

# JINA Outreach

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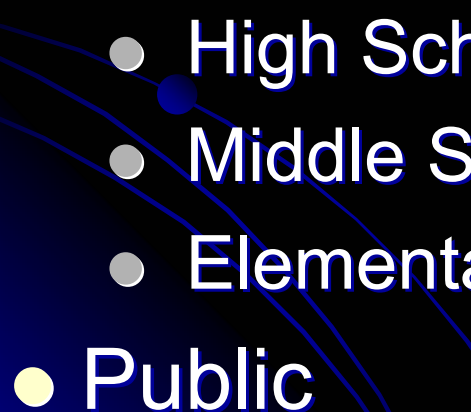
JINA Advisory Board Meeting



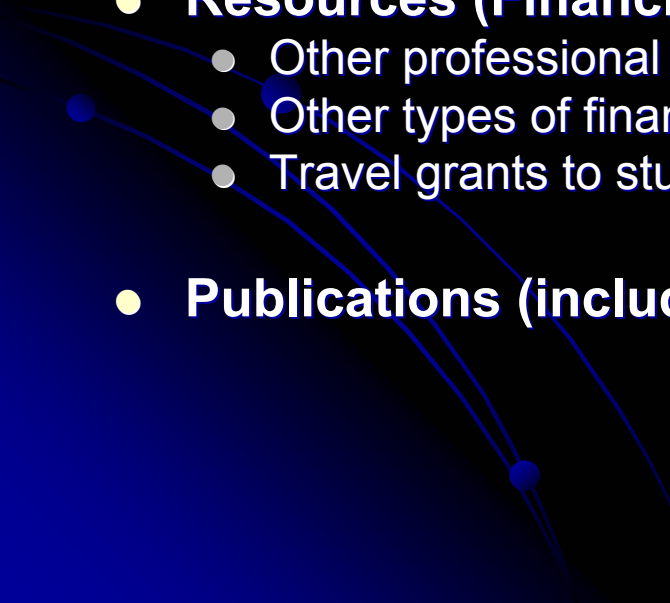
# JINA Outreach Vision & Mission

- Vision – to reach out to every audience appropriate to JINA (from K-12 to the public)
- Mission – to provide opportunities for involvement in JINA and/or in the science of JINA
- Primary Goals:
  - to promote nuclear astrophysics
  - to increase awareness and appreciation of the field
  - to develop and recruit future nuclear astrophysicists

# JINA Outreach Audiences

- Science Community
  - Graduate
  - Undergraduate
  - K-12 (teachers & students)
    - High Schools
    - Middle Schools
    - Elementary Schools
  - Public
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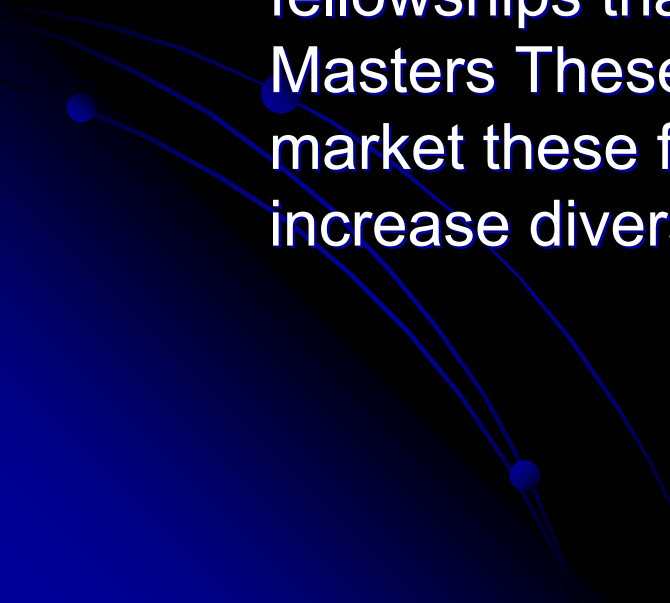
# Types of Outreach Programs

- **Research Experience**
    - this involves 1 on 1 mentoring, usually in a lab setting where participants become actively involved in the research of JINA
  - **Content (Curriculum Development/Enhancement)**
    - Professional development activities of JINA
    - Materials support
  - **Resources (Financial)**
    - Other professional development activities
    - Other types of financial support, e.g. field trip grants
    - Travel grants to students/teachers
  - **Publications (including Web)**
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Outreach audience	JINA Outreach by Type
Graduate	Research experience/resources curriculum development/enhancement*
Undergraduate	Research experience/resources curriculum development/enhancement*
K-12	Professional development Research experience/resources Content
Public	Content Publications

