

**ICPP
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A fungal invasion is enhanced by hybridization and gene introgression: ecological and evolutionary implications of genomic admixing

Monday, July 30, 2018**10:30 - 10:50**📍 *Hynes Convention Center - Room 207*

The North American forest pathogen *Heterobasidion irregulare* was introduced in an area of Italy marginally occupied by the congeneric *H. annosum*. The observed dominance of the invasive species is linked to its higher saprobic and sporulation potentials. *H. irregulare* x *H. annosum* hybrids are common in the area of sympatry.

Three new studies on interspecific interactions demonstrates: 1-Comingling of the two species on wood results in increased sporulation by *H. irregulare*; 2-Hybrids carrying the *irregulare* mitochondrion are more fit than those carrying the *annosum* mitochondrion; 3-Genic introgression between the two species is quantitatively and qualitatively different. Introgression into *H. irregulare* is massive, but genomic analyses shows that introgressed genes are putatively associated with regulatory functions. Conversely, introgression from *H. irregulare* into *H. annosum* is less preponderant, and introgressed genes are putatively involved in various functions associated with saprobic processes and secretory Golgi-related pathways. We predict that should the invasive species spread to areas in Europe where significant populations of *H. annosum* are present, its rate of establishment and local spread may be more relevant than that currently observed in central Italy. Thus, species interactions facilitate the invasion, and hybridization may result in more fit genotypes bearing mitochondria and most of genes of *H. irregulare*, and regulatory genes of *H. annosum*.

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