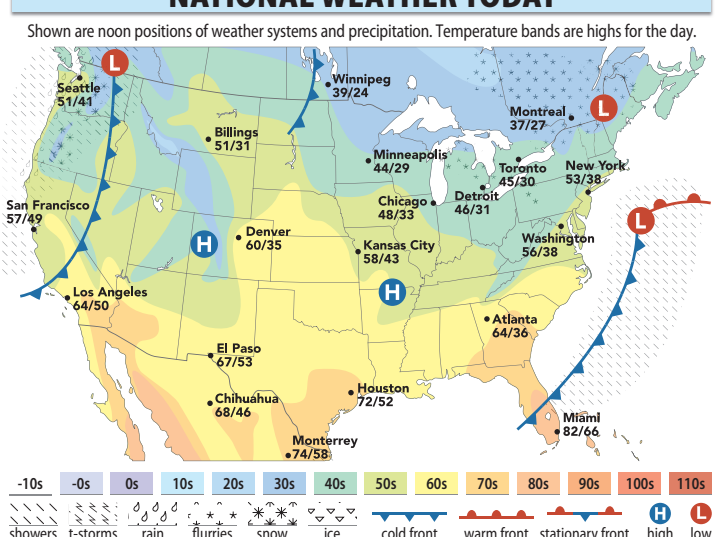
(in mph)	Today	Sunday
Boardman	SW 6-12	WSW 7-14
Pendleton	SW 6-12	WSW 7-14

UV INDEX TODAY



Forecasts and graphics provided by AccuWeather, Inc. ©2016

NATIONAL WEATHER TODAY



National Summary: Snow showers will extend from the Great Lakes to northern New England and the central Appalachians today. Rain and mountain snow will push southward on the Pacific coast. Most other areas will be dry.

Yesterday's National Extremes: (for the 48 contiguous states)
High 87° in Edinburg, Texas **Low** 0° in Leadville, Colo.

NATIONAL CITIES

	Today			Sun.				Today			Sun.		
	Hi	Lo	W	Hi	Lo	W		Hi	Lo	W	Hi	Lo	W
Albuquerque	55	41	c	51	33	pc	Louisville	54	31	pc	58	43	s
Atlanta	64	36	s	65	46	pc	Memphis	58	34	pc	61	51	pc
Atlanta City	55	40	pc	51	37	s	Miami	82	66	pc	80	69	pc
Baltimore	55	34	pc	52	30	s	Milwaukee	49	33	pc	50	41	pc
Billings	51	31	pc	48	29	c	Minneapolis	44	29	pc	46	41	r
Birmingham	62	31	s	67	49	pc	Nashville	55	28	pc	62	45	pc
Boise	53	33	c	47	32	c	New Orleans	67	46	s	69	57	s
Boston	47	35	r	45	33	c	New York City	53	38	pc	47	30	c
Charleston, SC	69	38	pc	64	40	s	Oklahoma City	63	47	pc	65	50	c
Charleston, WV	47	29	pc	54	31	pc	Omaha	57	34	pc	56	40	r
Chicago	48	33	pc	50	40	pc	Philadelphia	54	38	pc	50	34	s
Cleveland	45	34	sn	51	35	pc	Phoenix	76	52	c	63	45	pc
Dallas	66	53	pc	71	62	c	Portland, ME	48	32	c	43	29	c
Denver	60	35	s	55	28	c	Providence	50	34	pc	47	30	c
Detroit	46	31	pc	49	35	pc	Raleigh	60	31	s	59	34	s
El Paso	67	53	c	67	43	s	Rapid City	56	28	pc	51	29	c
Fairbanks	0	-4	c	2	-3	c	Reno	52	36	c	44	31	c
Fargo	44	26	s	44	36	pc	Sacramento	55	43	r	58	44	pc
Honolulu	84	71	pc	84	72	pc	St. Louis	57	38	s	55	46	pc
Houston	72	52	s	76	66	pc	Salt Lake City	54	36	c	45	31	sf
Indianapolis	49	32	pc	52	41	c	San Diego	65	56	c	66	51	sh
Jacksonville	72	46	pc	70	49	s	San Francisco	57	49	r	59	51	pc
Kansas City	58	43	s	58	49	sh	Seattle	51	41	r	49	42	sh
Las Vegas	64	47	s	57	39	pc	Tucson	80	49	c	64	43	pc
Little Rock	58	35	s	59	50	c	Washington, DC	56	38	s	55	36	s
Los Angeles	64	50	r	61	48	c	Wichita	61	45	s	64	43	sh

Weather (W): s-sunny, pc-partly cloudy, c-cloudy, sh-showers, t-thunderstorms, r-rain, sf-snow flurries, sn-snow, i-ice.

