Goals and Management of JINA

NSF Site Visit May 8, 2006

Michael Wiescher

- JINA Members & Collaborations
- JINA Research Components & Initiatives
- JINA Organizational Structure
- JINA Budgetary Structure
- JINA Achievements & Future Goals
- JINA Manpower & Visitors
- JINA Web-Developments & Outreach

JINA Core & Associate Institutions

Core Institutions: (PI status)	University of Notre Dame Michigan State University University of Chicago
Associate Institutions: (JINA fellow program)	Argonne National Laboratory Los Alamos National Laboratory CANDU/Notre Dame University of Arizona UC Santa Barbara UC Santa Cruz

JINA Affiliates & Collaborators

Affiliated Institutions (letter of understanding):

Los Alamos National Laboratory
ViSTAR (Mainz, GSI, Germany)
SDSS-2 collaboration
Lawrence Berkeley Laboratory (proposal)
Western Michigan University (proposal)
3 SciDAC Center Proposals

Collaborating US/Canada Institutions:

Arizona State University, AZ
Ball State University, IN
Hope College, MI
HRIBF, Oak Ridge Natl. Lab., TN
Indiana University South Bend, IN
University of Maryland, MD
McGill University, Canada
McMaster University, Canada
Mississippi State University, MS
University of North Carolina, NC
Northwestern University, IL
San Diego State University, CA
TRIUMF, Canada
Villanova University, PA
Western Michigan University, MI
Yale University, CN

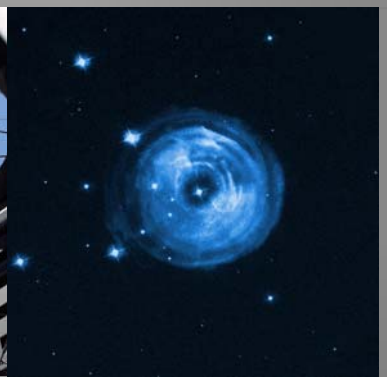
Collaborating Non-US Institutions:

ATOMKI, Debrecen, Hungary
Basel U., Switzerland
FZ Karlsruhe, Germany
GSI, Germany
Hebrew University, Israel
INAF, Frascati, Italy
INFN LUNA, Gran Sasso, Italy
Kocaeli University, Turkey
KVI Groningen, Netherlands
Monash University, Australia
n-ToF CERN, Switzerland
RCNP Osaka, Japan
U. Surrey, UK
TH Darmstadt, Germany
U. Torino, Italy
UNAM/ININ, Mexico

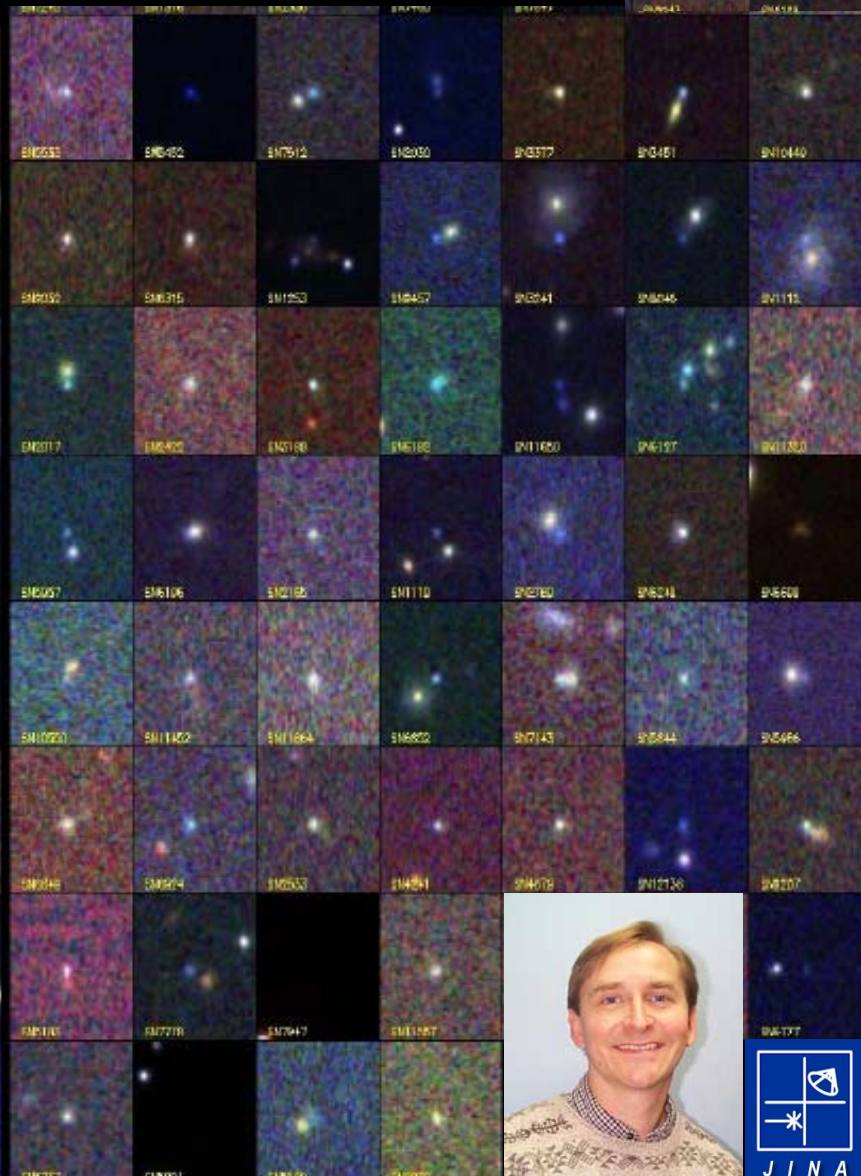
JINA Astronomy Collaborations

UC Santa Cruz, CA
Carnegie Institution, NY
University of Arizona, AZ
Harvard University, MA
Ohio State University, OH
University of Texas, TX
Texas Tech University, TX
McDonald Observatory, TX
Princeton University, NJ
US Naval Observatory, DC
Fermi Laboratory, IL
Rensselaer Polytechnic Institute, NY
Case Western Reserve University, OH
Johns Hopkins University, MD
University of Wisconsin, WI
Indiana University, IN
University of North Carolina, NC
University of Washington, WA
American Museum of Natural History, NY
New Mexico State University, NM

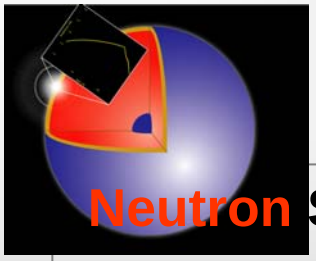
National Observatory of Japan
University of Tokyo, Japan
Seoul National University, Korea
Australian National University
Cambridge University, UK
Potsdam University, Germany
Observatorie d' Paris, France
ESO, Germany
Padova University, Italy
Niels Bohr Institute, Denmark
University of Sao Paulo, Brazil
Trieste Observatory, Italy
MPI for Astronomy, Germany
University of Basel, Switzerland



