

Global Diversity in the Human Salivary Microbiome

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Supplemental Material

Figures S1-S4

Tables S1-S15

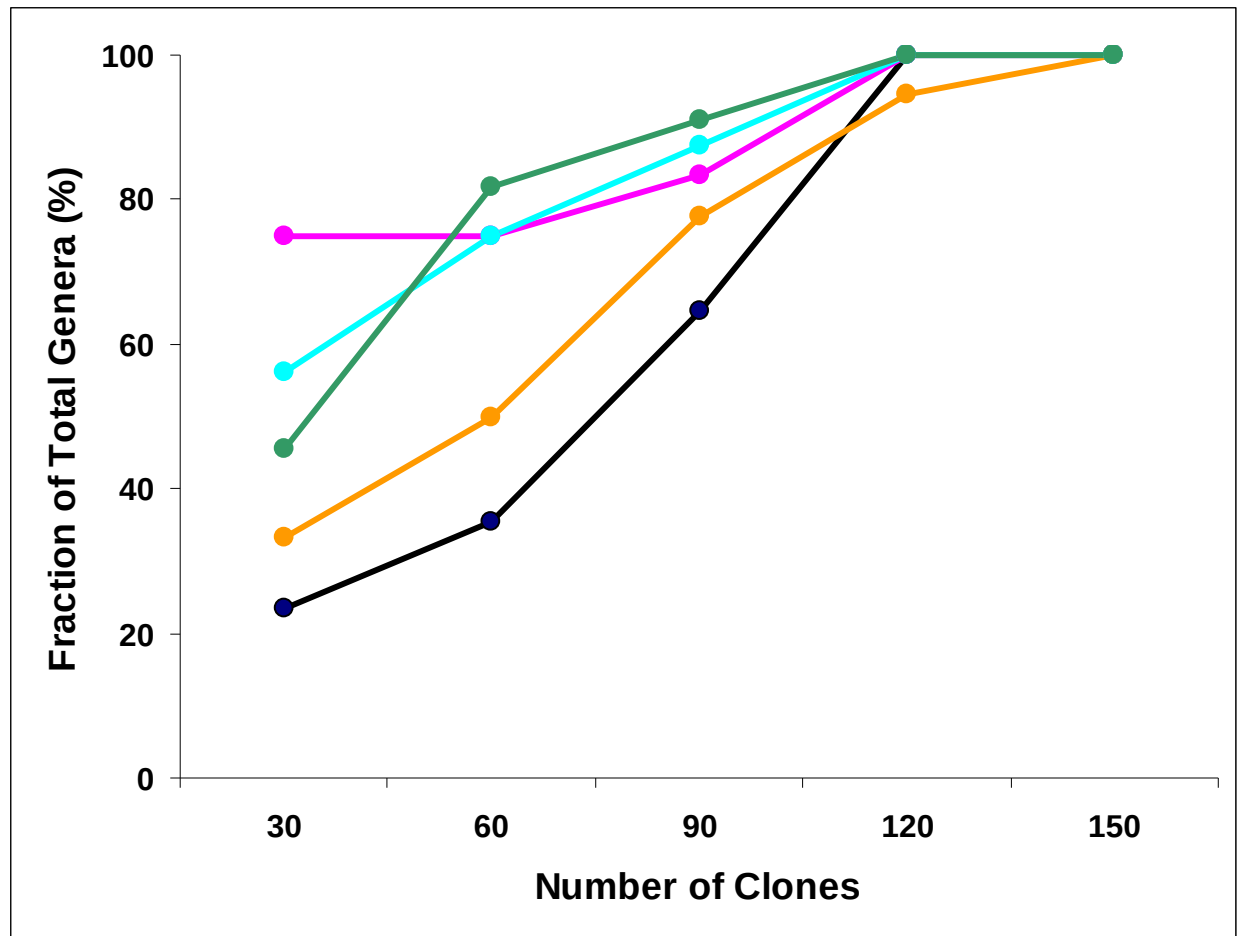


Figure S1. Fraction of different bacterial genera identified from different numbers of cloned partial 16S rRNA sequences. The indicated number of cloned sequences were sampled at random from 150 sequences from each of five individuals. Bacterial genera were identified by comparison to the RDPII database, as described in the Materials and Methods. Each different color line represents the results from one individual; the total number of genera observed from all 150 sequences for each individual is set equal to 100%. Since for all five individuals 120 sequences suffice to capture 94-100% of the bacterial genera observed in 150 sequences, an average of 120 sequences per individual were obtained for the 120 individuals in this study.

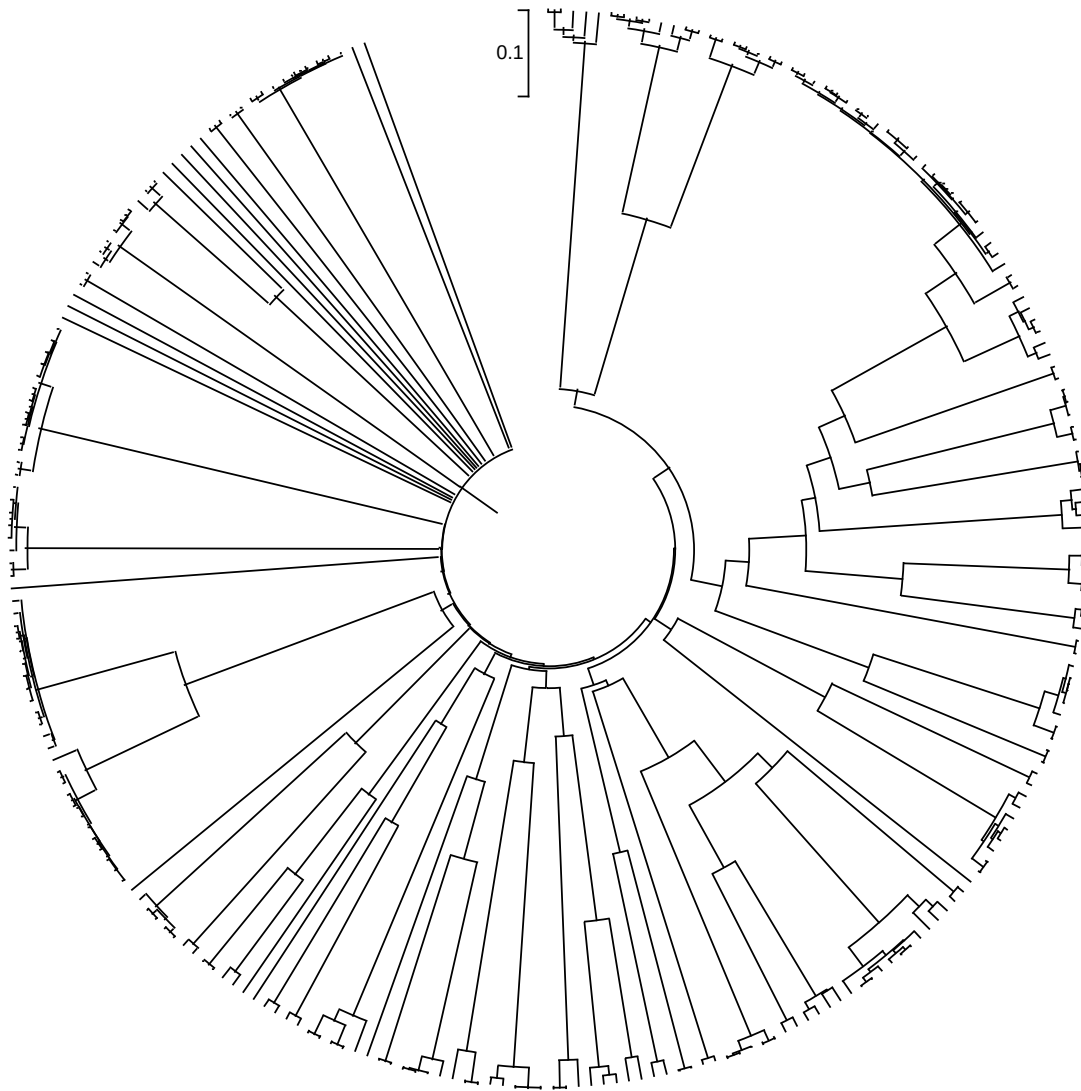


Figure S2. Phylogenetic (UPGMA) tree of the "unknown" sequences, based on pairwise estimates of dissimilarity (i.e., the fraction of different sites). These sequences fall into 64 different clusters at a similarity level of 90% (corresponding to a branch length of 0.1), and hence define 64 putative new genera.

