Supplementary Material

Table S1: Phylogenetic and Clustering Results. If no results presented (--), then the isolate was not sufficiently related to other isolates to be identified as part of a named cluster for that analysis. It is important to note that consecutive numbers from an analysis cannot necessarily be inferred as more highly related than non-consecutive numbers (i.e., the numbering schemes are random).

Strain_ID	Source	State*	Serotype	Sequence_type	Likelihood Tree	Distance Tree	PopPUNK	STRUCTURE (oyster only)
GCSL_R52	Oyster	WA	O3:Kuk	ST735	1	8	4	--
GCSL_R53	Oyster	WA	O3:Kuk	ST735	1	8	4	--
GCSL_R54	Oyster	WA	O3:Kuk	ST735	1	8	4	--
GCSL_R55	Oyster	WA	O3:Kuk	ST735	1	8	4	--
GCSL_R56	Oyster	WA	O3:Kuk	ST735	1	8	4	--
GCSL_R108	Oyster	PEI	O3:K5	ST1151	2	7	2	--
GCSL_R109	Oyster	PEI	O3:K5	ST1151	2	7	2	--
GCSL_R110	Oyster	PEI	O3:K5	ST1151	2	7	2	--
GCSL_R95	Oyster	PEI	O3:K5	ST1151	2	7	2	--
GCSL_R98	Oyster	PEI	O3:K5	ST1151	2	7	2	--
GCSL_R99	Oyster	PEI	O3:K5	ST1151	2	7	2	--
CDC_K4637-1	Clinical	NY	O3:K6	ST3	3	6	3	Not Tested
CDC_K4637-2	Clinical	NY	O3:K6	ST3	3	6	3	Not Tested
CDC_K4775	Clinical	GA	O3:K6	ST3	3	6	3	Not Tested
CDC_K5010-1	Clinical	MA	O1:Kuk	ST3	3	6	3	Not Tested
CDC_K5010-2	Clinical	MA	O1:Kuk	ST3	3	6	Not Tested	Not Tested
CDC_K5058	Clinical	TX	O3:K6	ST3	3	6	3	Not Tested
CDC_K5528	Clinical	GA	O4:K68	ST3	3	6	3	Not Tested
CDC_K4639-1	Clinical	NY	O4:K12	ST36	4	4	1	Not Tested
CDC_K4639-2	Clinical	NY	O4:Kuk	ST36	4	4	1	Not Tested
CDC_K5278	Clinical	WA	O4:K12	ST36	4	4	1	Not Tested
CDC_K5280	Clinical	WA	O4:K12	ST36	4	4	1	Not Tested
CDC_K5281	Clinical	WA	O4:K12	ST36	4	4	1	Not Tested
CDC_K5308	Clinical	AK	O4:K63	ST36	4	4	1	Not Tested
CDC_K5328	Clinical	IN	O4:K12	ST36	4	4	1	Not Tested
CDC_K5345-1	Clinical	IA	O4:K12	ST36	4	4	1	Not Tested
CDC_K5345-2	Clinical	IA	O4:K12	ST36	4	4	1	Not Tested
CDC_K5346	Clinical	PA	O4:K12	ST36	4	4	1	Not Tested
CDC_K5429	Clinical	NV	O4:K12	ST36	4	4	1	Not Tested
CDC_K5433	Clinical	WA	O4:Kuk	ST36	4	4	1	Not Tested
CDC_K5437	Clinical	WA	O4:Kuk	ST36	4	4	1	Not Tested
CDC_K5456	Clinical	WA	O4:Kuk	ST36	4	4	1	Not Tested
CDC_K5457	Clinical	WA	O4:Kuk	ST36	4	4	1	Not Tested
CDC_K5512	Clinical	OK	O4:K12	ST36	4	4	1	Not Tested
CDC_K5629	Clinical	GA	O4:K13	ST36	4	4	1	Not Tested
CDC_K5638	Clinical	MD	O4:K12	ST36	4	4	1	Not Tested
CDC_K5277	Clinical	WA	O1:Kuk	ST65	5	5	5	Not Tested
CDC_K5279	Clinical	WA	O1:Kuk	ST65	5	5	5	Not Tested
CDC_K5435	Clinical	WA	O1:Kuk	ST65	5	5	5	Not Tested
CDC_K5438	Clinical	WA	O1:Kuk	ST65	5	5	5	Not Tested
CDC_K5701	Clinical	OR	O1:Kuk	ST65	5	5	5	Not Tested
GCSL_R51	Oyster	AL	O8:Kuk	ST676	6	9	--	2
GCSL_R75	Oyster	VA	O8:Kuk	ST676	6	9	--	2
GCSL_R76	Oyster	VA	O8:Kuk	ST676	6	9	--	2
GCSL_R77	Oyster	VA	O8:Kuk	ST676	6	9	--	2
CDC_K4558-2	Clinical	LA	O3:Kuk	ST636	7	3	--	Not Tested