SDSS-II SN Discoveries



JINA Research Goals



Neutron Star Laboratory
rp-process nucleosynthesis
electron capture reactions
pycno-nuclear reactions
XRB & NS crust simulations

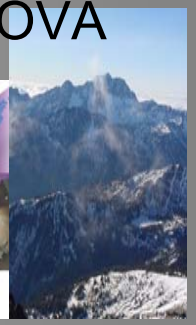
Origin of Elements & Supernovae
r-process nucleosynthesis
p-process nucleosynthesis
α-process
weak r-process neutron sources
weak interaction
thermo-nuclear reactions
SN model simulations

Origin of Elements in Stars
nucleosynthesis & stellar evolution
s-process & AGB stars
early stars nucleosynthesis
Nucleosynthesis simulation

reaction rate compilation

Large Collaborative Programs
SDSS-2-SEGUE/SUPERNOVA
CANDU/LBT

ARIA
DUSEL
VISTAR/GSI



Nuclear Theory Initiative ND&ANL
SciDAC & ASC Associations

Coupled to realistic model simulations

JINA Structure

- Science is structured in MRCs represented by P.I.s
- Organization is structured in ROCs represented by Coordinators
  - P.I.s become spokespersons responsible for coordination and communication within MRC, also responsible for initiating new research directions and projects within MRC
  - Coordinators are responsible for coordination and organization of large scale collaboration efforts and serve as JINA representatives

Organizational Structure of JINA

JINA Advisory Committee

JINA Executive Committee

JINA Director
M. Wiescher

Major Research Components

MRC1
nuclear reactions
in stellar evolution
M. Wiescher

MRC2
nuclear physics
in supernovae
J. Truran

MRC3
radioactive beams
& cataclysmic binaries
H. Schatz

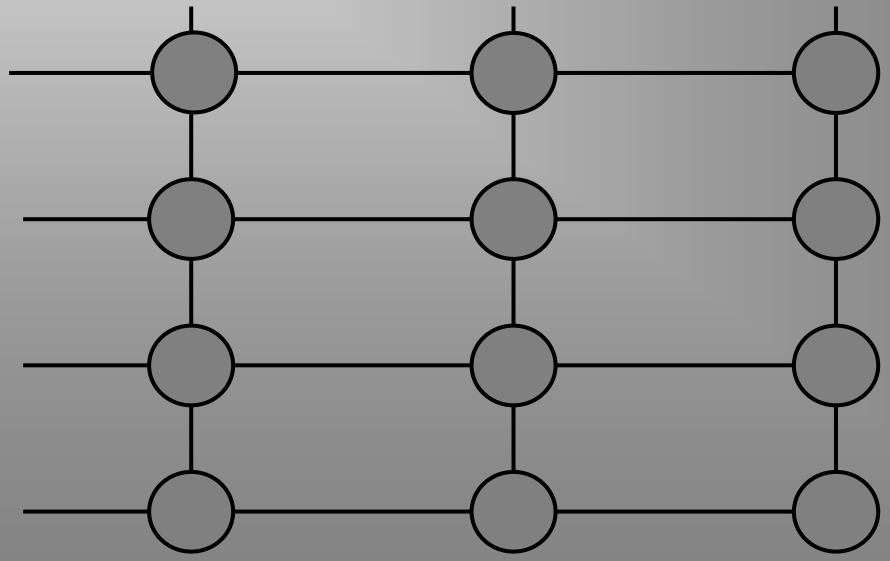
Research Organization

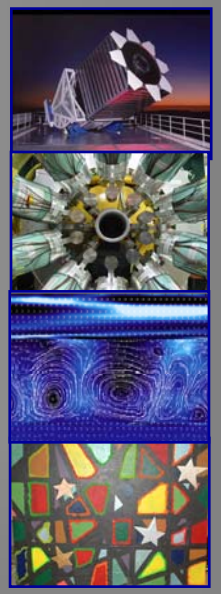
Observation
T. Beers

Experiment
H. Schatz,
M. Wiescher

Theory
tba

Outreach
S. Coshow,
H. Schatz





JINA Committees

Executive Committee

monthly phone conferences

Ani Aprahamian (Notre Dame)
Sam M. Austin (MSU)
Timothy Beers (MSU)
Lars Bildsten (UCSB)
Karl E. Rehm (ANL)
Hendrik Schatz (MSU)
James W. Truran (U. Chicago)

Adam Burrows (U. Arizona)
Frank Timmes (LANL)

International Advisory Committee

annual review meetings

Sam M. Austin (JINA, NSCL, MSU, USA)
Roland Diehl (MPI, Garching Germany)
Stuart Freedman (UC Berkeley, USA)
Karlheinz Langanke (TH Darmstadt, GSI, Germany)
James Lattimer (SUNY, Stony Brook, USA)
Peggy McMahan (LBNL, USA)
Ken'ichi Nomoto (U. Tokyo, Japan)
Peter Parker (Yale University, USA)
Verne Smith (U. Texas, NOAO, USA)
Monique Spite (Observatoire de Paris, France)
Friedrich-Karl Thielemann (U. Basel, Switzerland)

Vijay Pandharipande (U. Illinois, USA)
Chris Sneden (U. Texas, USA)
Todd Strohmeyer (Goddard, NASA, USA)
Stan Woosley (UCSC, USA)

JINA Budget

$10M for 5 years including overhead
plus 25% from core institutions

ISNAP/U. Notre Dame	32%
CANDU/U. Notre Dame	8%
NSCL/MSU	36%
University of Chicago	14%
University of Arizona	5%
UC Santa Barbara	5%

Additional Support

$ 125,000 ND for SDSS-II
$ 125,000 MSU (in kind)
$ 60,000 LANL students
$ 330,000 LANL
$ 55,000 NSF Supplement

Equipment	20%
Postdocs & Students	50%
Visitors & Conference	25%
Outreach & Education	5%

JINA Research Components

MRC-1: Low Energy Nuclear Reactions and Stellar Evolution

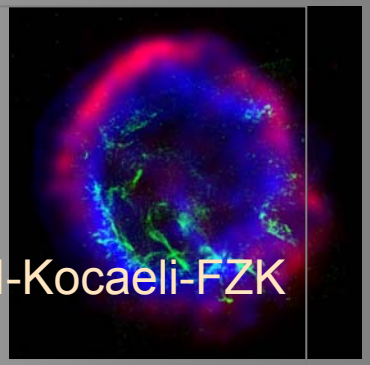
Spokesperson: M. Wiescher (Director)