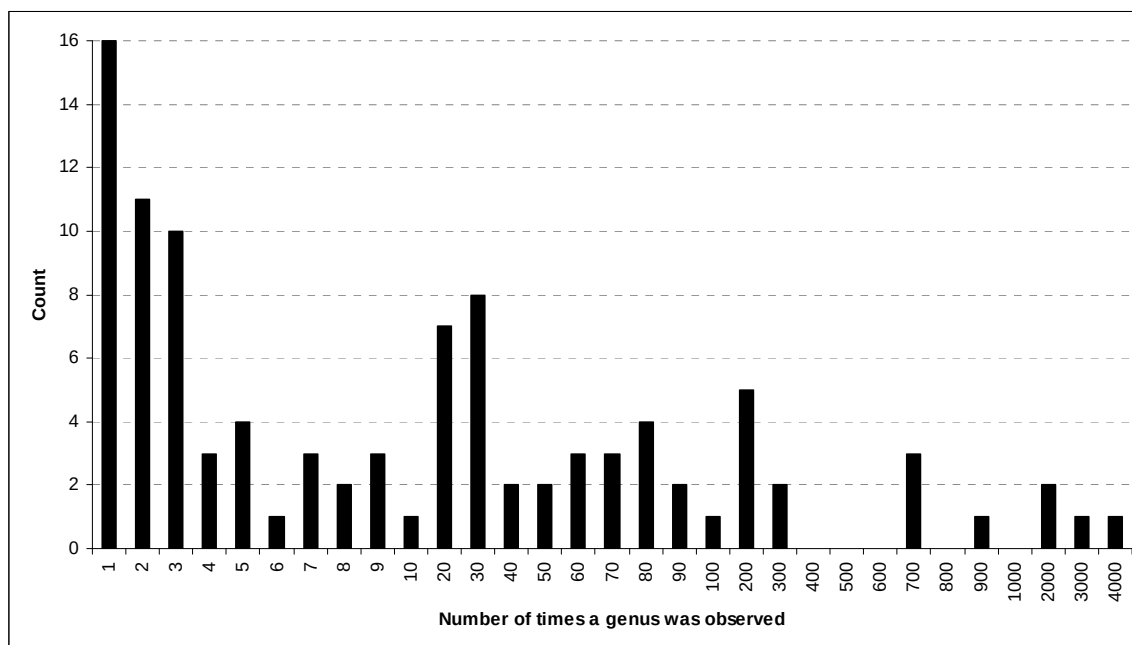


Figure S3. Frequency distribution of the number of times a genus was observed. Note that the scale along the X-axis runs from 1-10, then from 10-100, 100-1000, and finally 1000-4000. For example, the value for 200 indicates that 5 genera were each observed between 200-300 times in the collection of 13,862 sequences for which a genus could be assigned.

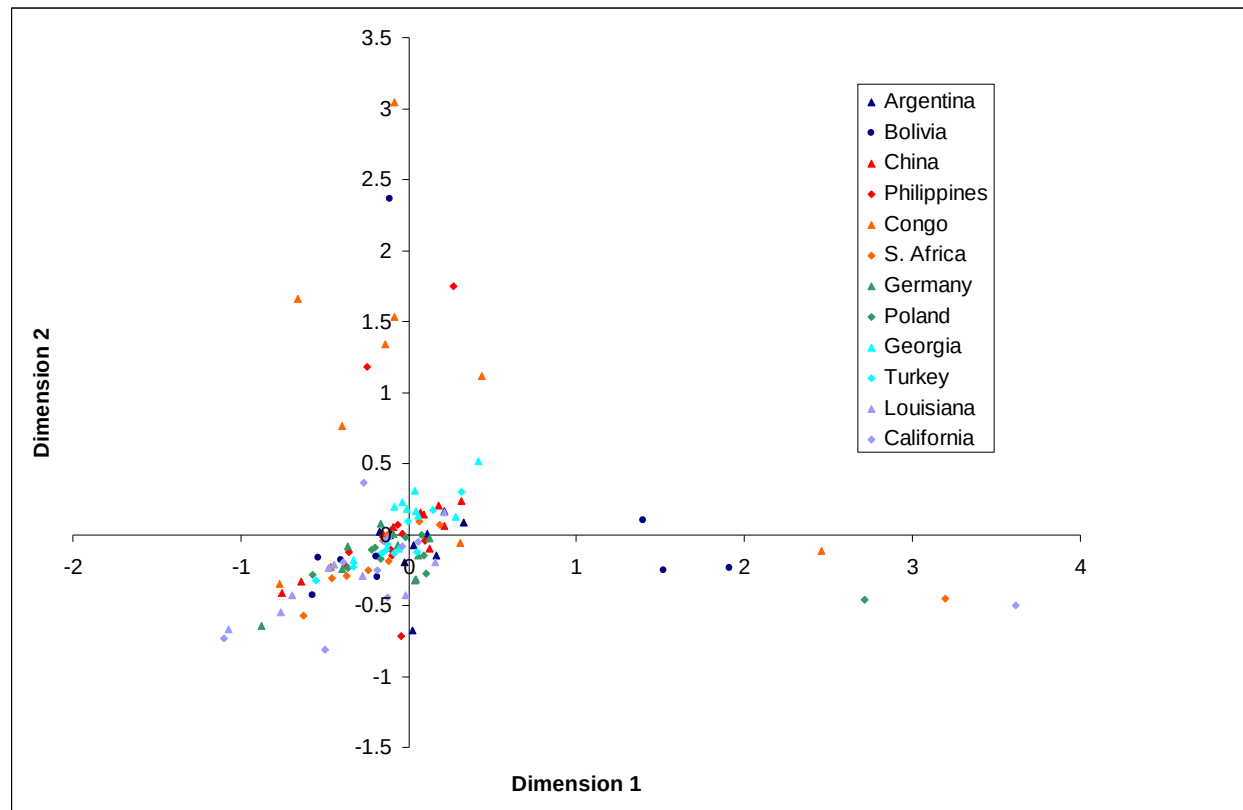


Figure S4. MDS plot based on linearized F_{st} distances between each pair of individuals, calculated from the genus composition.

Table S1. Frequency (count) of each genus in each of the 10 saliva samples (Arg_a through Arg_j) from Buenos Aires, Argentina.

Genus	Arg_a	Arg_b	Arg_c	Arg_d	Arg_e	Arg_f	Arg_g	Arg_h	Arg_i	Arg_j	TOTAL
Actinobacillus	2	1	0	0	0	2	0	0	0	4	9
Actinomyces	0	2	0	4	4	0	0	0	6	5	21
Aggregatibacter	1	1	0	0	0	1	0	1	1	0	5
Alysiella	1	0	0	0	0	0	0	0	0	0	1
Anaerovorax	0	0	0	0	0	0	0	0	0	1	1
Atopobium	0	0	1	0	2	0	0	0	0	0	3
Bulleidia	0	0	0	1	0	0	0	0	0	0	1
Campylobacter	0	0	2	0	1	1	3	1	0	0	8
Capnocytophaga	0	4	0	0	0	0	0	0	1	0	5
Catonella	0	0	0	0	0	0	0	1	0	0	1
Chryseobacterium	0	0	0	0	0	1	0	0	0	0	1
Coprococcus	0	0	0	2	0	0	0	0	0	0	2
Corynebacterium	1	1	0	0	0	0	0	1	0	0	3
Derxia	0	1	0	0	0	1	4	1	0	0	7
Dialister	0	1	0	0	0	0	1	0	0	0	2
Enterobacter	0	0	0	0	0	0	5	0	0	0	5
Enterococcus	0	1	0	1	0	0	0	0	0	2	4
Eubacterium	2	1	0	1	0	2	1	1	1	1	10
Filifactor	0	0	0	0	0	1	0	0	0	0	1
Fusobacterium	3	2	0	2	6	4	2	3	3	1	26
Gemella	0	0	0	0	1	3	1	0	1	0	6
Granulicatella	1	4	1	2	0	2	2	0	3	0	15
Haemophilus	25	9	3	3	10	15	10	13	3	1	92
Kingella	0	0	0	0	0	0	1	1	0	0	2
Leptotrichia	1	1	3	5	1	3	2	7	2	2	27
Megasphaera	0	0	2	1	5	0	0	0	0	5	13
Micromonas	2	1	0	0	0	0	0	0	0	0	3
Moraxella	0	13	0	0	0	0	0	0	0	0	13
Neisseria	39	30	0	4	1	6	16	24	27	1	148

Genus	Arg_a	Arg_b	Arg_c	Arg_d	Arg_e	Arg_f	Arg_g	Arg_h	Arg_i	Arg_j	TOTAL
Oribacterium	0	0	0	3	0	4	0	4	0	2	13
Parascardovia	0	0	1	0	0	0	0	0	0	0	1
Peptostreptococcus	0	0	0	0	0	0	0	0	1	0	1
Porphyromonas	1	4	0	0	1	11	4	3	1	0	25
Prevotella	3	10	32	43	55	25	12	11	15	40	246
Rothia	12	5	6	8	8	1	7	8	13	3	71
Ruminococcus	0	0	0	0	1	0	0	0	0	2	3
Salmonella	0	0	0	0	0	0	1	0	0	0	1
Selenomonas	0	0	1	3	1	1	2	1	0	3	12
Simonsiella	0	0	0	0	0	0	1	0	0	0	1
Sneathia	0	0	0	0	0	2	0	0	0	0	2
Streptobacillus	0	0	0	0	0	2	0	0	0	1	3
Streptococcus	17	17	15	4	19	24	28	20	29	16	189
Syntrophococcus	0	0	0	0	0	0	0	0	0	1	1
TM7	0	0	0	1	0	1	2	0	1	0	5
Treponema	0	1	0	0	0	2	0	0	0	0	3
Veillonella	4	0	54	29	7	6	6	15	15	25	161
Unclassified	0	1	1	0	0	2	1	0	0	1	6
Unknown	0	2	0	2	1	1	0	1	1	1	9
TOTAL	115	113	122	119	124	124	112	117	124	118	1188

Table S2. Frequency (count) of each genus in each of the 10 saliva samples (Bol_a through Bol_j) from La Paz, Bolivia.

