

Summary of GSHP and Energy Efficiency Seminars Taught by Steve Kavanaugh

Scheduled Seminars: Topic is GSHPs unless noted

Several seminars co-taught with Kevin Rafferty, P.E., L.A.W.

Totals	144 Seminars	4531 Attendees since 1993	
2015 Location	Date	Attendees	Sponsor and contact
1 Chattanooga, TN	4/1/2015	12	Chattanooga ASHRAE
2 Winnipeg, MB, Canada	6/4/2015	40	Manitoba Hydro
	Yearly Total	52	
2011 Location	Date	Attendees	Sponsor and contact
1 Vancouver BC, Canada	11/6-7/2011	18	Professional Engineers and Geoscientist of BC
	Yearly Total	18	
2010 Location	Date	Attendees	Sponsor and contact
1 Macon, GA	2/5/2010	8	AHP Engineering, Macon, GA
2 Burlington, VT	2/23-24/10	20	Efficiency Vermont and HeatSpring Energy
3 Midland, MI	5/5/2010	5	Dow Chemical
4 Nashville, TN	9/30/2010	12	EPRI and TVA
5 Madison, WI	10/4-5/10	24	Univ. of Wisc. Engr. Prof. Development
6 Birmingham, AL	12/1/2010	25	Birmingham ASHRAE (Chris Gray - CMGRAY@southernco.com)
	Yearly Total	94	
2009 Location	Date	Attendees	Sponsor and contact
1 Albuquerque, NM	1/13-14/09	50	Loop Tech International (Hunstville, TX)
2 San Mateo, CA	1/20-21/09	32	HeatSpring Energy
3 Danbury, CT	1/29-30/09	38	HeatSpring Energy
4 Boston, MA	2/10-11/09	32	HeatSpring Energy
5 Green Bay, WI	3/17/2009	32	NE Wisconsin ASHRAE
6 Houston, TX	3/31-4/1/09	43	Loop Tech International (Hunstville, TX)
7 Lynnhurst, NJ	4/22-23/09	29	HeatSpring Energy
8 Gaithersburg, MD	4/29-30/09	8	HeatSpring Energy
9 Leander, TX (Austin area)	5/4-5/6	23	American Constructors, MEP Engineering, Leander ISD
10 Okanagan, BC, Canada	5/12-5/13	25	Geo-Exchange BC (with Kevin Rafferty)
11 Boston, MA	6/10-11/09	21	HeatSpring Energy
12 Eagan, MN (Minneapolis area)	6/23-6/24	10	HeatSpring Energy bhayden@heatspring.com
13 Chicago, IL	9/15-9/16	16	HeatSpring Energy
14 Danbury, CT	9/22-9/23	20	HeatSpring Energy
15 Madison, WS	10/05-10/07	26	Univ. of Wisc. Engr. Prof. Development
16 St. Louis, MO	12/4/2010	125	St. Louis ASHRAE Chapter (with Kirk "One-Pipe" Mescher)
	Yearly Total	530	
2008 Location	Date	Attendees	Sponsor
1 Boston, MA	2/5/2008	25	HeatSpring Energy (with Kevin Rafferty)
2 Boston, MA	4/22/2008	18	HeatSpring Energy (with Kevin Rafferty)
3 Pensacola	5/30/2007	54	University of West Florida
4 Chicago, IL	5/16/2008	96	ASHRAE
5 Newark, NJ	6/11/2008	14	HeatSpring Energy (with Kevin Rafferty)
6 Chicago, IL	7/23/2008	18	HeatSpring Energy (with Kevin Rafferty)
7 St. Louis	9/8/2008	60	St. Louis ASHRAE (Topic is HVAC Design for Efficiency)
8 Lincoln, NE	9/16-17/08	100	Lincoln Public Schools and Loop Tech International
9 Washington, DC	9/10/2008	18	HeatSpring Energy
10 Madison, WS	10/14-15/08	40	Univ. of Wisc. Engr. Prof. Dev. olsen@enr.wisc.edu
11 Boston, MA	10/17/2008	16	HeatSpring Energy
12 Philadelphia, PA	11/12-13/08	25	HeatSpring Energy
13 Little Rock, AR	12/5/2008	55	ASHRAE Arkansas
14 Burlington, VT	12/10/2008	48	ASHRAE Vermont "Green Bldgs", ASHRAE 90.1, GSHPs (½ day)
	Yearly Total	587	
2007 Location	Date	Attendees	Sponsor
1 Smyrna, TN	2/21/2007	88	TVA
2 Vancouver, BC, Canada	3/6-7/07	67	GeoExchange BC (with Kevin Rafferty)
3 Des Moines, IA	5/22-23/07	28	Iowa Energy Center
4 Knoxville, TN	5/30/2007	90	TVA (1/2 day Architects, contractors, owners)
5 Knoxville, TN	5/31/2007	18	TVA
6 Boston, MA	7/18-19/07	40	HeatSpring Energy (with Kevin Rafferty)
7 Seattle, WA	9/20/2007	120	AIA Washington (CodeGREEN, 3 hours)
8 Madison, WS	9/24-26/07	39	Univ. of Wisconsin, Engr. Prof. Dev.