Low energy reactions in stellar H burning:	ND-UNC-LUNA
Neutron sources in stellar He burning:	ND-FZK-Monash
Low energy reactions in stellar He burning:	MSU-LANL-WMU
	ANL-NWU-WMU-Hebrew
	ND-MSU-GSI-UNAM
Nuclear processes in stellar C burning:	ND-ININ-TRIUMF
	ND-LANL-Torino
s-process branch points as stellar thermometer:	LANL-MSU-ND-FZK-n_ToF
Observational signatures of the s-process:	MSU-UoC-SEGUE
Charged particle reactions & WD abundances:	ND-LANL-FZK-Monash
Convection & nucleosynthesis in AGB stars	LANL
Pre- collapse massive star nucleosynthesis	LANL-UCSC-SciDAC

JINA Research Components

MRC-2 Nuclear Physics in Supernova

Spokesperson: J. Truran (Associate Director)

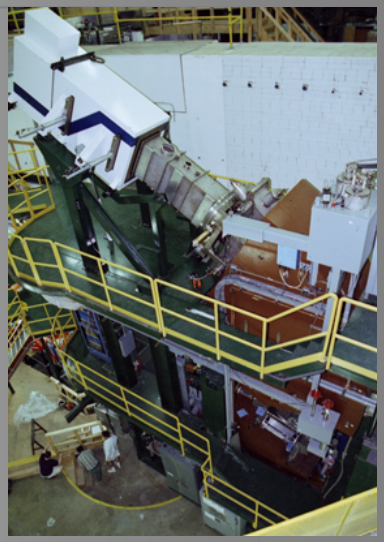


Nuclear reactions in the p-process	ND-MSU-ATOMKI-Kocaeli-FZK
Simulations of the p-process	MSU-ND-FZK
Nuclear reactions in the α-process	ANL-Hebrew-NWU
Simulations of the r-process	ND-UoC-Surrey-n_ToF
Nuclear data for the r-process	MSU-ND-PNWL-Mainz
	MSU-GSI-Mainz
weak interaction in SNC	MSU-RCNP
	MSU-GSI
	ND-MSU
Type II SN shock-front models	JINA-UoAz
Type II SN r-process modeling	JINA-UoAz
SN impact in ISM	ND-UoC-MSU-MPE
Type Ia SN modeling	MSU-UoC
Nucleosynthesis in type Ia SN models	UoC
Observational signatures of the r-process	MSU-SEGUE

JINA Research Components

MRC-3: Reactions with Radioactive Beams & Cataclysmic Binary Systems

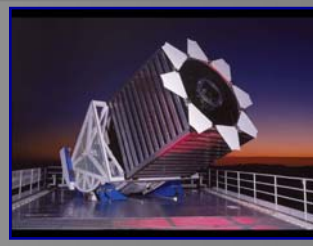
Spokesperson: Hendrik Schatz (Associate Director)



Radioactive beams in HCNO & NeNa cycles	ANL-UNC
CNO-break-out feeding the αp-process	ND
	ANL-NWU-Yale
Nuclear reactions in the αp & rp-process	ND-MSU-RCNP-KVI
	MSU-ND
Nuclear masses for the rp-process	MSU-ND
	ANL
Weak interaction in NS crust	MSU-UCSB-LANL-ViSTARS
Pycnonuclear reactions in NS crust	ND-MSU-USP-Joffe
Accretion mechanism on WD & NS	ND-LANL-Villanova
XRB nucleosynthesis modeling	UCSC-LANL-MSU
	MSU-ND-LANL-Basel
Superburst models	MSU-UCSB-McGill
Surface oscillation modes on NS	UCSB

JINA Research Organization

ROC-1: Observation Collaborations & Activities



Spokesperson: T. Beers (Associate Director)

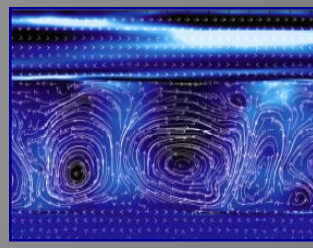
SDSS-II-SEGUE/SUPERNOVA	MSU-ND-et al.
SOAR, LBT, other telescopes	MSU-ND-et al.

ROC-2: Experiment Collaborations

Spokesperson: H. Schatz/M. Wiescher

MSU developments	MSU-et al.
ND developments & St. George Separator	ND-et al.
JINA-ARIA	ANL-MSU-ND-ORNL
JINA-DUSEL	ND-UNC-CSM-LBNL-LUNA
JINA-FAIR	MSU-ND-FZK-ViSTAR

ROC-2: Theory Collaborations



Spokesperson: tba

ASC for Astrophysical Thermonuclear Flashes	UoC-LANL
NSCL/MSU Theory Group	MSU-ND-GSI
Nuclear Theory Initiative, NTI	ND-UoC-ANL
Supernova SciDAC	UCSC-UoAz-LANL-LLNL
Future SciDAC Initiatives	LANL./ UCSC/UoC

JINA Post-Docs 2003-2006

LAST	FIRST	INSTITUTION	MRC	ROC	GENDER
Galaviz	Daniel	NSCL/MSU	MRC2/MRC3	ROC2	M
Lisetzky	Alexander	NSCL/MSU	MRC2	ROC3	M
Matos	Milan	NSCL/MSU	MRC2	ROC2	M
Pereira	Jorge	NSCL/MSU	MRC2	ROC2	M
Gupta	Sanjib	NSCL/MSU	MRC3	ROC3	M
Lisetzky	Alexander	NSCL/MSU	MRC2	ROC3	M
Sakharuk	Alexander	NSCL/MSU	MRC2	ROC3	M
Steiner	Andrew	NSCL/MSU-Astron.	MRC3	ROC3	M
Thirupathi	Sivarani	Astronomy/MSU	MRC2/MRC1	ROC1	F
Notani	Masahiro	ANL/MSU	MRC1	ROC2	M
Otsuki	Kaori	ND, U. Chicago	MRC2	ROC3	F
Townsley	Dean	U. Chicago	MRC3	ROC3	M
Piau	Laurent	U. Chicago	MRC1/MRC2	ROC3	M
Fisker	Jacob	CANDU/ND	MRC3	ROC3	M
Lan	Nguyen	CANDU/ND	MRC2	ROC3	F
Tilley	David	CANDU/ND	MRC2/MRC3	ROC3	M
Costantini	Heide	NSL/ND	MRC1	ROC2	F
Couder	Manoel	NSL/ND	MRC1/MRC2	ROC2	M
Gasques	Leandro	NSL/ND	MRC1	ROC2	M
Rapp	Wolfgang	NSL/ND & NSCL	MRC2	ROC3	M
Tan	Wanpeng	NSL/ND	MRC3/MRC1	ROC2	M