Genus	Bol_a	Bol_b	Bol_c	Bol_d	Bol_e	Bol_f	Bol_g	Bol_h	Bol_i	Bol_j	TOTAL
Actinobacillus	0	0	0	0	0	2	1	2	1	0	6
Actinomyces	0	0	0	2	0	0	0	0	1	0	3
Aggregatibacter	0	0	0	0	2	0	2	0	0	0	4
Alysiella	0	0	0	1	0	0	0	0	0	0	1
Atopobium	2	0	0	0	0	0	0	0	0	0	2
Bulleidia	0	1	1	0	0	0	1	0	1	0	4
Buttiauxella	0	0	0	5	0	0	0	0	0	0	5
Campylobacter	0	0	1	0	0	0	1	0	4	0	6
Capnocytophaga	0	0	0	0	1	0	0	0	0	0	1
Catonella	1	0	2	0	0	0	1	0	0	0	4
Chryseobacterium	0	0	0	0	1	0	0	0	0	0	1
Citrobacter	0	1	0	1	0	0	0	0	0	0	2
Cloacibacterium	1	0	1	0	1	0	0	0	0	0	3
Enterobacter	0	84	0	2	0	0	0	0	0	18	104
Enterococcus	0	0	0	0	2	0	0	0	0	0	2
Eubacterium	0	0	1	0	0	0	0	0	0	1	2
Fusobacterium	1	0	3	0	4	2	2	0	6	1	19
Gemella	0	2	0	0	8	3	0	0	0	3	16
Granulicatella	0	1	0	0	4	3	0	0	1	0	9
Haemophilus	9	1	10	4	3	7	14	3	5	4	60
Klebsiella	0	7	0	3	2	0	0	0	0	2	14
Leptotrichia	2	0	6	1	1	0	2	1	4	1	18
Mannheimia	0	0	0	0	1	0	0	0	0	0	1
Megasphaera	0	1	2	0	0	0	0	0	0	0	3
Mitsuokella	0	0	1	0	0	0	0	0	0	0	1
Neisseria	1	1	10	2	4	17	13	2	9	4	63
Oribacterium	0	0	1	1	1	3	0	1	1	0	8
Pasteurella	0	0	0	0	0	0	1	0	0	0	1
Porphyromonas	0	0	0	0	0	4	1	1	6	0	12

Genus	Bol_a	Bol_b	Bol_c	Bol_d	Bol_e	Bol_f	Bol_g	Bol_h	Bol_i	Bol_j	TOTAL
Prevotella	42	5	25	13	9	19	21	21	21	1	177
Rahnella	0	0	0	0	0	0	0	4	0	15	19
Rothia	5	0	2	0	2	2	5	1	4	2	23
Ruminococcus	1	0	0	0	1	0	0	0	0	0	2
Selenomonas	3	0	3	0	0	0	0	0	0	0	6
Serratia	0	2	0	79	8	0	0	63	0	61	213
Streptobacillus	0	0	0	0	0	0	0	1	0	0	1
Streptococcus	33	7	36	4	61	52	48	5	32	7	285
Syntrophococcus	1	0	1	0	0	0	0	0	0	0	2
TM7	0	0	1	0	0	0	0	0	0	0	1
Thermovirga	0	0	0	0	1	0	0	0	0	0	1
Treponema	0	0	1	0	0	0	1	0	0	0	2
Veillonella	32	2	18	6	3	1	5	10	18	6	101
Yersinia	0	0	0	0	0	0	0	0	0	1	1
Unclassified	0	0	0	0	0	0	0	1	0	0	1
Unknown	3	0	1	0	1	3	0	1	1	1	11
TOTAL	137	115	127	124	121	118	119	117	115	128	1221

Table S3. Frequency (count) of each genus in each of the 10 saliva samples (Cal_a through Cal_j) from Oakland, California.

Genus	Cal_a	Cal_b	Cal_c	Cal_d	Cal_e	Cal_f	Cal_g	Cal_h	Cal_i	Cal_j	TOTAL
Abiotrophia	0	1	0	4	0	0	0	1	0	1	7
Actinobacillus	0	1	0	0	0	1	0	0	0	0	2
Actinomyces	1	2	0	1	0	0	0	3	3	1	11
Aggregatibacter	0	0	0	4	0	0	0	0	1	0	5
Alysiella	0	0	0	0	0	0	1	0	0	0	1
Atopobium	0	1	0	1	0	2	0	0	3	0	7
Bulleidia	0	0	1	1	0	1	0	0	2	1	6
Campylobacter	2	0	1	0	0	1	0	0	1	0	5
Capnocytophaga	0	0	1	0	0	0	0	0	3	0	4
Catonella	0	0	0	0	0	0	0	0	0	1	1
Chryseobacterium	1	0	0	0	0	0	0	0	0	0	1
Cloacibacterium	0	0	0	0	0	0	0	1	0	0	1
Corynebacterium	0	0	0	0	0	0	0	0	1	2	3
Derxia	0	2	0	0	0	0	0	0	0	0	2
Enterococcus	0	1	1	1	0	1	0	0	0	0	4
Eubacterium	0	0	0	0	0	1	0	0	0	0	1
Fusobacterium	2	4	0	0	1	2	0	2	1	0	12
Gemella	0	1	0	3	0	0	0	7	1	4	16
Granulicatella	1	5	2	1	0	2	1	4	2	1	19
Haemophilus	32	14	10	2	0	5	0	5	12	1	81
Kingella	0	0	0	1	0	0	0	0	0	0	1
Leptotrichia	1	3	0	1	0	0	0	0	0	1	6
Megasphaera	0	1	2	0	1	2	0	0	0	0	6
Micromonas	0	0	0	1	0	0	0	0	1	0	2
Neisseria	4	16	14	4	0	3	0	23	8	1	73
Nesterenkonia	0	0	0	1	0	0	0	0	0	0	1
Oribacterium	5	2	0	0	1	1	0	2	0	1	12
Parascardovia	0	0	0	0	1	0	0	0	0	0	1
Peptostreptococcus	1	0	3	0	0	0	0	0	0	0	4

Genus	Cal_a	Cal_b	Cal_c	Cal_d	Cal_e	Cal_f	Cal_g	Cal_h	Cal_i	Cal_j	TOTAL
Porphyromonas	1	2	6	2	0	2	0	2	0	0	15
Prevotella	25	10	24	10	19	53	1	1	9	11	163
Rothia	14	17	13	20	2	1	1	8	2	8	86
Ruminococcus	0	0	0	0	0	0	0	0	0	1	1
Selenomonas	0	0	1	0	2	0	0	0	2	0	5
Serratia	0	0	0	0	0	0	118	0	0	0	118
Streptococcus	13	28	17	36	48	16	2	49	31	91	331
Syntrophococcus	0	0	1	0	1	0	0	0	1	0	3
TM7	0	0	2	3	0	2	0	1	1	1	10
Veillonella	8	9	17	24	45	11	0	4	19	6	143
Unclassified	0	0	0	0	1	0	0	1	2	0	4
Unknown	1	0	0	2	0	2	0	1	2	0	8
TOTAL	112	120	116	123	122	109	124	115	108	133	1182

Table S4. Frequency (count) of each genus in each of the 10 saliva samples (Lou_a through Lou_j) from Baton Rouge, Louisiana.

Genus	Lou_a	Lou_b	Lou_c	Lou_d	Lou_e	Lou_f	Lou_g	Lou_h	Lou_i	Lou_j	TOTAL
Abiotrophia	0	0	0	0	0	3	0	0	0	0	3
Actinobacillus	0	1	2	2	5	1	0	1	1	0	13
Actinomyces	2	2	4	0	0	0	0	1	1	7	17
Aggregatibacter	0	2	0	0	1	0	3	0	1	0	7
Atopobium	1	0	1	0	0	0	0	0	1	2	5
Bergeyella	0	2	0	0	0	0	0	0	0	0	2
Branhamella	0	2	0	0	0	0	0	0	0	0	2
Bulleidia	0	2	0	0	0	0	0	0	0	1	3
Campylobacter	1	0	0	0	0	0	0	0	1	2	4
Capnocytophaga	0	0	0	8	0	0	1	0	1	0	10
Catonella	0	0	0	1	0	0	0	0	0	0	1
Citrobacter	2	0	0	0	0	0	0	0	0	0	2
Derxia	0	0	0	13	0	0	0	0	0	1	14
Enterobacter	0	0	0	0	0	0	0	0	0	1	1
Enterococcus	1	0	0	0	0	1	1	0	0	0	3
Eubacterium	1	0	0	0	0	0	1	0	0	1	3
Fusobacterium	6	1	1	4	0	1	0	0	5	1	19
Gemella	1	7	0	0	0	2	1	2	11	0	24
Granulicatella	1	2	2	0	1	3	3	6	1	0	19
Haemophilus	2	10	23	0	16	14	11	24	4	1	105
Kingella	0	0	0	0	0	0	0	0	0	2	2
Lactobacillus	0	0	0	0	0	0	0	0	0	1	1
Lactococcus	0	0	0	0	0	0	0	0	0	1	1
Leptotrichia	6	0	2	2	0	2	2	0	0	6	20
Megasphaera	1	0	0	0	0	0	0	0	0	0	1
Micromonas	0	0	0	0	0	1	0	0	0	0	1
Mitsuokella	0	0	0	0	0	0	0	0	0	1	1
Mogibacterium	1	0	0	0	0	0	0	0	0	0	1