EAST OREGONIAN

— Founded Oct. 16, 1875 —

211 S.E. Byers Ave., Pendleton 541-276-2211
 333 E. Main St., Hermiston 541-567-6211
 Office hours: Monday through Friday, 8 a.m. to 5 p.m.
 Closed major holidays

www.eastoregonian.com

To subscribe, call 1-800-522-0255
 or go online to www.eastoregonian.com
 and click on 'Subscribe'

East Oregonian (USPS 164-980) is published daily except Sunday, Monday and Dec. 25, by the EO Media Group, 211 S.E. Byers Ave., Pendleton, OR 97801. Periodicals postage paid at Pendleton, OR. Postmaster: send address changes to East Oregonian, 211 S.E. Byers Ave., Pendleton, OR 97801. Copyright © 2016, EO Media Group

Subscriber services:

For home delivery, vacation stops or delivery concerns: 1-800-522-0255

Didn't receive your paper? Call 1-800-522-0255 before noon Tuesday through Friday or before 10 a.m. Saturday for same-day redelivery

SUBSCRIPTION RATES

	Local home delivery	Savings off cover price
EZPay	\$14.50	41 percent
52 weeks	\$173.67	41 percent
26 weeks	\$91.86	38 percent
13 weeks	\$47.77	36 percent

*EZ Pay = one-year rate with a monthly credit or debit card/check charge

Single copy price:
 \$1 Tuesday through Friday, \$1.50 Saturday

Advertising Director: Marissa Williams
 541-278-2669 • adirector@eastoregonian.com

Advertising Services: Laura Jensen
 541-966-0806 • ljensen@eastoregonian.com

Multimedia Consultants:
 • Terri Briggs
 541-278-2678 • tbriggs@eastoregonian.com
 • Elizabeth Freemantle
 541-278-2683 • efreemantle@eastoregonian.com
 • Jeanne Jewett
 541-564-4531 • jjewett@eastoregonian.com
 • Chris McClellan
 541-966-0827 • cmcclellan@eastoregonian.com
 • Stephanie Newsom
 541-278-2687 • snewsom@eastoregonian.com
 • Dayle Stinson
 541-278-2670 • dstinson@eastoregonian.com
 • Audra Workman
 541-564-4538 • aworkman@eastoregonian.com

Classified & Legal Advertising

1-800-962-2819 or 541-278-2678
classifieds@eastoregonian.com or legals@eastoregonian.com

NEWS

- To submit news tips and press releases: call 541-966-0818 • fax 541-276-8314 • email news@eastoregonian.com
- To submit community events, calendar items and Your EO News: email community@eastoregonian.com or call Tammy Malgesini at 541-564-4539 or Renee Struthers in at 541-966-0818.
- To submit engagements, weddings and anniversaries: email rstruthers@eastoregonian.com or visit www.eastoregonian.com/community/announcements
- To submit a Letter to the Editor: mail to Managing Editor Daniel Wattenburger, 211 S.E. Byers Ave., Pendleton, OR 97801 or email editor@eastoregonian.com.
- To submit sports or outdoors information or tips: 541-966-0838 • sports@eastoregonian.com

COMMERCIAL PRINTING

Production Manager: Mike Jensen
 541-215-0824 • mjensen@eastoregonian.com

Team of deaf scientists probe hearing loss treatments

LYNNE TERRY
The Oregonian/OregonLive

PORTLAND — When Peter Steyger learned to speak, he had to wear hearing aids.

At 14 months, he was struck with meningitis. The powerful antibiotic that saved his life largely stripped him of hearing.