21 total

6 MRC-1
10 MRC-2
6 MRC-3

1 observer
12 theorists
8 experimenters

17 male
4 female

4 North America
1 South America
10 Europe
6 Asia

JINA Graduate Students 2003-2006

LAST	FIRST	INSTITUTION	MRC	ROC	GENDER
Beceril	Ana	NSCL/MSU	MRC2	ROC2	F
Hosmer	Paul	NSCL/MSU	MRC2	ROC2	M
Elliot	Thom	NSCL/MSU	MRC2	ROC2	M
Estrade	Alfredo	NSCL/MSU	MRC2	ROC2	M
Larusso	Giuseppe	NSCL/MSU	MRC3	ROC2	M
Montes	Fernando	NSCL/MSU	MRC2	ROC2	M
Ouelette	Michelle	NSCL/MSU	MRC3	ROC2,ROC3	F
Lee	Young Sun	Astronomy MSU	MRC1, MRC2	ROC1	M
Marsteller	Brian	Astronomy MSU	MRC1,MRC2	ROC1	M
Steele	Wallace	Astronomy MSU	MRC1,MRC2	ROC1	M
Warikoo	Ankur	Astronomy MSU	MRC1,MRC2	ROC1	M
Murphy	Jeremiah	U. Arizona	MRC2	ROC3	M
Shen	Ken	UCSB	MRC3	ROC3	M
Piro	Anthony	UCSB	MRC3	ROC3	M
Seitenzahl	Ivo	U. Chicago	MRC2	ROC3	M
Peng	Fang	U. Chicago	MRC3	ROC3	F
Medina	Anibal	U. Chicago	MRC2	ROC3	M
D'Andrea	Chris	CANDU/ND	MRC2	ROC1	M
Beard	Mary	NSL/ND	MRC3	ROC3	F
Couture	Aaron	NSL/ND	MRC1	ROC2	M
LeBlanc	Paul	NSL/ND	MRC1	ROC2	M
Lee	Hye Young	NSL/ND	MRC2	ROC2	F
O'Brien	Shawn	NSL/ND	MRC1/MRC3	ROC2	M
Palumbo	Annalia	NSL/ND	MRC2	ROC2	F
Quinn	Matt	NSL/ND	MRC2	ROC2	M
Skorodumov	Boris	NSL/MSU	MRC2	ROC2	M
Ugalde	Claudio	NSL/MD	MRC1	ROC2	M

27 total

8 MRC-1
17 MRC-2
7 MRC-3

5 observer
8 theorists
15 experiment

21 male
6 female

12 N.America
6 S.America
5 Europe
4 Asia

JINA Visiting or Exchange for Students & Postdocs

Last	First	JINA institution	Home Institution	Field	Gender
Amar	Nathalie	UND/NSCL/MSU	GANIL, Caen, France	OR	F
Amthor	Matt	LANL	NSCL/MSU	MRC2	M
Beard	Mary	NSCL/MSU	U. Notre Dame	MRC3	F
Cheng	Philip	NSCL/MSU	UCSB	MRC3	M
Church	Candace	LANL	UCSC	MRC2	F
Degenaar	Natalie	NSCL/MSU	Amsterdam, U. Netherlands	MRC3	F
Dillmann	Iris	UND/NSCL/MSU	U. Mainz, Germany	MRC2	F
Fracasso	Sarah	NSCL/MSU	U. Milano, Italy	MRC2	F
Frebel	Anna	Astronomy, MSU	ANU, Australia	MRC1	F
Frytag	Bernd	LANL	NSCL/MSU	MRC2	M
Gao	Zaochun	UND/NSCL/MSU	CIAE, Bejing, PR China	MRC2	M
Hennrich	Stefan	NSCL/MSU	U. Mainz, Germany	MRC3	M
Howard	Meredith	NSCL/MSU	Ohio State University	MRC2	F
Lee	Hye Young	NSCL/MSU	U. Notre Dame	MRC2	F
Lucatello	Sara	Astronomy, MSU	U. Padua, Italy	MRC2	F
Magkotsios	Georgios	LANL	U. Notre Dame	MRC1	M
Marshall	Jennifer	Astronomy, MSU	Ohio State University	MRC1	F
Masseron	Thomas	Astronomy, MSU	U. Montpellier, France	MRC1	M
Matic	Andrija	UND	KVI Gronigen, Netherlands	MRC3	M
Pang	Dan Yang	NSCL/MSU	CIAE, Bejing, PR China	MRC3	M
Peng	Fang	LANL	U. Chicago	MRC3	F
Pignatari	Marco	UND/Los Alamos	U. Torino, Italy	MRC1	M
Quinn	Mathew	NSCL/MSU	U. Notre Dame	MRC2	M
Smith	Ed	NSCL/MSU	Ohio State University	MRC3	M
Tar	Clariss	LANL	NSCL/MSU	MRC1	F
Teymazurian	Arthur	NSCL/MSU	U. Notre Dame	MRC2	M
Wallace	Mark	LANL	NSCL/MSU	MRC3	M
Wang	Peng	U. Notre Dame	Nanjing U., PR China	MRC1	M

28 grad students & postdoc visitors & JINA exchange

10 exchange visits
18 long term visits

13 female
15 male

12 NSCL/MSU
4 Astr./MSU
6 Notre Dame
8 LANL

10 Experiment
12 Theory
4 Observation

JINA Visiting Undergraduate Students

Last	First	JINA institution	Home Institution	Field	Gender
Altmann	Christoph	CANDU/ND	U. Stuttgart, Germany	MRC3	M
Bartlett	Amy	U. Notre Dame	U. Surrey, UK	MRC2	F
Beer	Christoph	U. Notre Dame	TH Augsburg	TH	M
Boittin	Nathalie	U. Chicago	Orsay, France	OR	F
Baeumle	Elmar	U. Notre Dame	TH Schweningen, Germany	TH	M
Beard	Mary	U. Notre Dame	U. Surrey, UK	MRC3	F
Efe	Gulnur	U. Notre Dame	Kocaeli U., Turkey	MRC2	F
Elliott	Thom	NSCL/MSU	U. Surrey, UK	MRC2	M
Falahat	Sascha	U. Notre Dame	U. Mainz, Germany	MRC1	M
Gils	Christian	U. Notre Dame	U. Konstanz, Germany	TH	M
Griesel	Timo	U. Notre Dame	U. Mainz, Germany	MRC3	M
Honorato	Eddie	U. Notre Dame	UNAM, Mexico	TH	M
Jungmann	Susanne	U. Notre Dame	U. Heidelberg, Germany	OR	F
Kern	Linda	NSCL/MSU	TH Darmstadt	MRC2	F
Kessler	Ruben	NSCL/MSU	U. Mainz, Germany	MRC2	M
Rothert	Tina	U. Notre Dame	U. Erlangen, Germany	TH	F
Scherz	Florian	NSCL/MSU	U. Mainz, Germany	MRC2	M
Simon	Lena	U. Notre Dame	U. Freiburg, Germany	TH	F
Simpson	Edward	U. Notre Dame	U. Surrey, UK	MRC1	M
Suttner	Peter	U. Notre Dame	U. Erlangen, Germany	TH	M
Taube	Arne	CANDU/ND	U. Stuttgart, Germany	MRC3	M
Thomas	Jayne	U. Notre Dame	U. Surrey, UK	TH	F
Triebe	Matthias	U. Notre Dame	TH Schweningen, Germany	MRC1	M
Vaughn	Kelly	U. Notre Dame	U. Surrey, UK	MRC2	F