Genus	Lou_a	Lou_b	Lou_c	Lou_d	Lou_e	Lou_f	Lou_g	Lou_h	Lou_i	Lou_j	TOTAL
Neisseria	0	18	10	50	4	11	24	7	5	2	131
Oribacterium	0	0	1	2	1	0	0	0	0	0	4
Peptococcus	0	0	0	1	0	0	0	0	0	0	1
Porphyromonas	0	0	0	1	2	1	4	1	0	0	9
Prevotella	7	6	13	2	1	5	9	0	4	16	63
Propionibacterium	0	0	0	0	0	0	0	0	0	1	1
Pseudomonas	0	0	0	0	0	0	0	2	0	0	2
Rothia	6	5	11	4	18	0	1	23	2	11	81
Selenomonas	0	0	0	0	0	0	0	0	0	2	2
Streptococcus	50	51	18	25	69	42	28	31	86	37	437
Syntrophococcus	1	0	0	0	0	0	0	0	0	0	1
TM7	1	0	2	1	0	1	0	0	1	0	6
Veillonella	6	2	17	1	1	5	7	0	1	17	57
Unclassified	1	0	0	1	0	0	3	0	0	1	6
Unknown	4	2	0	3	0	4	7	7	2	0	29
TOTAL	102	115	107	121	119	97	106	105	128	115	1115

Table S5. Frequency (count) of each genus in each of the 10 saliva samples (Ger_a through Ger_j) from Dessau/Leipzig, Germany.

Genus	Ger_a	Ger_b	Ger_c	Ger_d	Ger_e	Ger_f	Ger_g	Ger_h	Ger_i	Ger_j	TOTAL
Actinobacillus	0	1	0	1	0	0	2	0	0	2	6
Actinomyces	0	1	0	1	7	3	2	1	2	6	23
Aggregatibacter	0	0	3	1	0	0	1	0	2	3	10
Atopobium	0	0	0	1	3	0	0	1	2	0	7
Bulleidia	1	0	0	0	1	0	0	0	0	0	2
Campylobacter	0	1	6	0	2	3	2	0	0	2	16
Capnocytophaga	3	2	0	0	1	0	0	0	0	1	7
Cardiobacterium	0	0	1	0	0	0	0	0	0	0	1
Catonella	1	1	0	1	0	0	0	0	0	1	4
Chryseobacterium	0	2	0	0	0	0	0	0	0	0	2
Corynebacterium	0	0	0	1	0	0	0	0	0	0	1
Derxia	3	0	0	2	0	0	0	0	0	0	5
Dialister	0	0	0	0	0	0	0	0	0	1	1
Enterococcus	0	0	0	0	2	0	0	0	1	0	3
Eubacterium	1	0	1	0	0	0	0	0	1	0	3
Fusobacterium	8	3	3	3	2	1	4	3	1	1	29
Gemella	1	1	0	0	0	0	0	0	0	1	3
Granulicatella	1	2	1	2	1	0	1	5	0	4	17
Haemophilus	7	15	8	11	10	0	17	0	15	3	86
Hallella	4	0	0	0	0	0	0	0	0	0	4
Lactobacillus	1	0	0	0	0	1	0	0	0	0	2
Leptotrichia	2	2	0	4	3	0	0	0	7	1	19
Megasphaera	0	0	0	0	0	1	0	0	1	0	2
Micrococcus	0	0	0	0	0	0	0	0	1	0	1
Micromonas	0	0	0	1	0	0	0	0	0	0	1
Mitsuokella	0	0	0	0	0	0	0	0	1	0	1
Mogibacterium	1	0	0	0	0	0	0	0	0	0	1
Mycoplasma	3	0	0	0	0	0	0	0	0	0	3
Neisseria	8	27	5	10	8	3	9	0	2	4	76

Genus	Ger_a	Ger_b	Ger_c	Ger_d	Ger_e	Ger_f	Ger_g	Ger_h	Ger_i	Ger_j	TOTAL
Nesterenkonia	0	0	0	0	1	0	0	0	0	0	1
Oribacterium	2	0	3	0	0	0	0	0	0	1	6
Paludibacter	0	0	0	0	0	0	0	0	0	1	1
Peptostreptococcus	1	0	0	1	0	0	0	0	0	0	2
Porphyromonas	16	0	2	0	5	0	12	0	1	3	39
Prevotella	7	4	42	13	32	49	4	11	13	14	189
Rothia	11	15	13	29	5	16	19	27	23	11	169
Selenomonas	1	0	0	0	1	1	2	0	0	2	7
Streptococcus	28	33	17	30	7	26	25	66	26	46	304
Syntrophococcus	0	0	0	1	0	0	0	1	1	0	3
TM7	1	0	0	1	1	1	1	0	1	4	10
Tannerella	0	0	0	0	0	0	2	0	0	0	2
Treponema	0	0	0	0	0	0	2	0	0	0	2
Veillonella	2	3	10	2	19	7	5	3	11	6	68
Unclassified	1	0	0	0	0	0	0	0	1	1	3
Unknown	1	0	1	0	3	2	3	0	2	1	13
TOTAL	116	113	116	116	114	114	113	118	115	120	1155

Table S6. Frequency (count) of each genus in each of the 10 saliva samples (Pol_a through Pol_j) from Warsaw, Poland.

Genus	Pol_a	Pol_b	Pol_c	Pol_d	Pol_e	Pol_f	Pol_g	Pol_h	Pol_i	Pol_j	TOTAL
Actinobacillus	0	0	0	0	0	1	0	0	1	0	2
Actinomyces	6	15	0	3	0	1	1	1	0	2	29
Aggregatibacter	0	0	0	0	0	1	0	5	0	0	6
Alysiella	0	0	0	0	0	1	0	0	0	0	1
Atopobium	4	2	1	1	0	0	0	0	1	2	11
Bifidobacterium	3	0	0	0	0	0	0	0	0	0	3
Bulleidia	1	0	0	0	0	1	1	0	0	1	4
Butyrivibrio	1	0	1	0	0	0	0	0	0	0	2
Campylobacter	2	4	0	0	0	2	1	2	3	0	14
Capnocytophaga	0	0	0	0	0	0	1	1	0	0	2
Cardiobacterium	0	0	0	0	0	0	0	2	0	0	2
Catenibacterium	0	0	0	0	0	0	0	1	0	0	1
Cloacibacterium	0	0	0	0	0	0	0	1	1	0	2
Collimonas	0	0	0	0	0	0	0	0	1	0	1
Coprococcus	0	0	0	1	0	0	0	0	0	0	1
Derxia	0	0	1	0	0	1	1	1	0	0	4
Dialister	0	0	0	0	0	0	1	0	0	0	1
Enterococcus	0	0	1	0	0	0	1	0	0	0	2
Eubacterium	0	1	0	0	0	0	2	0	0	0	3
Faecalibacterium	0	0	0	0	0	1	0	0	0	0	1
Fusobacterium	0	3	2	1	1	0	5	0	6	3	21
Gemella	0	0	0	0	1	0	2	1	1	0	5
Granulicatella	3	0	0	0	1	0	1	1	0	0	6
Haemophilus	2	3	5	1	3	2	12	15	13	2	58
Johnsonella	0	0	0	0	0	0	0	1	0	0	1
Kingella	0	0	1	0	0	0	0	0	0	0	1
Leptotrichia	2	4	2	1	0	3	1	3	3	2	21
Megasphaera	0	5	3	2	0	3	0	0	0	0	13
Mitsuokella	5	0	0	0	0	0	0	0	0	0	5

Genus	Pol_a	Pol_b	Pol_c	Pol_d	Pol_e	Pol_f	Pol_g	Pol_h	Pol_i	Pol_j	TOTAL
Neisseria	0	0	4	1	0	16	15	7	6	2	51
Oribacterium	1	2	1	1	0	0	4	0	1	1	11
Paludibacter	0	0	0	0	0	0	1	1	0	0	2
Porphyromonas	0	0	1	0	0	0	3	2	2	1	9
Prevotella	50	31	46	52	1	43	9	9	29	41	311
Rahnella	0	0	0	0	4	0	0	0	0	0	4
Rothia	4	4	9	2	1	5	4	2	2	1	34
Ruminococcus	0	1	0	3	0	0	0	0	1	0	5
Schwartzia	0	0	0	0	0	0	1	0	0	0	1
Selenomonas	3	0	3	5	0	5	0	0	0	2	18
Serratia	0	0	0	0	94	0	0	0	0	0	94
Shuttleworthia	0	0	0	0	0	0	1	0	0	0	1
Streptococcus	9	13	7	22	9	12	36	54	29	35	226
Syntrophococcus	1	0	1	0	0	0	0	0	0	0	2
TM7	2	0	0	1	0	1	1	0	0	0	5
Treponema	0	1	0	0	0	0	1	0	0	0	2
Veillonella	14	27	28	22	2	16	5	3	10	18	145
Unclassified	2	1	0	0	0	2	1	0	1	0	7
Unknown	0	1	1	0	1	0	4	4	3	2	16
TOTAL	115	118	118	119	118	117	116	117	114	115	1167

Table S7. Frequency (count) of each genus in each of the 10 saliva samples (Geo_a through Geo_j) from Batumi, Georgia.

