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CURRENT POSITION:

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EDUCATION:

- Ph. D. in Biochemistry and Biophysics: University of California, San Francisco 1993
- B.S. in Honors Biology: University of Illinois, Champaign-Urbana 1986
- B.S. in Biochemistry: University of Illinois, Champaign-Urbana

PREVIOUS RESEARCH POSITIONS:

- Research Associate: Phylogenetic Analysis of the Human Microbiome. 2000-2010
University of Colorado, Boulder. P.I. Prof. N. Pace
- Postdoctoral Fellow: Biochemical and Genetic Analysis of the RNase P Ribozyme, 1993-1999
Indiana University and University of California, Berkeley. P.I.: Prof. N. Pace.
- Graduate Student: Molecular Genetics of Yeast pre-mRNA Splicing 1987-1993
Dept. of Biology and Biophysics, UCSF. Advisor: Prof. C. Guthrie.
- Undergraduate Student: Analysis of Archaeal RNA genes 1985-1986
University of Illinois. Advisor: Prof. C. Woese.

PUBLICATIONS:

Journal Articles and Reviews:

- **Frank, D.N.**, Roberstson, C.E., Hamm, C., Kpadeh, Z., Zhang, T., Chen, H., Zhu, W., Sartor, R.B., Harpaz, N., Pace, N.R. and Li, E. 2010. Disease Phenotype and Genotype are Associated with Shifts in intestinal-associate Microbiota in Inflammatory Bowel Diseases. *Inflammatory Bowel Disease*. *In Press*.
- Janoff, E.N and **Frank, D.N.** 2010. Pathogen-specific Antibodies – Co-Dependent No Longer. *J. Clin Invest.* 120(4):1039-1042.
- **Frank, D.N.** 2009. BARCRAWL and BARTAB: Software for design and implementation of barcoded primers for highly multiplexed DNA sequencing. *BMC Bioinformatics*. 10:362. PMID: PMC2777893
- **Frank, D.N.**, Wilson, S.S., St. Amand, A.L., and Pace, N.R. 2009. Culture-independent Analysis of Foley Urinary Catheter Biofilms. *PLoS One*. 4(11):e7811. PMID: PMC2771765
- Feazel, L.M., Baumgartner, L.K, Peterson K.L., **Frank, D.N.**, Harris, J.K., and Pace. N.R. 2009. Opportunistic Pathogens Enriched in Showerhead Biofilms. *Proc Natl Acad Sci.*, 106(38):16393-16399. PMID: PMC2752528