3 MRC-1
7 MRC-2
4 MRC-3
8 technical design
2 outreach

10 theory/computer
14 experiment

14 male
10 female

JINA undergraduate student involvement

For 1-3 month research projects

JINA 2003-2004

Undergraduates involved in research: 11

male 9 female 2

MSU 5, ND 6, Chicago 0

JINA 2004-2005

Undergraduates involved in research: 11

male 10, female 1

MSU 4, ND 4, Chicago 1

JINA 2005-2006

Undergraduates involved in research: 8

male 6, female 2

MSU 4, ND 3, Chicago 1

JINA long term senior visitors

Last	First	JINA Institution	Home Institution	Country
Aguilera	Eli	U. Notre Dame	ININ	Mexico
Azuma	Richard	U. Notre Dame	University of Toronto	Canada
Berg	Georg	U. Notre Dame	KVI Groningen, Netherlands	Germany
Christlieb	Norbert	Astronomy, MSU	U. Hamburg, Germany	Germany
Colo	Gianluca	NSCL/MSU	Universita di Milano	Italy
Elekes	Zoltan	NSCL/MSU	ATOMKI, Debrecen	Hungary
Flambaum	Victor	NSCL/MSU	Univ of New South Wales	Australia
Geppert	Ulrich	UND &LANL	MPI for extraterrestrial Physics, Garching	Germany
Glasner	Ami	U. Chicago	Hebrew University, Jerusalem	Israel
Guray	Taygun	U. Notre Dame	Kocaeli University, Izmit	Turkey
Gyurky	Gyorgy	U. Notre Dame	ATOMKI, Debrecen	Hungary
Hammer	Wolfgang	U. Notre Dame	U. Stuttgart	Germany
Johnson	Jennifer	Astronomy, MSU	Ohio State University, OH	USA
Jose	Jordi	U. Chicago	University of Politecnica de Catalunga	Spain
Kratz	Karl-Ludwig	UND & NSCL	Kernchemie, U. Mainz	Germany
Lattanzio	John	UND & Chicago	Monash U.	Australia
Lucatello	Sara	Astronomy, MSU	U. Padova	Italy
Nakanishi	Kosuke	NSCL/MSU	Osaka University	Japan
Norris	John	Astronomy, MSU	Australian National University	Australia
Ozkan	Nalan	U. Notre Dame	Kocaeli University, Izmit	Turkey
Pfeiffer	Bernd	NSCL/MSU	Kernchemie, U. Mainz	Germany
Reinhart	Matthias	UND & LANL	U. Göttingen	Germany
Rockosi	Constance	Astronomy, MSU	Lick Observatory, AX	USA
Rossi	Silvia	Astronomy, MSU	U. de Sao Paulo	Brazil
Scheller	Kent	U. Notre Dame	S. Indiana University, IN	USA
Somorjai	Endre	U. Notre Dame	ATOMKI, Debrecen	Hungary
Trautvetter	Hanns-Peter	U. Notre Dame	University of Bochum	Germany
Wu	Chengli	U. Notre Dame	Natl.Tsing Hua University	Taiwan
Yakovlev	Dmitry	U. Notre Dame	Joffe Institute, St. Petersburg	Russia
Yanny	Brian	Astronomy, MSU	Fermi Lab, Il	USA

30 Long Term Visitors
2 weeks – 3 months

From 14 countries

Astronomy: 7
Experiment: 14
Theory: 9

U. Notre Dame: 17
Michigan State: 12
U. Chicago: 3
Los Alamos: 2

Seminar speakers & Lecturers

- JINA Lecture Series @ Notre Dame
- JINA-Seminar @ Notre Dame
- JINA Pizza Seminar @ MSU

year	2003/04	2004/05	2005/06
seminars	21	22	29
NSCL/MSU	10	11	16
Notre Dame	11	11	13

Visitor registration routine has been established through the JINA website: http://www.nd.edu/%7Ejina2/html/visit_appform.html

Faculty Development at JINA Core Institutions

NSCL/Michigan State University

- 2003 Remco Zegers, Nucl. Experiment
  Filomena Nunes, Nucl. Theory
- 2004 Ed Brown , Astrophysics Theory
- 2006 Search for 2 Nucl. Experiment

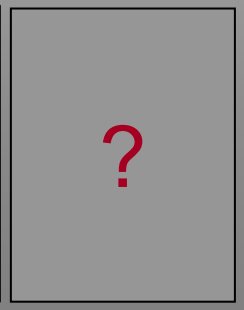
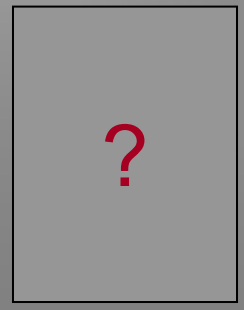
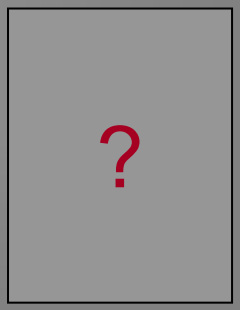
University of Notre Dame

- 2003 Philippe Collon, Nucl. Experiment
- 2004 Chris Howk , Astronomy
- 2006 Search for 1 Nucl. Experiment

Supplementary support by the university, college, and department administrations in providing bridge positions for faculty and for postdoc and staff personal