Genus	Geo_a	Geo_b	Geo_c	Geo_d	Geo_e	Geo_f	Geo_g	Geo_h	Geo_i	Geo_j	TOTAL
Abiotrophia	0	0	1	1	0	0	0	0	0	0	2
Actinobacillus	0	0	1	0	1	1	0	0	2	3	8
Actinomyces	4	3	0	2	0	0	2	0	0	0	11
Aggregatibacter	0	0	1	2	0	1	0	0	1	1	6
Atopobium	1	0	1	0	2	0	2	0	0	0	6
Bulleidia	0	1	1	0	1	0	0	0	0	0	3
Buttiauxella	0	0	0	0	0	0	0	0	14	14	28
Campylobacter	3	1	0	0	0	0	0	0	1	1	6
Capnocytophaga	1	2	0	0	1	0	0	0	0	0	4
Cardiobacterium	0	1	0	0	0	0	0	0	0	0	1
Catonella	0	0	0	0	0	0	0	1	1	1	3
Citrobacter	0	0	0	0	0	0	2	0	0	0	2
Cloacibacterium	0	0	2	0	0	1	0	0	0	0	3
Collimonas	0	0	0	1	0	0	0	0	0	0	1
Corynebacterium	0	0	0	1	0	0	0	0	0	0	1
Derxia	0	0	0	0	1	0	0	0	0	0	1
Enterobacter	22	0	0	0	0	0	16	31	2	1	72
Enterococcus	0	0	0	1	0	0	0	0	0	0	1
Erwinia	0	0	0	0	0	0	0	0	1	0	1
Eubacterium	0	0	0	1	0	1	1	0	0	0	3
Faecalibacterium	0	0	0	0	0	0	0	0	1	1	2
Fusobacterium	2	2	1	0	0	5	1	2	6	6	25
Gemella	0	0	1	2	0	0	1	0	0	0	4
Granulicatella	3	1	2	7	2	1	2	1	3	3	25
Haemophilus	2	16	7	11	15	17	10	2	2	2	84
Johnsonella	0	0	0	0	0	1	0	0	0	0	1
Kingella	0	0	2	0	0	1	0	0	1	1	5
Klebsiella	0	0	0	0	0	0	0	2	0	0	2
Lactobacillus	0	0	1	0	0	0	0	0	0	0	1

Genus	Geo_a	Geo_b	Geo_c	Geo_d	Geo_e	Geo_f	Geo_g	Geo_h	Geo_i	Geo_j	TOTAL
Leptotrichia	6	0	3	0	0	1	3	3	4	4	24
Megasphaera	1	0	0	0	0	2	0	0	1	1	5
Micromonas	0	0	0	0	0	2	0	0	1	1	4
Moraxella	0	0	0	0	0	0	0	0	1	1	2
Neisseria	7	14	3	14	25	10	9	16	6	6	110
Oribacterium	1	1	1	0	1	0	0	2	0	0	6
Paludibacter	0	0	0	0	0	0	0	0	2	2	4
Pasteurella	0	0	1	0	0	0	0	0	0	0	1
Peptostreptococcus	0	0	0	0	0	1	0	0	2	2	5
Plesiomonas	1	0	0	0	0	0	0	0	0	0	1
Porphyromonas	4	3	4	5	9	3	1	0	6	6	41
Prevotella	21	49	31	13	32	44	30	12	27	27	286
Proteus	0	0	0	0	0	0	0	0	1	1	2
Raoultella	0	0	0	0	0	0	3	0	0	0	3
Rothia	2	1	1	6	8	1	5	1	2	2	29
Selenomonas	0	1	1	0	0	0	0	0	2	2	6
Serratia	9	0	0	0	0	0	0	24	0	0	33
Simonsiella	0	0	0	0	0	1	0	1	0	0	2
Sneathia	0	0	0	0	0	0	0	0	1	1	2
Streptobacillus	1	0	0	0	0	0	0	0	1	1	3
Streptococcus	20	8	16	48	7	9	16	16	17	14	171
Syntrophococcus	0	0	0	0	1	1	0	0	0	0	2
TM7	1	1	1	0	2	0	1	0	0	0	6
Tannerella	0	0	0	0	0	1	0	0	1	1	3
Treponema	0	0	0	2	0	0	0	3	2	2	9
Veillonella	11	9	18	8	12	6	10	6	2	2	84
Unclassified	0	1	2	1	2	0	2	0	2	0	10
Unknown	1	3	0	0	3	1	2	1	4	5	20
TOTAL	124	118	103	126	125	112	119	124	120	115	1186

Table S8. Frequency (count) of each genus in each of the 10 saliva samples (Tur_a through Tur_j) from Ankara, Turkey.

Genus	Tur_a	Tur_b	Tur_c	Tur_d	Tur_e	Tur_f	Tur_g	Tur_h	Tur_i	Tur_j	TOTAL
Actinobacillus	1	0	0	0	5	0	0	0	0	0	6
Actinomyces	0	2	3	3	3	0	0	1	3	0	15
Aggregatibacter	0	1	0	1	0	0	0	0	0	0	2
Arthrobacter	0	0	2	0	0	0	0	0	0	0	2
Atopobium	1	0	2	0	1	1	2	1	1	0	9
Bulleidia	0	1	0	0	1	1	0	3	0	5	11
Butyrivibrio	0	1	0	0	0	0	0	0	0	0	1
Campylobacter	3	1	0	1	1	1	1	2	0	1	11
Capnocytophaga	0	0	0	0	1	0	1	1	0	1	4
Catonella	0	1	0	0	0	0	1	0	0	1	3
Chryseobacterium	0	0	0	0	0	0	0	1	0	0	1
Corynebacterium	0	0	1	0	0	0	1	0	0	0	2
Derxia	0	0	0	0	0	0	2	1	0	0	3
Desulfobulbus	0	0	0	0	0	1	0	0	0	0	1
Dialister	0	0	1	0	0	3	0	0	0	0	4
Enterococcus	0	0	0	0	1	0	0	0	0	0	1
Eubacterium	0	0	0	0	0	0	1	0	0	2	3
Fusobacterium	6	1	0	5	1	2	15	7	19	5	61
Gemella	2	0	0	2	0	0	0	0	1	1	6
Granulicatella	1	2	0	2	2	4	0	0	1	2	14
Haemophilus	4	2	1	11	5	9	4	3	11	3	53
Hallella	0	0	0	0	1	0	0	0	0	0	1
Kingella	1	0	1	0	0	1	0	0	0	0	3
Lactobacillus	0	0	2	0	0	0	0	0	0	0	2
Leptotrichia	2	2	11	2	1	1	0	5	0	0	24
Megasphaera	0	3	1	0	1	0	0	0	1	0	6
Micromonas	0	0	0	0	0	0	3	0	0	0	3
Mycoplasma	0	0	2	0	0	0	0	0	0	0	2
Neisseria	6	6	1	2	0	3	8	28	3	0	57

Genus	Tur_a	Tur_b	Tur_c	Tur_d	Tur_e	Tur_f	Tur_g	Tur_h	Tur_i	Tur_j	TOTAL
Oribacterium	2	8	0	0	0	0	1	0	0	0	11
Peptostreptococcus	0	0	0	0	0	0	0	0	1	0	1
Porphyromonas	5	8	1	1	1	7	5	3	5	7	43
Prevotella	30	57	28	15	40	17	30	43	26	40	326
Rikenella	0	0	0	0	0	2	0	0	0	0	2
Rothia	6	3	4	6	9	6	4	3	3	1	45
Ruminococcus	1	0	0	0	1	0	0	0	4	1	7
Selenomonas	1	1	2	1	1	0	1	4	0	1	12
Sneathia	0	0	0	0	0	0	2	0	0	0	2
Streptococcus	26	8	36	53	18	27	6	4	18	19	215
Syntrophococcus	1	1	0	3	0	0	1	0	1	1	8
TM7	0	0	0	0	0	0	5	0	0	5	10
Tannerella	0	0	0	0	0	1	0	0	0	0	1
Thermovirga	0	0	0	0	0	0	0	0	0	2	2
Treponema	0	0	0	0	0	5	0	2	0	0	7
Veillonella	14	7	15	6	18	14	6	1	16	15	112
Unclassified	0	2	0	0	0	0	0	0	0	0	2
Unknown	1	2	0	0	2	6	8	5	3	1	28
TOTAL	114	120	114	114	114	112	108	118	117	114	1145

Table S9. Frequency (count) of each genus in each of the 10 saliva samples (Con_a through Con_j) from Pointe Noire, Congo.