CDC_K4636	Clinical	NY	O10:Kuk	ST636	7	3	--	Not Tested
CDC_K5618	Clinical	NY	O10:Kuk	ST636	7	3	--	Not Tested
CDC_K5620	Clinical	NY	O10:Kuk	ST636	7	3	--	Not Tested
CDC_K4588	Clinical	ME	O5:Kuk	ST746	8	1	--	Not Tested
CDC_K4981	Clinical	OK	O1:Kuk	ST748	8	1	--	Not Tested
CDC_K5067	Clinical	SD	O1:K56	ST775	8	--	--	Not Tested
CDC_K5073	Clinical	MD	O3:K56	ST750	8	--	--	Not Tested
CDC_K5324-1	Clinical	VA	O1:K20	ST1132	8	1	--	Not Tested
CDC_K5324-2	Clinical	VA	O1:K20	ST1132	8	1	--	Not Tested
CDC_K5579	Clinical	IN	O4:K63	ST43	8	1	--	Not Tested
GCSL_R10	Oyster	FL	O1:Kuk	ST313	8	--	--	--
GCSL_R111	Oyster	PEI	O11:Kuk	ST1152	8	1	--	--
GCSL_R125	Oyster	FL	O11:Kuk	ST739	8	1	--	--
GCSL_R129	Oyster	FL	O11:Kuk	ST1153	8	1	--	3
GCSL_R136	Oyster	SC	O1:K20	ST775	8	1	--	3
GCSL_R137	Oyster	SC	O1:K20	ST775	8	1	--	3
GCSL_R138	Oyster	SC	O1:K20	ST775	8	1	--	3
GCSL_R143	Oyster	FL	O5:Kuk	ST743	8	1	--	--
GCSL_R144	Oyster	FL	O5:Kuk	ST1149	8	1	--	--
GCSL_R145	Oyster	FL	O5:Kuk	ST1149	8	1	--	--
GCSL_R146	Oyster	FL	O5:Kuk	ST1149	8	1	--	--
GCSL_R149	Oyster	FL	O1:Kuk	ST313	8	1	--	--
GCSL_R150	Oyster	FL	O1:Kuk	ST313	8	1	--	--
GCSL_R30	Oyster	FL	O1:Kuk	ST23	8	1	--	3
GCSL_R31	Oyster	LA	O1:Kuk	ST23	8	1	--	3
GCSL_R32	Oyster	LA	O10:Kuk	ST1142	8	1	--	--
GCSL_R42	Oyster	WA	O10:Kuk	ST1155	8	1	--	--
GCSL_R45	Oyster	WA	O5:Kuk	ST61	8	1	--	--
GCSL_R59	Oyster	ME	O5:Kuk	ST113	8	1	--	--
GCSL_R62	Oyster	ME	O1:Kuk	ST1136	8	1	--	--
GCSL_R65	Oyster	ME	O5:Kuk	ST1150	8	1	--	--
GCSL_R86	Oyster	FL	O6:Kuk	ST737	8	1	--	--
GCSL_R96	Oyster	PEI	O11:Kuk	ST1152	8	1	--	--
CDC_K5306	Clinical	GA	O4:K9	ST34	9	2	--	Not Tested
GCSL_R12	Oyster	LA	O4:K8	ST32	9	2	--	1
GCSL_R16	Oyster	FL	O4:K9	ST34	9	2	--	1
GCSL_R26	Oyster	NJ	O4:K8	ST32	9	2	--	1
GCSL_R47	Oyster	AL	O4:K8	ST32	9	2	--	1
CDC_K4556-2	Clinical	LA	O1:Kuk	ST744	--	--	--	Not Tested
CDC_K4557	Clinical	LA	O1:K33	ST799	--	--	--	Not Tested
CDC_K4558-1	Clinical	LA	O3:K39	ST1143	--	--	--	Not Tested
CDC_K4638	Clinical	NY	O10:Kuk	ST809	--	--	--	Not Tested
CDC_K4762	Clinical	VA	O5:K17	ST674	--	--	--	Not Tested
CDC_K4763	Clinical	VA	O5:Kuk	UNTYPE	--	--	--	Not Tested
CDC_K4764-1	Clinical	VA	O8:K41	UNTYPE	--	--	--	Not Tested
CDC_K4764-2	Clinical	VA	O8:K41	ST1156	--	--	--	Not Tested
CDC_K4842	Clinical	MD	O5:K47	ST1144	--	--	--	Not Tested
CDC_K4857-1	Clinical	HI	O5:K17	ST79	--	--	--	Not Tested
CDC_K4857-2	Clinical	HI	O5:Kuk	ST79	--	--	--	Not Tested
CDC_K4858	Clinical	HI	O4:K4	ST283	--	--	--	Not Tested
CDC_K4859	Clinical	HI	O6:K18	UNTYPE	--	--	--	Not Tested
CDC_K5009-2	Clinical	MA	O4:K53	ST749	--	--	--	Not Tested
CDC_K5059-1	Clinical	TX	O5:Kuk	ST1147	--	1	--	Not Tested
CDC_K5059-2	Clinical	TX	O5:Kuk	ST1147	--	1	--	Not Tested
CDC_K5125	Clinical	MS	O3:Kuk	ST772	--	--	--	Not Tested
CDC_K5126	Clinical	MS	O3:Kuk	ST1131	--	--	--	Not Tested