His mother, determined to keep him in the hearing community, worked with him an hour a day for four years as part of an intensive regime of speech therapy. Sometimes it took him 10 minutes to learn a single word. He didn't start to catch up to his peers until eight years later.

But today at 54, Steyger is a prominent auditory neuroscientist. At Oregon Health & Science University, he's part of a team of researchers who are studying the auditory system in hopes of helping others who can't hear.

The 10 faculty members in OHSU's Oregon Hearing Research Center are considered trailblazers among their peers.

"I look at their program as a very unique one in the world because of the breadth and the depth of their auditory science and the high quality of the science that's done there," said Jennifer Stone, an auditory neuroscientist at the University of Washington in Seattle.

The center also stands out in another way: It has five professors with hearing loss. Few other auditory research departments have even one scientist with a hearing disability. None has as many as

OHSU, experts say.

Their varied biomedical backgrounds allow them to study every aspect of the auditory system, and their personal experiences inform their research.

"They've all got pretty high profiles and are covering lots of different bases," said Jonathan Ashmore, a leading auditory neuroscientist based at University College London in Britain.

Their work has helped make the center, dating to 1967, one of the biggest nationwide. About a dozen other universities have hearing research centers with at least three faculty members. Only about five have 10 or more. OHSU's department of otolaryngology — an ear, nose and throat specialty — is No. 2 in funding from the National Institutes of Health, at \$10 million a year, right behind Johns Hopkins University.

For the scientists, it's not been easy. Their hearing loss has complicated their lives. They struggled to follow their teachers and professors, keep up in graduate school and complete their post-doctoral training. They had difficulty taking notes. They suffered from a sense of isolation and found it tough to make friends.

But they found a home at the Oregon Hearing Research Center. They're not alone in their disability, and they have a personal motivation to succeed. Though their research might not cure their own hearing loss, they hope to help the hearing of future generations.

"Each and every one of them

had to work very hard to overcome the disabilities that they have but they're all extremely effective communicators and very effective teachers," Stone said. "Each and every one of them is a leader in their field."

Steyger's specialty is the toxicity of certain pharmaceutical drugs to the inner ear. He's studying a powerful class of antibiotics called aminoglycosides, which are known to damage hearing.

Unlike some other antibiotics such as penicillin, which prevent bacteria from dividing, aminoglycosides kill bacteria. They include Gentamicin and Streptomycin, which Steyger was given for meningitis. He figures the antibiotic was responsible for his hearing loss or contributed to it.

His Ph.D. thesis at Keele University in England, where he was born, focused on aminoglycoside-induced damage to the inner ear, which governs hearing and balance. In post-doctorate work at Keele, he studied the anatomy and function of the cochlea — part of the inner ear. When he got an offer from OHSU in 1997, he set up shop on the hill.

His lab is trying to understand how aminoglycosides cross the blood-labyrinth barrier, which has a similar function to the blood-brain barrier but instead of protecting the brain, it protects the ears from harmful substances. Aminoglycosides exploit an existing pathway for other compounds, allowing them to barge through the physical barrier.

Both infections and aminoglycosides can harm hearing by themselves, and in a triple whammy effect, the inflammation that's caused by an infection allows more of the antibiotics into the inner ear. Steyger is trying to understand the mechanics of how that happens.

"This is a serious issue, and it's not just affecting me," he said. "It's still affecting people today."

Eighty percent of premature babies who enter a neonatal intensive care units get antibiotics to prevent infections, Steyger said. If they're kept on them long enough, they can lose their hearing.

"When a kid is born, if they're not treated with aminoglycosides and they have an infection, they can die within 12 hours," Steyger said. "That's why so many kids will get the drug."

His choice to focus on hearing was strategic, he said.

"I expected that they would be more welcoming of a hearing-impaired person," said Brigande, 51. "The annual meetings would have captioning. They would have listening technologies. I thought that this would be an obvious, clear path to give me the best chance to communicate effectively."

At OHSU, he's working with mice that are congenitally deaf. He's found a way to introduce a healthy gene into the inner ear while the animal is in the womb. When they're born, they can hear.

"John's a superstar," Ashmore said. "That really is a technical discovery of the first order."

Brigande wants to see his work

benefit people.