Genus	Con_a	Con_b	Con_c	Con_d	Con_e	Con_f	Con_g	Con_h	Con_i	Con_j	TOTAL
Abiotrophia	0	1	0	0	0	0	0	0	0	0	1
Achromobacter	0	0	0	0	0	0	0	0	0	2	2
Acinetobacter	0	0	0	0	0	0	0	0	3	0	3
Actinomyces	0	0	1	0	1	1	0	3	2	3	11
Aggregatibacter	0	2	0	2	1	0	0	1	0	0	6
Arthrobacter	0	0	0	0	0	1	0	0	0	0	1
Bulleidia	0	1	0	0	0	0	0	0	3	0	4
Burkholderia	0	0	0	0	2	0	0	22	0	0	24
Buttiauxella	0	0	0	0	0	0	0	0	0	76	76
Campylobacter	0	0	0	0	0	0	0	0	1	0	1
Capnocytophaga	0	2	0	1	1	0	0	0	0	0	4
Cedecea	0	0	0	0	0	0	48	1	0	0	49
Chryseobacterium	0	0	1	0	0	0	0	0	0	0	1
Citrobacter	2	0	0	0	0	0	3	1	0	0	6
Derxia	0	0	0	1	0	2	1	0	0	0	4
Enterobacter	8	0	45	0	111	62	27	53	0	27	333
Eubacterium	0	0	0	0	0	0	1	0	0	0	1
Filifactor	0	0	0	1	0	0	1	0	0	0	2
Fusobacterium	0	4	0	4	1	0	2	0	5	0	16
Gemella	0	0	1	2	0	1	0	1	4	1	10
Granulicatella	0	2	7	1	0	1	0	5	4	1	21
Haemophilus	0	5	2	4	1	5	1	1	4	0	23
Hallella	0	0	0	2	0	0	0	0	0	0	2
Johnsonella	0	0	0	0	0	0	1	0	0	0	1
Klebsiella	9	0	9	0	1	24	1	5	0	2	51
Leptotrichia	0	1	1	0	0	0	1	0	0	0	3
Megasphaera	0	1	0	0	0	0	0	0	5	0	6
Micromonas	0	3	0	0	0	0	0	0	0	0	3
Moraxella	0	0	0	0	1	0	3	0	1	0	5

Genus	Con_a	Con_b	Con_c	Con_d	Con_e	Con_f	Con_g	Con_h	Con_i	Con_j	TOTAL
Morganella	0	0	0	0	0	0	0	0	21	0	21
Neisseria	0	5	9	6	1	4	1	0	6	2	34
Oribacterium	1	0	0	5	2	0	4	2	0	2	16
Plesiomonas	0	0	1	0	0	0	0	0	0	0	1
Porphyromonas	0	14	2	8	0	0	2	0	2	0	28
Prevotella	0	12	2	9	3	0	10	1	22	2	61
Rothia	0	2	2	5	0	2	2	0	15	4	32
Salmonella	0	0	0	0	0	1	0	0	0	0	1
Serratia	63	0	0	0	2	1	1	1	0	0	68
Streptococcus	2	65	38	42	2	11	6	14	14	5	199
Syntrophococcus	0	0	0	1	0	0	0	0	0	0	1
TM7	0	0	0	0	0	0	0	0	1	0	1
Veillonella	0	1	2	4	1	3	5	3	7	0	26
Unclassified	0	3	0	0	0	2	0	0	0	0	5
Unknown	0	4	1	3	1	1	0	1	3	0	14
TOTAL	85	128	124	101	132	122	121	115	123	127	1178

Table S10. Frequency (count) of each genus in each of the 10 saliva samples (Saf_a through Saf_j) from Johannesburg, South Africa.

Genus	Saf_a	Saf_b	Saf_c	Saf_d	Saf_e	Saf_f	Saf_g	Saf_h	Saf_i	Saf_j	TOTAL
Actinobacillus	1	4	1	0	2	3	1	2	4	0	18
Actinomyces	4	11	2	6	3	0	0	2	1	0	29
Aggregatibacter	1	1	0	0	1	0	0	0	0	0	3
Atopobium	0	0	0	1	0	0	0	0	0	0	1
Bulleidia	0	0	1	2	1	1	0	0	0	0	5
Buttiauxella	0	0	0	1	0	0	0	0	0	0	1
Campylobacter	0	4	0	1	0	3	0	0	0	0	8
Capnocytophaga	1	1	1	0	1	0	0	2	0	0	6
Catonella	0	0	0	0	0	1	0	0	0	0	1
Citrobacter	0	0	0	4	0	0	0	0	0	0	4
Cloacibacterium	0	0	0	0	0	3	0	0	0	0	3
Corynebacterium	0	2	0	0	0	2	0	0	0	0	4
Derxia	0	3	0	0	0	0	0	1	0	0	4
Enterobacter	0	0	0	12	0	0	0	0	0	0	12
Eubacterium	0	1	0	0	1	1	0	0	0	0	3
Fusobacterium	1	1	4	4	6	0	0	4	1	1	22
Gemella	2	1	0	0	1	1	1	0	3	0	9
Granulicatella	1	1	1	1	0	2	1	0	2	0	9
Haemophilus	2	3	3	1	4	5	13	17	9	0	57
Leptotrichia	1	4	6	0	0	2	0	0	0	0	13
Megasphaera	0	1	3	2	0	2	0	1	0	0	9
Mitsuokella	1	0	0	1	0	0	0	0	0	0	2
Neisseria	2	2	2	5	15	5	2	4	14	3	54
Nesterenkonia	0	0	1	0	0	0	0	0	0	0	1
Oribacterium	2	4	3	0	0	3	2	0	1	0	15
Pantoea	0	0	0	1	0	0	0	0	0	0	1
Porphyromonas	2	0	2	0	21	0	0	5	2	0	32
Prevotella	41	26	46	23	34	28	13	30	5	1	247
Pseudomonas	0	0	0	0	0	0	1	2	0	0	3

Genus	Saf_a	Saf_b	Saf_c	Saf_d	Saf_e	Saf_f	Saf_g	Saf_h	Saf_i	Saf_j	TOTAL
Rahnella	0	0	0	1	0	0	0	0	0	9	10
Rothia	6	4	3	6	1	9	1	0	10	0	40
Ruminococcus	0	0	0	1	0	0	0	0	0	0	1
Selenomonas	1	0	0	1	0	0	0	0	0	0	2
Serratia	0	0	0	6	0	0	0	0	0	116	122
Streptococcus	23	40	16	17	12	56	58	22	54	1	299
Syntrophococcus	0	0	0	1	1	0	0	1	0	0	3
TM7	2	0	3	2	1	0	0	1	0	0	9
Treponema	1	0	1	0	0	0	0	0	0	0	2
Vagococcus	0	0	0	0	1	0	0	0	0	0	1
Veillonella	24	22	9	17	15	23	25	12	10	2	159
Yersinia	0	0	0	1	0	0	0	0	0	0	1
Unclassified	0	1	0	0	0	0	2	0	0	0	3
Unknown	1	1	0	4	4	4	2	1	1	1	19
TOTAL	120	138	108	122	125	154	122	107	117	134	1247

Table S11. Frequency (count) of each genus in each of the 10 saliva samples (Chi_a through Chi_j) from Shanghai, China.

Genus	Chi_a	Chi_b	Chi_c	Chi_d	Chi_e	Chi_f	Chi_g	Chi_h	Chi_i	Chi_j	TOTAL
Abiotrophia	0	0	0	0	1	1	0	0	1	1	4
Actinobacillus	0	1	0	2	14	0	2	4	0	0	23
Actinomyces	0	1	1	2	1	1	1	1	0	0	8
Aggregatibacter	0	2	2	0	1	0	0	4	0	2	11
Alysiella	0	0	0	0	0	0	3	0	0	0	3
Anaerovorax	0	0	0	0	0	0	0	1	0	0	1
Branhamella	0	0	3	0	0	0	0	0	0	0	3
Bulleidia	2	0	2	0	1	0	0	0	1	0	6
Campylobacter	2	0	1	0	0	0	0	0	0	3	6
Capnocytophaga	2	2	0	1	0	1	2	2	1	4	15
Catonella	0	1	0	1	0	0	1	1	0	0	4
Chryseobacterium	1	0	0	0	0	0	0	0	0	0	1
Cloacibacterium	0	0	0	0	0	0	0	0	5	4	9
Corynebacterium	0	0	1	0	0	0	0	1	0	0	2
Derxia	0	8	0	0	0	1	1	2	0	5	17
Enterococcus	0	0	0	0	0	0	0	0	3	0	3
Eubacterium	0	2	1	0	1	2	0	0	0	0	6
Filifactor	2	4	0	0	0	0	0	1	0	0	7
Fusobacterium	6	9	3	3	3	0	1	2	1	4	32
Gemella	1	0	3	0	0	0	0	0	4	1	9
Granulicatella	0	5	5	0	0	2	3	2	2	2	21
Haemophilus	0	9	8	7	6	11	12	7	6	7	73
Johnsonella	0	0	0	1	0	0	0	0	0	0	1
Kingella	0	0	0	0	1	1	0	0	0	0	2
Leptotrichia	5	2	1	3	1	0	0	3	1	4	20
Micromonas	1	0	0	0	0	0	0	0	0	0	1
Mogibacterium	0	1	0	0	1	0	0	0	0	0	2
Moraxella	1	0	6	0	0	0	0	0	0	0	7
Mycoplasma	0	3	0	0	0	0	0	0	0	0	3

Genus	Chi_a	Chi_b	Chi_c	Chi_d	Chi_e	Chi_f	Chi_g	Chi_h	Chi_i	Chi_j	TOTAL
Neisseria	16	13	9	26	25	22	26	25	16	48	226
Oribacterium	0	1	0	3	1	0	1	0	0	0	6
Paludibacter	0	0	0	0	0	1	1	0	0	0	2
Peptococcus	0	0	0	0	1	0	0	0	0	0	1
Peptostreptococcus	3	0	0	0	1	0	0	0	0	0	4
Porphyromonas	6	4	8	0	9	2	5	7	2	6	49
Prevotella	42	7	23	31	16	0	0	22	5	5	151
Rothia	2	5	4	5	4	0	2	0	0	1	23
Ruminococcus	1	0	0	0	0	0	0	0	0	0	1
Scardovia	0	1	1	0	0	0	0	0	0	0	2
Selenomonas	2	1	0	0	0	0	0	1	0	0	4
Serratia	0	0	0	0	0	0	16	0	0	0	16
Sneathia	0	0	0	0	0	0	0	0	2	0	2
Streptococcus	5	27	27	12	21	68	32	20	61	18	291
TM7	1	0	0	0	0	0	0	0	0	0	1
Thermovirga	0	1	0	0	0	0	0	0	1	0	2
Treponema	0	4	1	2	0	0	0	3	0	1	11
Veillonella	3	1	3	14	4	0	1	1	2	0	29
Wolinella	0	1	0	0	0	0	0	0	0	0	1
Yersinia	0	0	0	0	0	0	1	0	0	0	1
Unclassified	1	1	0	1	1	0	0	0	0	0	4
Unknown	5	1	4	0	1	1	3	4	1	2	22
TOTAL	110	118	117	114	115	114	114	114	115	118	1149

Table S12. Frequency (count) of each genus in each of the 10 saliva samples (Phi_a through Phi_j) from Surigao, Philippines.