CDC_K5276	Clinical	NY	O11:Kuk	ST631	--	--	--	Not Tested
CDC_K5282	Clinical	HI	O5:Kuk	UNTYPE	--	--	--	Not Tested
CDC_K5323-1	Clinical	VA	O5:K17	ST674	--	--	--	Not Tested
CDC_K5323-2	Clinical	VA	O5:Kuk	ST674	--	--	--	Not Tested
CDC_K5330	Clinical	TX	O5:Kuk	ST1713	--	--	--	Not Tested
CDC_K5331	Clinical	GA	O4:K8	ST265	--	--	--	Not Tested
CDC_K5428	Clinical	NV	O1:Kuk	ST199	--	--	--	Not Tested
CDC_K5439	Clinical	WA	O4:K8	ST189	--	--	--	Not Tested
CDC_K5485	Clinical	NC	O6:K18	ST50	--	--	--	Not Tested
CDC_K5582	Clinical	GA	O11:Kuk	ST631	--	--	--	Not Tested
CDC_K5635	Clinical	MD	O5:K30	ST753	--	--	--	Not Tested
GCSL_R126	Oyster	FL	O4:K42	ST1146	--	--	--	--
GCSL_R13	Oyster	LA	O4:K10	ST732	--	--	--	--
GCSL_R130	Oyster	FL	O4:K37	ST1140	--	--	--	--
GCSL_R131	Oyster	FL	O10:Kuk	ST1141	--	--	--	--
GCSL_R135	Oyster	SC	O3:Kuk	ST741	--	--	--	--
GCSL_R17	Oyster	FL	O4:Kuk	ST536	--	--	--	--
GCSL_R21	Oyster	TX	O5:Kuk	ST12	--	--	--	--
GCSL_R29	Oyster	FL	O11:Kuk	ST734	--	1	--	--
GCSL_R33	Oyster	LA	O3:Kuk	ST28	--	--	--	3
GCSL_R5	Oyster	TX	O10:Kuk	ST1133	--	--	--	--
GCSL_R57	Oyster	WA	O3:Kuk	ST1148	--	--	--	3
GCSL_R6	Oyster	TX	O10:Kuk	ST1133	--	--	--	--
GCSL_R60	Oyster	ME	O10:Kuk	ST1135	--	--	--	--
GCSL_R63	Oyster	ME	O4:Kuk	UNTYPE	--	--	--	--
GCSL_R7	Oyster	TX	O10:Kuk	ST1134	--	--	--	--
GCSL_R74	Oyster	VA	O4:K34	ST108	--	--	--	--
GCSL_R8	Oyster	TX	O10:Kuk	ST1134	--	--	--	--
GCSL_R87	Oyster	FL	O8:K70	ST320	--	--	--	--
GCSL_R88	Oyster	FL	O8:K70	ST320	--	--	--	--

Figure Legends

Figure S1. Histogram of the number of gene clusters of each size. To evaluate COG size distribution, a histogram of COG size frequency was constructed by counting the number of COGs of each size and using geom_bar in Plotnine, an implementation of ggplot in Python**.**

