

Sten Ternström and Maria Södersten: Recent and ongoing voice research in Stockholm, 2006-2007

The department of Logopedics and Phoniatics at the Karolinska Institute, site Hudding is the site in Sweden that has the highest activity in clinical voice research. Ongoing work includes development of new technical methods for assessment of voice pathology, vocal fold tissue repair with bioimplants and stem cells, voice loading in the workplace and dosimetry, treatment evaluation studies, voice transformation of sex-changed patients, and follow-ups of botox administered for spasmodic dysphonia. The clinical load is high, so these projects are all fairly small in terms of funding, and can be pursued only at intervals. The department also hosts a master programme in speech and language pathology, from which many student final-year projects have a lasting research value. The senior academic staff includes Britta Hammarberg, Maria Södersten, Per-Åke Lindestad, Stellan Hertegård and Eva B Holmberg. PhD projects are laryngectomy speech research by Elisabet Lundström, neurogenic speech and voice disorders by Ellika Schalling, and methods for measuring vibratory patterns and viscoelasticity of the vocal folds by Hans Larsson.

The Huddinge unit cooperates closely with the Music Acoustics group at Kungliga Tekniska Högskolan, Dept of Speech, Music & Hearing, where most of the voice research is related to singing. The main topics are currently phonetographic assessment of professional female singers, differences between singer styles, inverse filtering of male modal and falsetto voice, the acoustics of loud voice production over noise, and articulatory modelling of the vocal tract. Unfunded or more sporadic topics include reduction of buzz in syntheses, acoustics of whispered voice, whistle register in sopranos, subglottal pressure belting, syntheses of various modes of singing, foreign language pronunciation in singing, collision threshold pressure, and best practices for recording voice for research. The senior staff who do work in voice are Sten Ternström, Johan Sundberg (emeritus), Svante Granqvist, and Olle Engwall of the Speech Communication group. Students in voice research are Anick Lamarche, Glaucia Salamao and several short-term visitors. Jan Švec has a grant for occasional visits. Thanks to a bi-lateral exchange grant from STINT, the group also has close contact with David Howard's group at the University of York (not just for voice). Eva Björkner recently completed her PhD, most of which was carried out in Helsinki, Finland, in professor Alku's laboratory.