Genus	Phi_a	Phi_b	Phi_c	Phi_d	Phi_e	Phi_f	Phi_g	Phi_h	Phi_i	Phi_j	TOTAL
Acidaminococcus	0	1	0	0	0	0	0	0	0	0	1
Actinobacillus	1	0	0	0	0	2	0	0	0	0	3
Actinomyces	2	6	7	4	3	1	1	0	0	10	34
Aggregatibacter	1	0	0	5	0	0	0	0	0	0	6
Arthrobacter	1	0	0	0	0	0	0	0	0	0	1
Atopobium	0	1	0	0	0	1	0	0	0	0	2
Bergeriella	0	0	0	0	0	0	0	1	0	0	1
Bulleidia	2	0	0	0	0	0	0	0	1	0	3
Buttiauxella	0	0	0	0	0	0	0	0	2	0	2
Campylobacter	0	0	0	3	0	0	0	1	0	0	4
Capnocytophaga	0	0	0	1	1	0	0	3	0	0	5
Catonella	0	0	0	0	1	0	1	0	0	0	2
Citrobacter	0	0	48	0	0	0	0	0	0	0	48
Cloacibacterium	0	0	0	0	0	0	0	1	0	0	1
Clostridium	0	0	0	0	0	0	0	0	0	1	1
Corynebacterium	1	1	0	0	0	0	0	1	0	1	4
Derxia	0	0	0	0	0	0	1	1	0	0	2
Dialister	0	2	0	0	0	0	0	0	0	0	2
Enterobacter	0	0	51	0	0	0	0	4	56	0	111
Eubacterium	0	0	0	0	0	0	0	1	0	1	2
Filifactor	0	1	0	0	0	2	0	0	0	5	8
Fusobacterium	2	3	0	4	1	1	4	3	2	1	21
Gemella	0	0	0	1	0	1	2	0	0	1	5
Granulicatella	2	4	0	0	2	1	2	5	2	1	19
Haemophilus	9	1	0	6	0	13	2	9	1	9	50
Kineosphaera	0	0	0	0	0	0	1	0	0	0	1
Klebsiella	0	0	3	0	0	0	0	0	5	0	8
Lactobacillus	0	2	0	0	0	0	0	0	0	1	3
Leptotrichia	3	5	1	1	0	2	2	2	0	1	17

Genus	Phi_a	Phi_b	Phi_c	Phi_d	Phi_e	Phi_f	Phi_g	Phi_h	Phi_i	Phi_j	TOTAL
Megasphaera	0	0	0	0	9	1	0	0	0	3	13
Micromonas	0	0	0	0	0	0	0	0	0	1	1
Mitsuokella	0	0	0	0	0	0	0	1	0	0	1
Mogibacterium	0	1	0	0	0	0	0	0	0	0	1
Mycoplasma	0	0	0	0	0	0	1	0	0	0	1
Neisseria	36	3	0	3	1	8	4	9	5	20	89
Oribacterium	0	0	0	1	0	0	0	0	1	1	3
Porphyromonas	7	1	0	9	0	3	3	0	4	2	29
Prevotella	9	37	4	25	23	45	28	9	8	12	200
Rothia	0	2	0	5	3	0	4	16	2	15	47
Ruminococcus	0	2	0	0	0	0	0	0	0	0	2
Scardovia	0	1	0	0	0	0	0	0	0	0	1
Selenomonas	0	2	2	0	0	2	1	2	0	0	9
Streptococcus	34	22	4	41	20	16	43	30	20	21	251
Syntrophococcus	2	2	0	0	0	0	0	0	0	0	4
TM7	0	0	0	1	0	3	2	1	1	0	8
Treponema	0	1	0	5	0	0	3	1	0	0	10
Veillonella	1	17	0	6	45	14	14	16	6	13	132
Unclassified	0	0	0	0	6	0	0	0	0	0	6
Unknown	2	2	0	0	1	2	0	0	0	0	7
TOTAL	115	120	120	121	116	118	119	117	116	120	1182

Table S13. Frequency (%) of each bacterial genus in each location. The number assigned to each genus corresponds to the numbers in Figure 2. Genus names in **boldface** vary significantly in frequency across locations (chi-square tests, $p < 0.05$ with a Bonferroni correction for multiple tests). *, genus not previously reported in the human oral cavity (Human Oral Microbiome Database, <http://homd.org>).

Genus	Number	Arg	Bol	Cal	Lou	Ger	Pol	Geo	Tur	Con	Saf	Chi	Phi	TOTAL
Abiotrophia	1	0.00	0.00	0.59	0.27	0.00	0.00	0.17	0.00	0.08	0.00	0.35	0.00	0.12
Achromobacter	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.01
Acidaminococcus	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
Acinetobacter	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.02
Actinobacillus	5	0.76	0.49	0.17	1.17	0.52	0.17	0.67	0.52	0.00	1.44	2.00	0.25	0.68
Actinomyces	6	1.77	0.25	0.93	1.52	1.99	2.49	0.93	1.31	0.93	2.33	0.70	2.88	1.50
Aggregatibacter	7	0.42	0.33	0.42	0.63	0.87	0.51	0.51	0.17	0.51	0.24	0.96	0.51	0.50
Alysiella*	8	0.08	0.08	0.08	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.26	0.00	0.05
Anaerovorax*	9	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.01
Arthrobacter*	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.08	0.00	0.00	0.08	0.03
Atopobium	11	0.25	0.16	0.59	0.45	0.61	0.94	0.51	0.79	0.00	0.08	0.00	0.17	0.38
Bergeriella*	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
Bergeyella	13	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Bifidobacterium	14	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Branhamella*	15	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.04
Bulleidia	16	0.08	0.33	0.51	0.27	0.17	0.34	0.25	0.96	0.34	0.40	0.52	0.25	0.37
Burkholderia	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	0.00	0.00	0.17
Buttiauxella*	18	0.00	0.41	0.00	0.00	0.00	0.00	2.36	0.00	6.45	0.08	0.00	0.17	0.79
Butyrivibrio	19	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.09	0.00	0.00	0.00	0.00	0.02
Campylobacter	20	0.67	0.49	0.42	0.36	1.39	1.20	0.51	0.96	0.08	0.64	0.52	0.34	0.63

Genus	Number	Arg	Bol	Cal	Lou	Ger	Pol	Geo	Tur	Con	Saf	Chi	Phi	TOTAL
Capnocytophaga	21	0.42	0.08	0.34	0.90	0.61	0.17	0.34	0.35	0.34	0.48	1.31	0.42	0.47
Cardiobacterium	22	0.00	0.00	0.00	0.00	0.09	0.17	0.08	0.00	0.00	0.00	0.00	0.00	0.03
Catenibacterium*	23	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Catonella	24	0.08	0.33	0.08	0.09	0.35	0.00	0.25	0.26	0.00	0.08	0.35	0.17	0.17
Cedecea*	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.16	0.00	0.00	0.00	0.35
Chryseobacterium*	26	0.08	0.08	0.08	0.00	0.17	0.00	0.00	0.09	0.08	0.00	0.09	0.00	0.06
Citrobacter*	27	0.00	0.16	0.00	0.18	0.00	0.00	0.17	0.00	0.51	0.32	0.00	4.06	0.45
Cloacibacterium*	28	0.00	0.25	0.08	0.00	0.00	0.17	0.25	0.00	0.00	0.24	0.78	0.08	0.16
Clostridium	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
Collimonas*	30	0.00	0.00	0.00	0.00	0.00	0.09	0.08	0.00	0.00	0.00	0.00	0.00	0.01
Coprococcus*	31	0.17	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Corynebacterium	32	0.25	0.00	0.25	0.00	0.09	0.00	0.08	0.17	0.00	0.32	0.17	0.34	0.14
Derxia*	33	0.59	0.00	0.17	1.26	0.43	0.34	0.08	0.26	0.34	0.32	1.48	0.17	0.45
Desulfobulbus	34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.01
Dialister	35	0.17	0.00	0.00	0.00	0.09	0.09	0.00	0.35	0.00	0.00	0.00	0.17	0.07
Enterobacter	36	0.42	8.52	0.00	0.09	0.00	0.00	6.07	0.00	28.27	0.96	0.00	9.39	4.52
Enterococcus	37	0.34	0.16	0.34	0.27	0.26	0.17	0.08	0.09	0.00	0.00	0.26	0.00	0.16
Erwinia*	38	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.01
Eubacterium	39	0.84	0.16	0.08	0.27	0.26	0.26	0.25	0.26	0.08	0.24	0.52	0.17	0.28
Faecalibacterium*	40	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.00	0.00	0.00	0.00	0.00	0.02
Filifactor	41	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.61	0.68	0.13
Fusobacterium	42	2.19	1.56	1.02	1.70	2.51	1.80	2.11	5.33	1.36	1.76	2.79	1.78	2.15
Gemella	43	0.51	1.31	1.35	2.15	0.26	0.43	0.34	0.52	0.85	0.72	0.78	0.42	0.80
Granulicatella	44	1.26	0.74	1.61	1.70	1.47	0.51	2.11	1.22	1.78	0.72	1.83	1.61	1.37
Haemophilus	45	7.74	4.91	6.85	9.42	7.45	4.97	7.08	4.63	1.95	4.57	6.35	4.23	5.82
Hallella*	46	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.09	0.17	0.00	0.00	0.00	0.05
Johnsonella	47	0.00	0.00	0.00	0.00	0.00	0.09	0.08	0.00	0.08	0.00	0.09	0.00	0.03
Kineospaera*	48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01