- **Frank, D.N.**, Wysocki, A., Specht-Glick, D.D., Rooney, A., Feldman, R.A., St. Amand, A., Pace, N.R., and Trent, J. 2009. Microbial Diversity in Chronic Open Wounds. *Wound Repair and Regeneration*. 17:163-172. PMID: 19320883
- **Frank, D.N.** 2008. XplorSeq: A Software Environment for Integrated Management and Phylogenetic Analysis of Metagenomic Sequence Data. *BMC Bioinformatics*. 9:420. PMID: PMC2577119
- Feazel, L.M., Spear, J.R., Berger, A.B., Harris, J.K., **Frank, D.N.**, Ley, R.E., and Pace, N.R. 2008. Eucaryotes in the Guerrero Negro Hypersaline Microbial Mat. *Appl. Environ. Microbiol.* 74(1): 329-332.
- Peterson, D.A., **Frank, D.N.**, Pace, N.R., and Gordon, J.I. 2008. Metagenomic Approaches for Defining the Pathogenesis of Inflammatory Bowel Disease. *Cell Host Microbe*. 3(6):417-427.
- **Frank, D.N.** and Pace, N.R. 2008. Molecular-Phylogenetic Analyses of Human Gastrointestinal Microbiota. *Current Opin. Gastroenter.* 24(1):4-10.
- **Frank, D.N.**, St. Amand, A.L., Feldman, R.A., M., Boedeker, E., Harpaz, N., and Pace, N.R. 2007. Microbial Community Imbalances in Human Inflammatory Bowel Diseases. *Proc. Natl. Acad. Sci.* 104(34):13780-13785. PMID: PMC1959459
- Dalby, A.B., **Frank, D.N.**, St. Amand, A., Bendele, A.M. and Pace, N.R. 2006. Culture-independent Analysis of Indomethacin-Induced Alterations in Rat Gastrointestinal Microbiota. *Appl. Environ. Microbiol.* 72(10):6707-6715. PMID: PMC1610281
- Furrie, E., Senok, A.C., **Frank, D.N.**, and Sullivan, K.E. 2006. Pondering Probiotics. *Clin. Immunol.* 121(1):19-22.
- **Frank, D.N.** and Pace, N.R. 2005. Another Ribosomal RNA Sequence Milestone – And a Call for Better Annotation. *ASM News*. 71(11):501-502.
- St. Amand, A., **Frank, D.N.**, DeGroot, M.A., Basaraba, R., and Pace, N.R. 2005. Evaluation of Nucleic-acids Based Microscopic Methods for the Detection of the *Mycobacterium tuberculosis* Complex in Clinical Tissues. *J. Clin. Microbiol.* 43: 5369-5371.
- DeGroot, M.A., **Frank, D.N.**, Dowell, E., Glode, M.P., and Pace, N.R. 2005. *Lactobacillus rhamnosus* GG Bacteremia Associated with Probiotic Use in a Child With Short Gut Syndrome. *Ped. Infect. Dis. Journal*. 24(3): 278-80. PMID: 15750472
- St. Amand, A., **Frank, D.N.**, DeGroot, M.A., and Pace, N.R. 2005. Evaluation of Nucleic-acids Based Microscopic Methods for the Detection of the *Mycobacterium avium* Complex in Clinical Tissues. *J. Clin. Microbiol.* 43(4): 1505-1514. PMID: PMC1081365
- Shukla, S.K., Paustian, D.L., Stockwell, P.J., Morey, R.E., Jordan, J.G., Levett, P.N., **Frank, D.N.**, and Reed, K.D. 2004. Isolation of a Fastidious *Bergeyella* Species Associated with Cellulitis after a Cat Bite and a Phylogenetic Comparison with *Bergeyella zoohelcum* Strains. *J. Clin. Microbiol.* 42(1): 290-293.
- Shukla, S.K., Bernard, K.A., Harney, M., **Frank, D.N.**, and Reed, K.D. 2003. *Corynebacterium nigricans* sp. nov.: Proposed Name for a Black-Pigmented *Corynebacterium* Species Recovered from the Human Female Urogenital Tract. *J. Clin. Microbiol.* 41(9): 4353-4358.
- **Frank, D.N.**, Spiegelman, G.B., Davis, W., Wagner, E., Lyons, E., and Pace, N.R. 2003. Culture-Independent Molecular Analysis of Microbial Constituents of the Healthy Human Outer Ear. *J. Clin. Microbiol.* 41(1): 295-303. PMID: PMC149572
- Shukla, S.K., Meier, P.R., Mitchell, P.D., **Frank, D.N.**, and Reed, K.D. 2002. *Leptotrichia amnionii* sp. nov., a novel bacterium isolated from amniotic fluid of a woman after interuterine fetal demise. *J. Clin. Microbiol.* 40: 3346-3349. PMID: PMC130742
- Li, X., **Frank, D.N.**, Fretz, S., Pace, N.R., Zengel, J.M., and Lindahl, L. 2002. Phylogenetic analysis of the structure of RNase MRP RNA in yeasts. *RNA*. 8(6): 740-751. PMID: PMC1370293
- Shukla, S.K., Vevea, D.N., **Frank, D.N.**, Pace, N.R. and Reed, K.D. 2001. Isolation and Characterization of a Black Pigmented *Corynebacterium* sp. from a Woman with Spontaneous Abortion. *J. Clin. Micro.* 39: 1109-1113.
- **Frank, D.N.** and Pace, N.R. 2001. Molecular-Phylogenetic Analyses of Human Gastrointestinal Microbiota. *Current Opin. Gastroenter.* 17: 52-57.
- Harris, J.K., Haas, E.S., Williams, D., **Frank, D.N.**, and Brown, J.W. 2001. New Insight into RNase P RNA Structure from Comparative Analysis of the Archaeal RNA. *RNA*. 7: 220-232. PMID: PMC1370080

