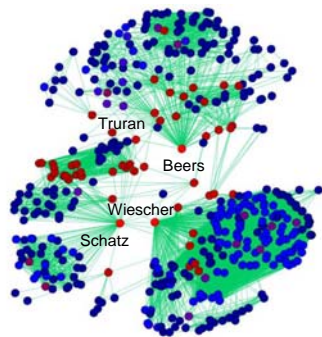


The emerging JINA network in Nuclear Astrophysics



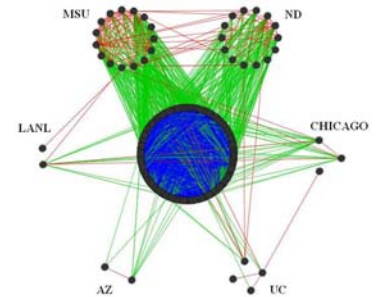
The success of JINA as a NSF Physics Frontier Center and its impact as unifying factor on the diverse field of Nuclear Astrophysics can be visualized through social networking techniques. Networking models provide the perfect tool to demonstrate social interaction, which were applied to analyze the science collaborations within JINA and between JINA and other nuclear astrophysics research groups.

JINA research publications have been used to demonstrate the conversion of the initially only loosely connected JINA partners to a closely netted research group. This same parameter demonstrates also the impact of JINA on fostering closer and more frequent collaborations between the different sub disciplines in Nuclear Astrophysics.

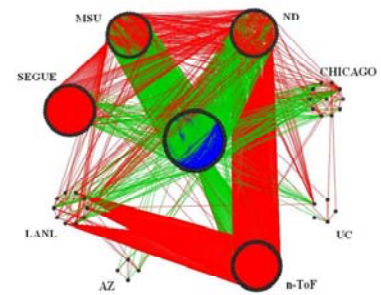
The graphs demonstrate the collaboration and joint activity patterns within JINA as network of publications between collaborating scientists. Each scientist is a node represented by a small circle; each joint publication between two scientists is a link between two nodes. The color coding indicates joint publications between two JINA members (red), JINA member and collaborator (green) and two JINA collaborators (blue). Nodes belonging to a specific institutions or collaboration group are arranged in a circular pattern.

The first set of graphs demonstrates the increase in joint publications between the various JINA institutions and groups represented by the outer circles. Also shown is the increase in interconnection to the nuclear astrophysics community which is represented by the inner circle. The second set of graphs demonstrates the increase in collaboration between the different subdisciplines in nuclear astrophysics, which were catalyzed through JINA projects and research efforts.

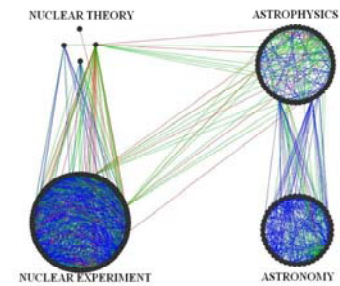
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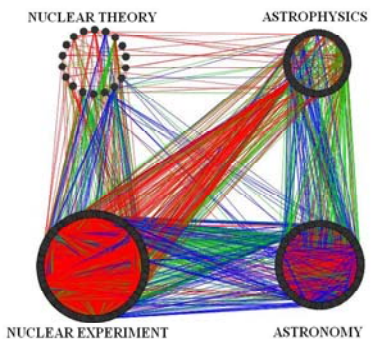
JINA network of publications in 2003



JINA network of publications in 2006



2003 connections between subdisciplines.



2006 connections between subdisciplines

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