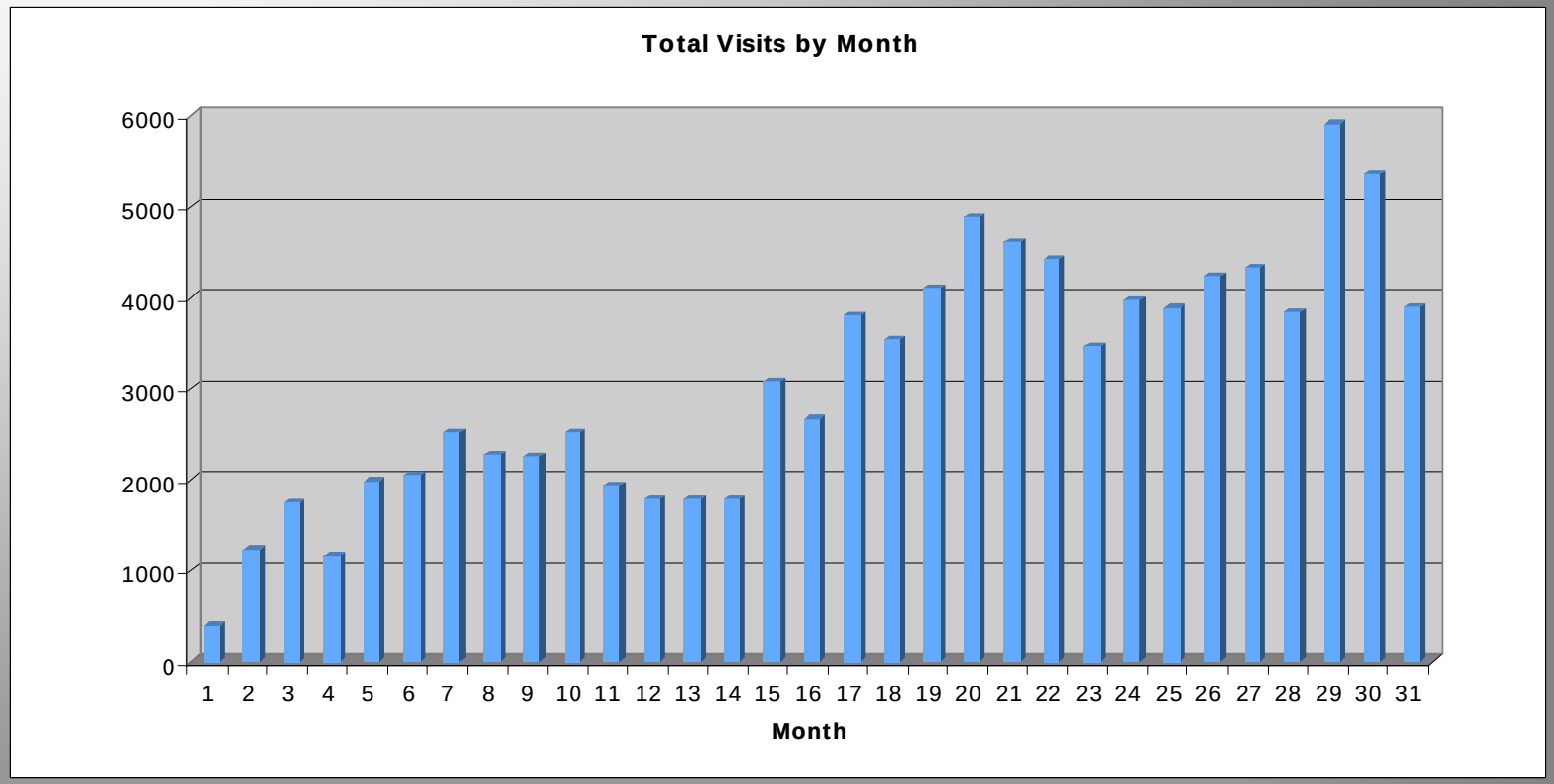
JINA outreach concept

- Developing new concepts for communication & exchange
  - JINA website & intranets
  - JINA Virtual Journal & SEGUE Virtual Journal
  - JINA ReacLib Library, Stellar Abundance Library
  - Organization of goal oriented workshops on MRC related topics
  - Support for conferences & workshops in the field
  - Training courses and schools

- Outreach & Education
  - Outreach through art and entertainment
  - Outreach through support of existing programs
  - Outreach through research and training
  - Development of new concepts & initiatives

JINA website

www.jinaweb.org (**not** www.jina.org!)