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- **Frank, D.N.**, Adamidi, C., Ehringer, M.E., Pitulle, C. and Pace, N.R. 2000. Phylogenetic-Comparative Analysis of the Eucaryal Ribonuclease P RNA. *RNA*. 6: 1895-1904. PMID: PMC1370057
- **Frank, D.N.** and Pace, N.R. 1998. RIBONUCLEASE P: Unity and Diversity in a tRNA Processing Ribozyme. *Annual Review of Biochemistry*. 67: 153-180.
- Oh, B-K., **Frank, D.N.**, and Pace, N.R. 1998. Participation of the 3'-CCA of tRNA in the Active Site of Ribonuclease P. *Biochemistry*. 37: 7277-7283.
- **Frank, D.N.** and Pace, N.R. 1997. *In Vitro* Selection for Altered Divalent Metal Specificity in the RNase P RNA. *Proc. Natl. Acad. Sci., USA*. 94: 14355-14360.
- **Frank, D.N.**, Ellington, A.E. and Pace, N.R. 1996. *In Vitro* Selection of RNase P RNA Reveals Optimized Catalytic Activity in a Highly Conserved Structural Domain. *RNA*. 2:1179-1188.
- Jones, M.H., **Frank, D.N.** and Guthrie, C. 1995. Characterization and Functional Ordering of Slu7p and Prp17p During the Second Step of pre-mRNA Splicing in Yeast. *Proc. Natl. Acad. Sci., USA*. 92: 9687-9691.
- **Frank, D.N.**, Harris, M.E. and Pace, N.R. 1994. Rational Design of Self-Cleaving pre-tRNA - Ribonuclease P RNA Conjugates. *Biochemistry*. 33: 10800-10808.
- **Frank, D.N.**, Roiha, H. and Guthrie, C. 1994. Architecture of the U5 snRNA. *Mol. Cell. Biol.* 14: 2180-2190. PMID: PMC358578
- **Frank, D.** and Guthrie, C. 1992. An Essential Splicing Factor, *SLU7*, Mediates 3' Splice-Site Choice in Yeast. *Genes and Development* . 6: 2112-2124.
- **Frank, D.**, Patterson, B. and Guthrie, C. 1992. Synthetic Lethal Mutations Suggest Interactions between U5 snRNA and Four Proteins Required for the Second Step of Splicing. *Mol. Cell. Biol.* 12: 5197-5205.
- Bone, R., **Frank, D.**, Kettner, C.A. and Agard, D.A. 1989. Structural analysis of specificity: alpha-lytic protease complexes with analogues of reaction intermediates. *Biochemistry*. 28:7600-9.
- Silen, J.L., **Frank, D.**, Fujishige, A., Bone, R. and Agard, D.A. 1989. Analysis of prepro-alpha-lytic protease expression in Escherichia coli reveals that the pro region is required for activity. *Journal of Bacteriology*. 171:1320-5.

Book Chapters:

- **Frank, D.N.** and Robertson, C.E. 2010. The Phyloware Project: A software framework for phylogenomic virtue. In *Handbook of Molecular Microbial Ecology I: Metagenomics and Complementary Approaches*. Ed. F.J. de Bruijns. *Submitted*.
- **Frank, D.N.** and Feldman, R.A. 2007. Molecular-Phylogenetic Strategies for Characterization of Uncultured Pathogens. In *Encyclopedia of Infectious Diseases: Modern Methodologies*. ed. M. Tibayrenc.
- Harris, M.E., **Frank, D.N.** and Pace, N.R. 1998. Structure and Catalytic Function of Bacterial Ribonuclease P RNA. In *RNA Structure and Function..* eds. R.W. Simons and M. Grunberg-Manago.
- Baskerville, S., **Frank, D.N.** and Ellington, A.E. 1998. Artificial Evolutionary Descriptions of RNA Structure. In *RNA Structure and Function..* eds. R.W. Simons and M. Grunberg-Manago.

Professional Correspondence:

- **Frank, D.N.** 2008. Don't release other people's data without their consent. *Nature*. 455:589.
- **Frank, D.N.** 2008. Comment on: Meta-analysis of Mycobacterium avium subsp. Paratuberculosis and Crohn's disease. *Lancet Infectious Diseases*. 8(6):345.