Genus	Number	Arg	Bol	Cal	Lou	Ger	Pol	Geo	Tur	Con	Saf	Chi	Phi	TOTAL
Kingella	49	0.17	0.00	0.08	0.18	0.00	0.09	0.42	0.26	0.00	0.00	0.17	0.00	0.11
Klebsiella	50	0.00	1.15	0.00	0.00	0.00	0.00	0.17	0.00	4.33	0.00	0.00	0.68	0.53
Lactobacillus	51	0.00	0.00	0.00	0.09	0.17	0.00	0.08	0.17	0.00	0.00	0.00	0.25	0.06
Lactococcus	52	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Leptotrichia	53	2.27	1.47	0.51	1.79	1.65	1.80	2.02	2.10	0.25	1.04	1.74	1.44	1.50
Mannheimia*	54	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Megasphaera	55	1.09	0.25	0.51	0.09	0.17	1.11	0.42	0.52	0.51	0.72	0.00	1.10	0.55
Micrococcus*	56	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Micromonas*	57	0.25	0.00	0.17	0.09	0.09	0.00	0.34	0.26	0.25	0.00	0.09	0.08	0.13
Mitsuokella	58	0.00	0.08	0.00	0.09	0.09	0.43	0.00	0.00	0.00	0.16	0.00	0.08	0.08
Mogibacterium	59	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.17	0.08	0.04
Moraxella	60	1.09	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.42	0.00	0.61	0.00	0.19
Morganella*	61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78	0.00	0.00	0.00	0.15
Mycoplasma	62	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.17	0.00	0.00	0.26	0.08	0.06
Neisseria	63	12.46	5.16	6.18	11.75	6.58	4.37	9.27	4.98	2.89	4.33	19.67	7.53	7.88
Nesterenkonia*	64	0.00	0.00	0.08	0.00	0.09	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.02
Oribacterium	65	1.09	0.66	1.02	0.36	0.52	0.94	0.51	0.96	1.36	1.20	0.52	0.25	0.79
Paludibacter*	66	0.00	0.00	0.00	0.00	0.09	0.17	0.34	0.00	0.00	0.00	0.17	0.00	0.06
Pantoea*	67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.01
Parascardovia	68	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Pasteurella*	69	0.00	0.08	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.01
Peptococcus	70	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.01
Peptostreptococcus	71	0.08	0.00	0.34	0.00	0.17	0.00	0.42	0.09	0.00	0.00	0.35	0.00	0.12
Plesiomonas*	72	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.00	0.00	0.00	0.01
Porphyromonas	73	2.10	0.98	1.27	0.81	3.38	0.77	3.46	3.76	2.38	2.57	4.26	2.45	2.35
Prevotella	74	20.71	14.50	13.79	5.65	16.36	26.65	24.11	28.47	5.18	19.81	13.14	16.92	17.14
Propionibacterium	75	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Proteus	76	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.01

Genus	Number	Arg	Bol	Cal	Lou	Ger	Pol	Geo	Tur	Con	Saf	Chi	Phi	TOTAL
Pseudomonas	77	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.04
Rahnella*	78	0.00	1.56	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.80	0.00	0.00	0.23
Raoultella*	79	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.02
Rikenella*	80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.01
Rothia	81	5.98	1.88	7.28	7.26	14.63	2.91	2.45	3.93	2.72	3.21	2.00	3.98	4.82
Ruminococcus*	82	0.25	0.16	0.08	0.00	0.00	0.43	0.00	0.61	0.00	0.08	0.09	0.17	0.16
Salmonella*	83	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.01
Scardovia	84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.08	0.02
Schwartzia*	85	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Selenomonas	86	1.01	0.49	0.42	0.18	0.61	1.54	0.51	1.05	0.00	0.16	0.35	0.76	0.59
Serratia*	87	0.00	17.44	9.98	0.00	0.00	8.05	2.78	0.00	5.77	9.78	1.39	0.00	4.70
Shuttleworthia	88	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Simonsiella	89	0.08	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.02
Sneathia	90	0.17	0.00	0.00	0.00	0.00	0.00	0.17	0.17	0.00	0.00	0.17	0.00	0.06
Streptobacillus*	91	0.25	0.08	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.05
Streptococcus	92	15.91	23.34	28.00	39.19	26.32	19.37	14.42	18.78	16.89	23.98	25.33	21.24	22.66
Syntrophococcus*	93	0.08	0.16	0.25	0.09	0.26	0.17	0.17	0.70	0.08	0.24	0.00	0.34	0.21
Tannerella	94	0.00	0.00	0.00	0.00	0.17	0.00	0.25	0.09	0.00	0.00	0.00	0.00	0.04
Thermovirga*	95	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.17	0.00	0.04
TM7	96	0.42	0.08	0.85	0.54	0.87	0.43	0.51	0.87	0.08	0.72	0.09	0.68	0.51
Treponema	97	0.25	0.16	0.00	0.00	0.17	0.17	0.76	0.61	0.00	0.16	0.96	0.85	0.34
Vagococcus*	98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.01
Veillonella	99	13.55	8.27	12.10	5.11	5.89	12.43	7.08	9.78	2.21	12.75	2.52	11.17	8.62
Wolinella*	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.01
Yersinia	101	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.09	0.00	0.02
Unclassified	102	0.51	0.08	0.34	0.54	0.26	0.60	0.84	0.17	0.42	0.24	0.35	0.51	0.40
Unknown	103	0.76	0.90	0.68	2.60	1.13	1.37	1.69	2.45	1.19	1.52	1.91	0.59	1.39

Table S14. UniFrac (above diagonal) and linearized F_{st} (below diagonal) distances between each pair of locations. Location abbreviations are as in Table 1.

	Arg	Bol	Cal	Lou	Ger	Pol	Geo	Tur	Con	Saf	Chi	Phi
Arg		0.210	0.161	0.239	0.157	0.144	0.152	0.168	0.332	0.127	0.191	0.136
Bol	0.032		0.146	0.256	0.207	0.199	0.185	0.247	0.204	0.149	0.207	0.143
Cal	0.019	0.011		0.185	0.145	0.167	0.196	0.219	0.288	0.116	0.209	0.120
Lou	0.050	0.049	0.023		0.217	0.284	0.286	0.307	0.315	0.245	0.234	0.234
Ger	0.017	0.033	0.012	0.023		0.184	0.209	0.185	0.346	0.157	0.190	0.159
Pol	0.011	0.020	0.016	0.063	0.024		0.163	0.134	0.337	0.114	0.252	0.150
Geo	0.007	0.024	0.025	0.062	0.023	0.009		0.178	0.283	0.154	0.196	0.153
Tur	0.009	0.036	0.026	0.064	0.020	0.005	0.007		0.372	0.166	0.248	0.191
Con	0.076	0.044	0.069	0.090	0.073	0.081	0.056	0.086		0.292	0.298	0.267
Saf	0.014	0.010	0.004	0.042	0.017	0.004	0.015	0.013	0.068		0.206	0.102
Chi	0.020	0.034	0.023	0.023	0.021	0.036	0.024	0.033	0.075	0.027		0.188
Phi	0.010	0.020	0.016	0.039	0.016	0.016	0.009	0.015	0.042	0.012	0.022	

Table S15. Values of the four variables tested for associations with the UniFrac distances.

Location	Pop. size (millions)	Dist. from eq. (km)	Avg. temp. (C)	Avg. rainfall (cm)
Arg	13	3837	15.8	115
Bol	1	1832	7.5	60
Cal	7	4194	15.3	58
Lou	0.8	3389	19.8	155
Ger	0.5	5698	8.8	61
Pol	3	5791	7.7	52
Geo	0.1	4623	14.5	272
Tur	4	4435	11.7	42
Con	0.7	533	24.7	151
Saf	8	2908	16.4	72
Chi	17	3463	15.8	111
Phi	0.1	1088	27.2	320