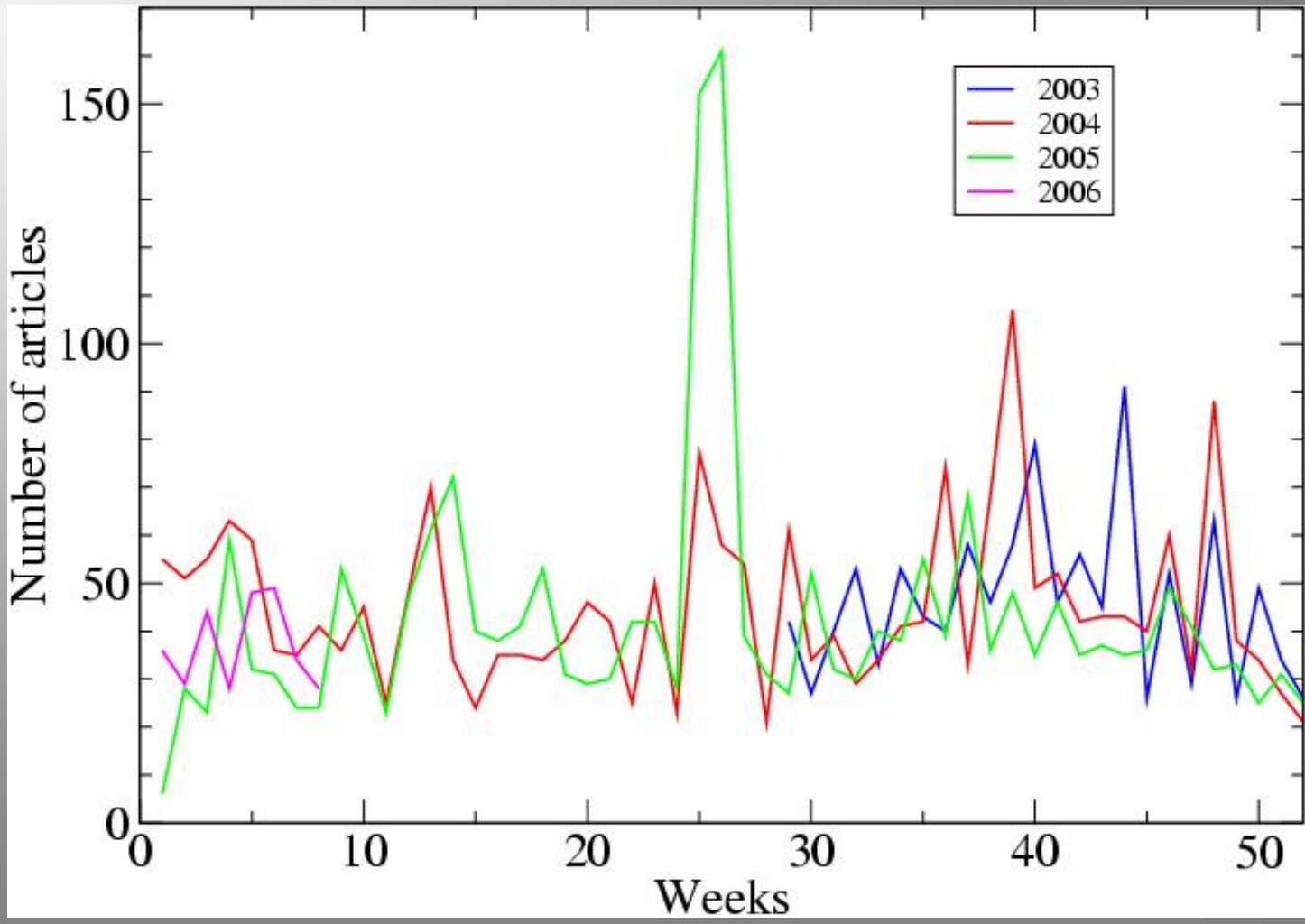


year	# of hits	# / day	US	Int'l
2003/05	21822	61	70.2%	29.8%
2004/05	42129	117	66.5%	33.6%
2005/06	31458	150	67.1%	32.9%
2005/06	53928	extrapolated		

Monthly statistics available!

JINA Virtual Journal

Number of Nuclear Astrophysics related publications



Virtual Journal

Website Activity

On average
50 papers/week

REACLIB & STARLIB

REACLIB project under development between MSU-ND -ORNL to maintain up-dated reaction rate library and provide on-line reaction rate library access. The review and implementation of new experimental or theoretical results will be the responsibility of the editorial board.

STABLIB project under development at MSU to build an easily accessible database that reports all information, on a star-by-star basis, for elemental abundance data that has been reported in the recent literature (which we take to be 1990 and forward) for stars with reported metallicities [Fe/H] < -1.0.

Details & demonstrations will be provided in the next presentation!

Communication, Exchange & Training

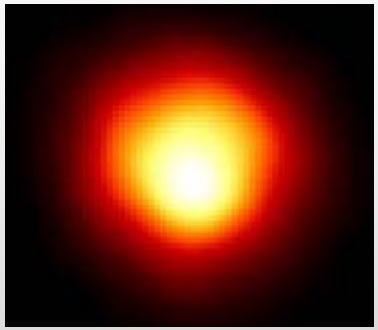
For fostering the Center spirit and for the developing and maintaining of collaborations & MRC initiatives & momentum

Project design and development through topic and project oriented workshops

Communication and training through technique oriented schools

For details see Suzanne!

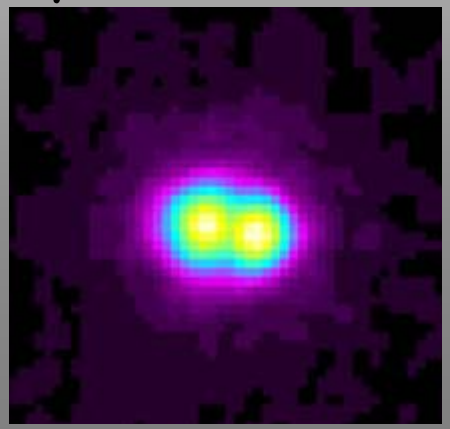
Major Research and outreach

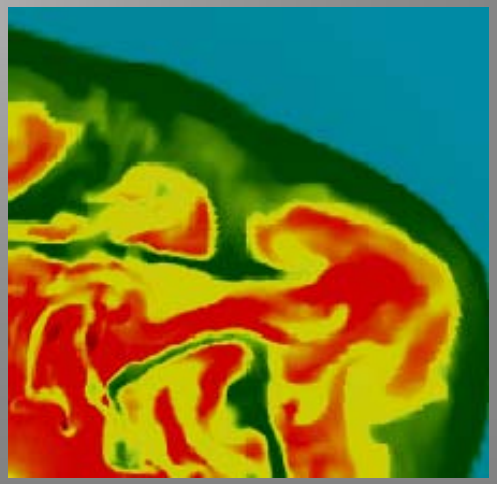


MRC1 - Nucleosynthesis and Stellar Evolution

MRC2 - Nucleosynthesis in Supernovae

MRC3 - Nucleosynthesis in Cataclysmic Binaries





Public Outreach Program

The Core Program

Elementary School:	From Art to Science
Middle School:	Science in the classroom
High School:	PAN & PIXE-PAN
College:	Research Opportunities

Opportunity Program (with external funding)