9 Boston, MA	11/7-8/07	31	HeatSpring Energy (with Kevin Rafferty)
	Yearly Total	521	
2006 Location	Date	Attendees	Sponsor
1 Madison, WS	9/18-20/06	24	Univ. of Wisconsin, Engr. Prof. Dev
	Yearly Total	24	
2005 Location	Date	Attendees	Sponsor
1 Pensacola, FL	4/12/2005	31	Gulf Power
2 Madison, WS	9/12-14/05	18	Univ. of Wisconsin, Engr. Prof. Dev.
	Yearly Total	49	
2004 Location	Date	Attendees	Sponsor
1 Starkville, MS	5/17/2004	21	TVA
2 Madison, WS	9/13-15/04	15	Univ. of Wisconsin, Engr. Prof. Dev.
3 Whitehorse, Yukon, Canada	10/28-29/04	32	Energy Solutions Centre (Co-Taught with Kevin Rafferty)
	Yearly Total	68	
2003 Location	Date	Attendees	Sponsor
1 Des Moines, IA	2/12-13/03	31	Iowa Energy Center
2 Southbury, CT	5/17/2003	62	AIA Connecticut
3 Madison, WS	9/15-17/03	22	Univ. of Wisconsin, Engr. Prof. Dev.
4 Little Rock, AR	10/17/2003	30	Arkansas Energy Office (HVAC Efficiency)
5 Nashville, TN	12/12/2003	120	TVA (1/2 day on Mold & Moisture)
	Yearly Total	265	
2002 Location	Date	Attendees	Sponsor
1 Madison, WS	9/18-19/02	25	Univ. of Wisconsin, Engr. Prof. Dev.
2 Nashville, TN	9/26/2002	190	TVA (1/2 Day)
	Yearly Total	215	
2001 Location	Date	Attendees	Sponsor
1 San Francisco, CA	3/29-30/01	40	PG&E, Assoc. Ener. Eff. Envio. Sys.
2 Chattanooga, TN	5/10-11/01	50	TVA
3 Nashville, TN	5/17-18/01	55	TVA
4 Decatur, AL	5/23-24/01	35	TVA
5 Knoxville, TN	6/6-7/01	60	TVA
6 Omaha, NE	8/16/2001	75	NE Energy Office, OPPD, LES, NPPD
7 Madison, WS	9/10-11/01	35	Univ. of Wisconsin, Engr. Prof. Dev.
8 Seattle, WA	10/1-2/01	14	ASHRAE (Co-Taught with Kevin Rafferty)
9 Ft. Walton Beach	11/16/2001	22	Gulf Power
	Yearly Total	386	
2000 Location	Date	Attendees	Sponsor
1 Davis, CA	4/6-7/00	14	Assoc. Ener. Eff. Envio. Sys.
2 Chicago, IL	4/25-26/00	15	CRREL – Corps of Engineers (Co-Taught with Kevin Rafferty)
3 Bellvue, WA	6/12-13/00	9	Sound Geothermal
4 Pensacola, FL	9/11/2000	36	Gulf Power Co.
5 Little Rock, AR	9/20/2000	15	Arkansas Dept. of Econ. Dev.
6 Charlotte, NC	12/1/2000	28	Advanced Energy Corporation
7 Starkville, MS	2/29/2000	15	TVA (1/2 Day on ASHRAE Std. 62)
8 Huntsville, AL	3/1/2000	36	TVA (1/2 Day on ASHRAE Std. 62)
9 Nashville, TN	3/22/2000	68	TVA (1/2 Day on ASHRAE Std. 62)
10 Chattanooga, TN	3/23/2000	35	TVA (1/2 Day on ASHRAE Std. 62)
11 Knoxville, TN	4/18/2000	30	TVA (1/2 Day on ASHRAE Std. 62)
12 Johnson City, TN	4/19/2000	24	TVA (1/2 Day on ASHRAE Std. 62)
	Yearly Total	325	
1999 Location	Date	Attendees	Sponsor
1 Dallas, TX	2/18/1999	12	Driscopipe
2 Newark, NJ	4/9/1999	30	GPU Energy
3 Everett, WA	4/22-23/99	14	Sound Geothermal
4 Arlington, TX	5/7/1999	12	ASHRAE/Driscopipe
5 Portland, OR	6/3-4/99	14	Sound Geothermal
6 Arlington, VA	6/10/1999	18	US State Department
7 Bellvue, WA	10/21-22/99	10	Sound Geothermal
8 Roanoke, VA	11/5/1999	42	American Electric Power
9 Raleigh, NC	11/17-18/99	32	CRREL – Corps of Engineers (Co-Taught with Kevin Rafferty)
10 Albuquerque, NM	12/1/1999	22	CRREL – Corps of Engineers (Co-Taught with Kevin Rafferty)
	Yearly Total	206	
1998 Location	Date	Attendees	Sponsor
1 Omaha, NE	1/9/1998	122	Omaha Public Power
2 Grand Forks, ND	1/28/1998	15	Otter Tail Power

