

**Workshop on Frontiers in Nuclear Astrophysics  
PROGRAM**

Sponsored by:  
Argonne National Laboratory  
University of Chicago  
ASCI Flash Center at the University of Chicago

**FRIDAY, February 16, 2001**

11:00 am	Physics Division Colloquium r-Process Abundances in Halo Stars and the Age of the Galaxy	J. Cowan
12:15 pm	Lunch	
1:20 pm	Welcome Session I	J. Truran
	<b>Chair (J. Truran)</b>	
1:30 pm	Quantum Monte Carlo Calculations of Astrophysical Cross Sections Towards Precision Tests of Big Bang Nucleosynthesis Isotopic Composition of Cosmic Rays The $^{13}\text{C}(\text{ ,n})^{16}\text{O}$ Reaction: Neutron Source for the s-Process Nucleosynthesis in Massive stars: the Influence of the $^{12}\text{C}(\text{ ,g})$ and $^{22}\text{Ne}(\text{ ,n})$ Reactions Measurement of Neutron Capture of $^{14}\text{C}$ at Astrophysical Energies	R. Wiringa B. Fields J. Connell J. Goerres A. Heger A. Horvath
3:30 pm	Break	
4:00 pm	<b>Chair (J. Schiffer)</b>	
	The $\beta$ -delayed p- Decay of $^{17}\text{Ne}$ and the $^{12}\text{C}(\text{ , } )^{16}\text{O}$ Cross Section The $^{19}\text{F}(\text{ ,p})^{22}\text{Ne}$ Reaction and Fluorine Production in AGB Stars The $^{19}\text{F}(\text{p, } )^{20}\text{Ne}$ Reaction and Breakout from the Cold CNO Cycle The Influence of the First Excited $1/2^+$ State in $^{17}\text{F}$ on the $^{14}\text{O}(\text{ ,p})^{17}\text{F}$ Reaction Rate Coulomb Dissociation and the Trojan-Horse Method Future Radioactive Beam Measurements at ORNL	C. Morton C. Ugalde A. Couture E. Rehm S. Typel M. Smith
6:30 pm	Dinner at the Argonne Guest House	

**SATURDAY, February 17, 2001**

**Chair (P. Parker)**

8:30 am	Thermonuclear Detonations on Thousands of Processors	F. Timmes
	Quenching Processes in Flame-Vortex Interactions	M. Zingale
	Simulations of Nova Thermonuclear Runaways	J. Dursi
	Nuclear Heating in the Crust of an Accreting Neutron Star	E. Brown
	Observatory for Multiflavor Neutrinos from Supernovae (OMNIS)	A. Murphy
10:10 am	Break	

**Chair (S. Austin)**

10:30 am	Detection of Short-Lived Radionuclides as Signatures of Nucleosynthesis	M. Paul
	Thorium/Uranium Dating of Halo Stars	S. Burles
	Barium Isotopes in Presolar Grains	A. Davis
	Trace Element Concentrations in Presolar Grains by Synchrotron X-ray Fluorescence	Y. Kashiv
	Study of r-process Nuclei around N=82 at ISOLDE	A. Woehr

12:10 pm Lunch

**Chair (E. Rehm)**

12:50 pm	New Paradigms in Neutron Capture Nucleosynthesis	G. Mathews
	Possible Evidence of Quark Matter in Neutron Star X-Ray Binaries	F. Weber
	Neutron Detector Array for Beta-Delayed Neutron Decay in r-Process Nuclei	P. Santi
	The Spin Dipole Resonance	S. Austin
	Charge Exchange Reactions and Nuclear Matrix Elements	V. Zelevinsky
	The Neutron Radius in $^{208}\text{Pb}$ and Nuclear Astrophysics	C. Horowitz
	Perspectives for Mass Measurements Very Far from Stability	G. Bollen

3:10 pm Close