Figure S2. The phylogenetic relationships between isolates from clinical and oyster sources based on whole genome distance analysis. For the distance tree, assembly of paired end reads was done using ABySS 1.5.2 using k=64 and genomic distances were determined using the Meier-Kolthoff method and implemented locally using PanCake. Distance matrices were translated into the newick tree format using Mega7 with Neighbor-Joining and visualized using the MATLAB software. The nine largest supported clades are colored. Clinical isolates are labeled in red and oyster isolates labeled in blue. Partitions which correspond to the likelihood analysis are identified.
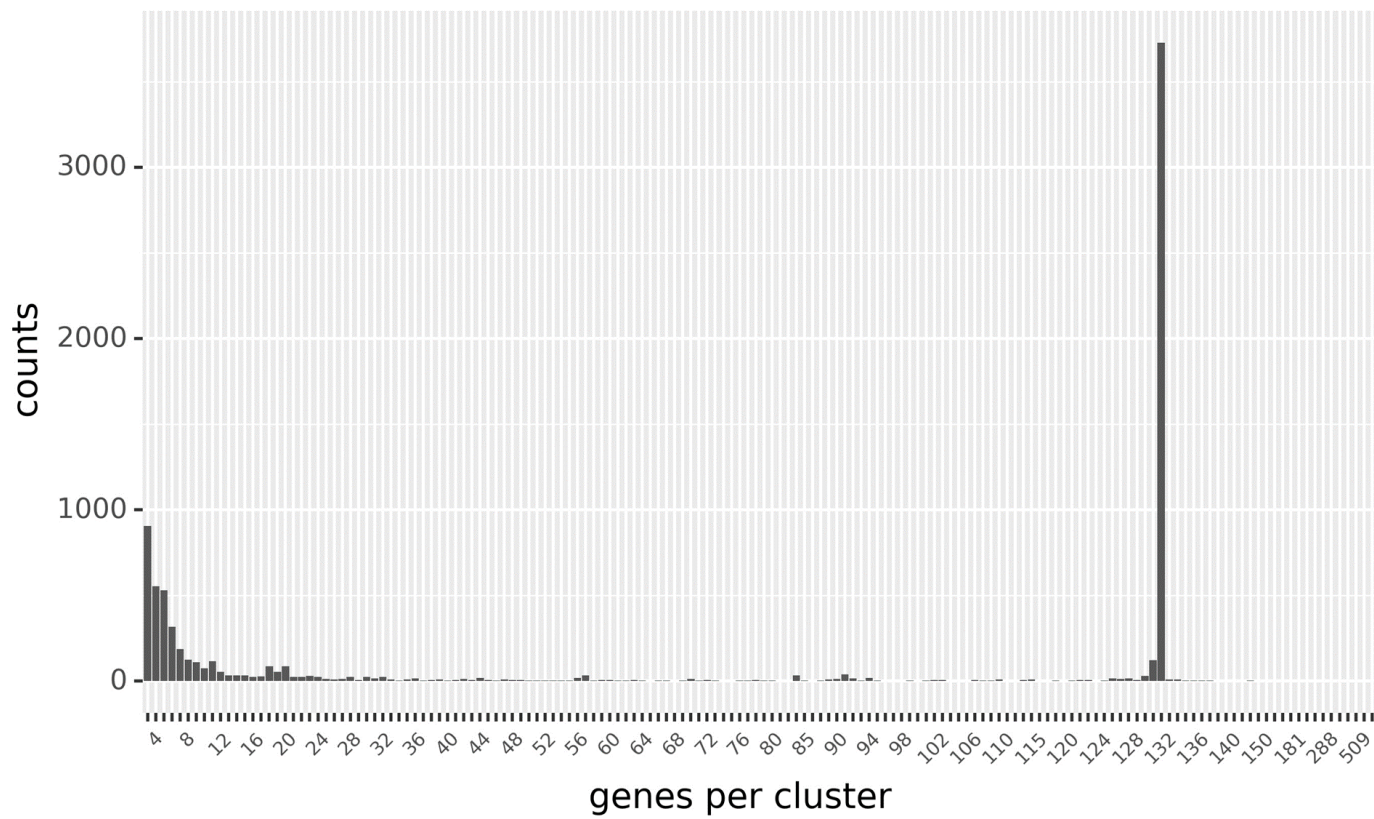
Figure S1.

Figure S2.