3	Fargo, ND	1/29/1998	18	Otter Tail Power
4	Rockford, MN	1/30/1998	11	Otter Tail Power
5	Davis, CA	3/20/1998	18	Western GHPC Training
6	Spartanburg, SC	4/29/1998	12	Duke Power
7	Chattanooga, TN	9/11/1998	28	TVA
8	Nashville, TN	9/25/1998	29	TVA
9	Newark, NJ	10/2/1998	23	GPU Energy
10	Reading, PA	10/9/1998	32	GPU Energy
11	Johnstown, PA	10/16/1998	22	GPU Energy
12	Colorado Springs, CO	10/23/1998	16	Colorado Springs Utilities
13	Greensboro, NC	10/29/1998	12	Duke Power
14	Huntsville, AL	11/6/1998	17	TVA
15	Nashville, TN	11/13/1998	32	TVA
16	Jonesboro, AR	11/23/1998	19	Jonesboro City Water & Light
17	Albuquerque, NM	12/15-16/98	11	CRREL – Corps of Engineers (Co-Taught with Kevin Rafferty)
	Yearly Total		437	
1997	Location	Date	Attendees	Sponsor
1	Clanton, AL	1/15/1997	16	Alabama Power
2	Panama City, FL	2/20/1997	15	Gulf Power
3	Pensacola, FL	2/21/1997	25	Gulf Power
4	Harrisburg, PA	4/10/1997	30	Penn. Power & Light
5	Charleston, WV	4/11/1997	16	Webster County School Board
6	Greenville, SC	4/18/1997	8	Duke Power
7	Minneapolis, MN	5/8,9/97	29	Northern States Power
8	Dubuque, IA	5/15/1997	22	Interstate Power
9	Albany, NY	7/22/1997	20	Fisher Engineering
10	Greensboro, NC	9/30/1997	12	Duke Power
11	Durham, NC	9/10/1997	10	Duke Power
12	Clanton, AL	11/19/1997	20	Alabama Power
13	Ft. Wayne, IN	12/5/1997	12	WaterFurnace Intl.
14	Tampa, FL	12/10-11/97	16	CRREL - Corps of Engineers (Co-Taught with Kevin Rafferty)
	Yearly Total		251	
1996	Location	Date	Attendees	Sponsor
1	Cleveland, OH	3/19/1996	18	Centerior
2	Charlotte, NC	4/4/1996	17	Duke Power
3	Raleigh, NC	5/2/1996	22	Carolina P&L
4	Lexington, KY	5/7/1996	24	Ken. Power & EKP
5	Calmar, IA	5/14/1996	47	Interstate Power
6	Birmingham	10/17/1996	30	ASHRAE CRC (2 hr.)
7	Oklahoma City	10/25/1996	20	OG&E
8	Clanton, AL	11/21/1996	20	Alabama Power
9	Reno, NV	12/10-12/96	18	CRREL – Corps of Engineers (Co-Taught with Kevin Rafferty)
	Yearly Total		216	
1995	Location	Date	Attendees	Sponsor
1	Tuscaloosa, AL	3/6/1995	4	Duke Power
2	Vienna, VA	5/9/1995	20	Virginia Power
3	Richmond, VA	5/10/1995	26	Virginia Power
4	Virginia Beach	5/11/1995	22	Virginia Power
5	Wilkes-Barre, PA	11/13/1995	30	Pennsylvania Power & Light
6	Atlanta	12/13/1995	16	Georgia Geothermal
	Yearly Total		118	
1994	Location	Date	Attendees	Sponsor
1	Tuscaloosa	3/9/1994	47	Univ. of Alabama
2	Gering, NE	6/9/1994	30	Nebraska Soc. Prof. Engineers (1/2 day)
3	Lexington, KY	Jun-94	22	Kentucky Util. & East Kentucky Power
4	Tuscaloosa	7/12/1994	17	Univ. of Alabama
5	Omaha, NE	10/14/1994	35	Omaha Pub. Power & Nebraska Pub. Power
	Yearly Total		151	
1993	Location	Date	Attendees	Sponsor
1	Lincoln, NE	Oct-93	18	Lincoln Electric Systems
	Yearly Total		18	