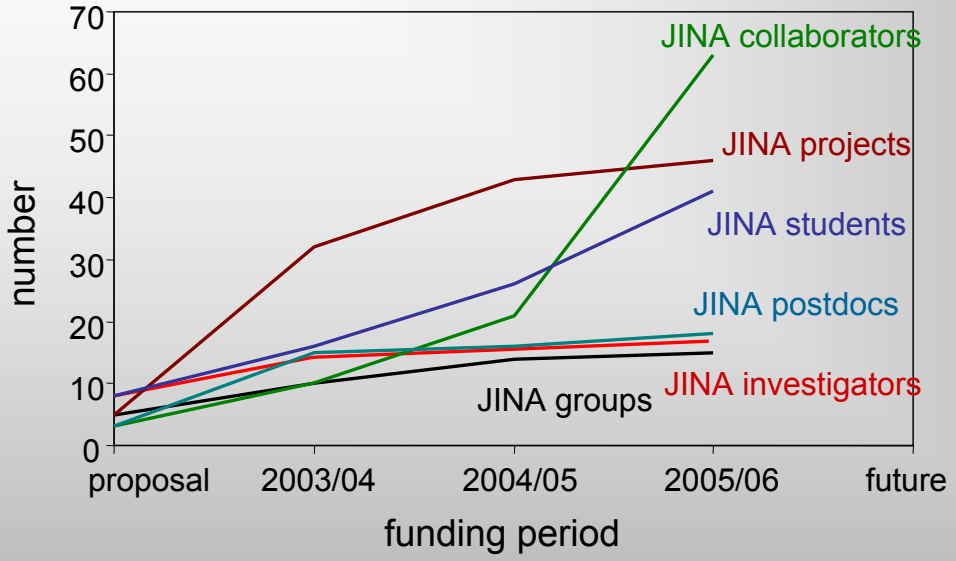
Middle School level:	Sensing our World

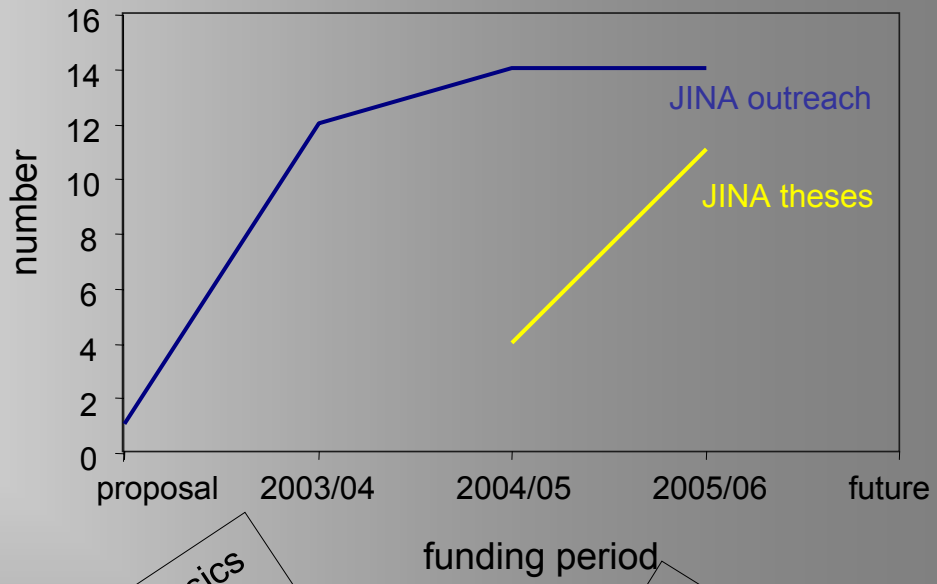
The Exploratory Program

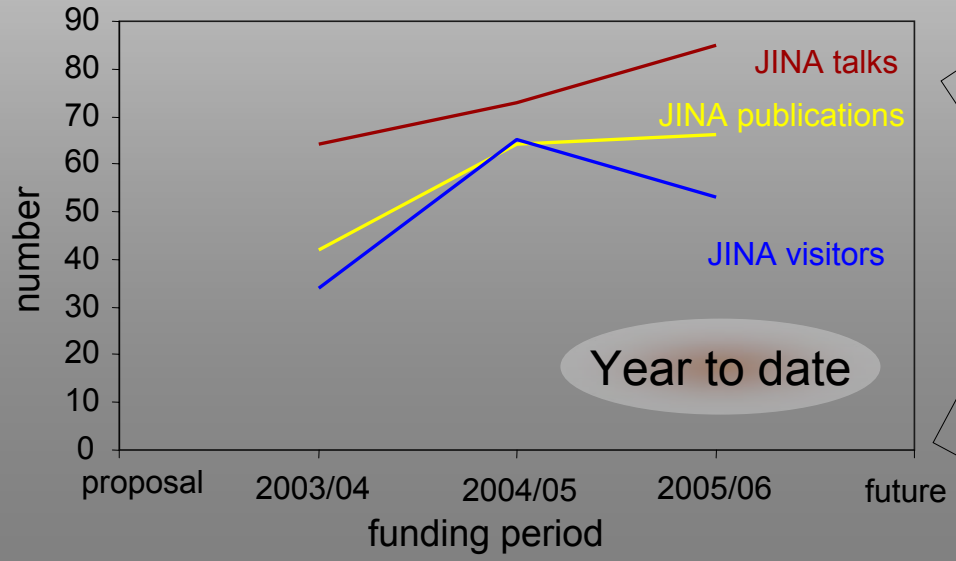
New ideas,
New concepts,
New developments
New publicizing ideas

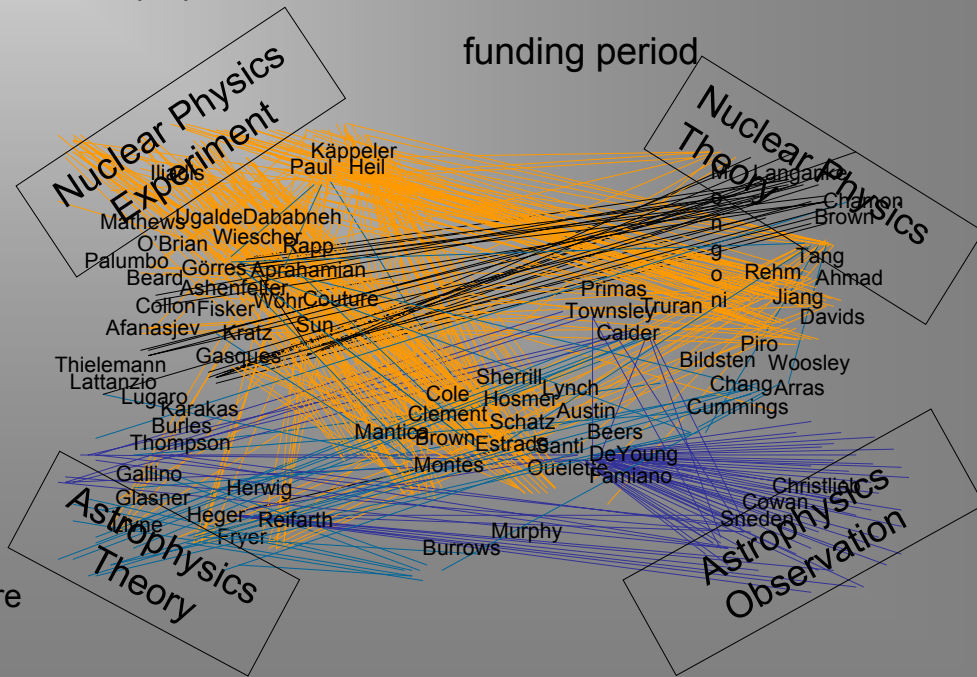
See next presentation

Summary Statistics



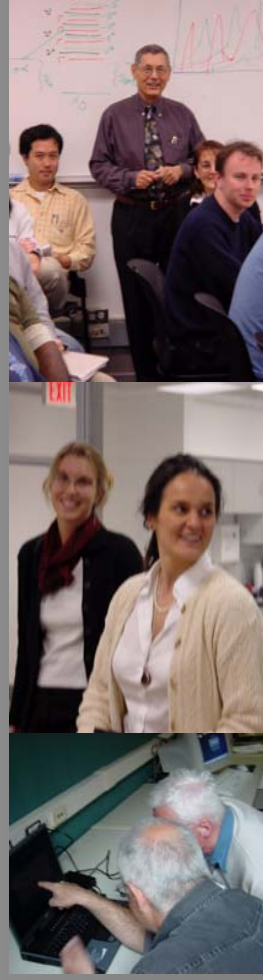






Summary & Conclusion

Many successful projects from stellar core to neutron star crust



JINA has gained considerable recognition & visibility in the field through it's research, it's conference, and it's training program! It operates as a multi-institutional PFC center based on strong collaborative and communication links. It operates a broad and active outreach program from elementary school to college level.