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Abstract for an Invited Paper  
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**Arguments For and Against Intermediate-Mass Black Holes**

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Black hole masses have been measured in the range of a few solar masses to a few tens of solar masses, and from roughly a hundred thousand solar masses to twenty billion solar masses. But do they exist in the gap in between? I will discuss the cases for and against intermediate-mass black holes, with special attention to ultraluminous X-ray sources. I will also explore their possible role in the formation of supermassive black holes, and the expected contributions of both ongoing theoretical work and future gravitational-wave observations.