# JINA Outreach by Audience

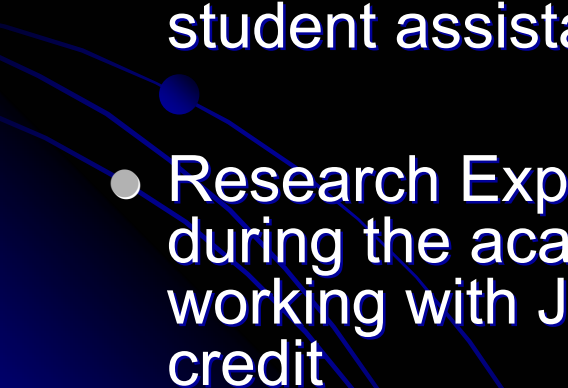
- **Graduate Programs**

- Research Fellowship for Underrepresented Groups
  - For next year, I would re-name and re-vise this program to more simply be a series of research fellowships that we make available for completing Masters Theses and Dissertations, and possibly market these fellowships to schools which may increase diversity in the field
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# JINA Outreach by Audience

- **Undergraduate Programs**
  - Research Assistance Programs – undergrads work with and for JINA scientists
  - Research Experience Program Partnership with the National Labs (Year 2 and on)
  - Travel Grants to promote conference attendance, presenting research (Y2 +)

# JINA Outreach by Audience

- **K-12 Programs – High School – Research Exp**
    - PAN Program @ MSU – professional development and a bit of research experience for HS and MS teachers and HS students
    - Research Experience Program for HS teachers @ ND  
Two HS teachers will lead an experiment with HS student assistants
    - Research Experience Program for HS students – during the academic year, students have been working with JINA scientists in the NSL for course credit
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# JINA Outreach by Audience

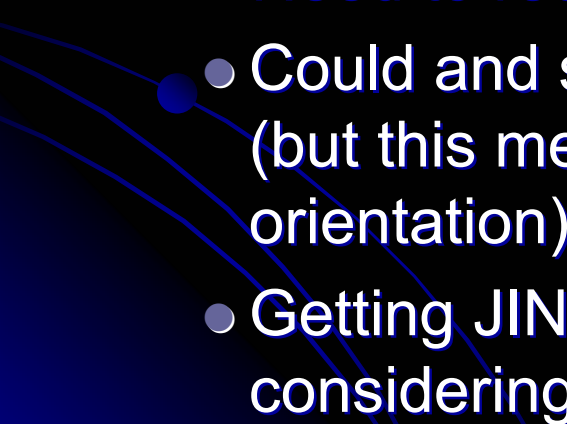
- **K-12 High School/Middle School**
  - Classroom Materials Mini-Grants
    - We offer financial support to teachers to purchase curriculum enhancement materials broadly relating to the field of nuclear astrophysics
  - Field Trip Grants
    - To encourage and make possible class field trips to JINA labs, we offer financial support and incidentals
  - Teacher Science Institute
    - Providing professional development training to middle school teachers in the SB area
  - Sensing Our World
    - Summer camp (week long) for middle school kids @ MSU focused entirely on physics, with JINA participation

# JINA Outreach by Audience

- **K-12 Elementary**

- From ART to SCIENCE: Igniting Stellar Imaginations is an elementary school project where we offer content (books/movie) and financial support for art supplies. The teachers use our content to ignite the imaginations of their students, who then produce artwork for us on the theme, “made of star stuff.”

# Challenges to JINA Outreach

- The state of education in the US provides unique challenges to our desire to bring this very advanced science into K-12 classrooms.
    - Need to recognize and work within their curricula;
    - Could and should target top schools in science - (but this means going well beyond a local orientation);
    - Getting JINA science into kits may be worth considering.
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# Example Application for the Classroom Materials Mini-Grant

*The mini-grant materials will have come at an ideal time. We have just integrated the Michigan Space Science objectives into our curriculum. While our new Holt textbook covers some information well, we need better visuals and some hands on minds on activities for the kids to really embrace these integrated topics. Our district has cut funding and we do not have monies to maintain the current curriculum let alone the newly adopted material. I fear that we will not be giving the time to the interesting concepts that space science offers without materials to support our teaching.*

Eaton Rapids High School in Michigan  
Chemistry, Natural and Environmental Science

# Beyond the First Year: Big Projects under Consideration

- Project GRAND – Quarknet Collaboration
  - This would be a cosmic ray detector project with an emphasis on making large amounts of data available across the country (world?) for HS students to utilize.
- ASTRO\*NET
  - In the early stages of discussion, this idea is to find a way to involve outreach audiences in the analysis of new stellar data, primarily through the internet making it possible to reach disparate and large groups of people at a very low cost.
- Nuclear Astrophysics School\*
  - Modeled after the DOE's Nuclear Chemistry School, JINA is investigating how we might create a similar program with the intention of producing promising future graduate students

# How You Can Help

- Writing – Publishing for Lay Audiences
  - if anyone is interested in writing publications on JINA science for lay audiences, I would offer administrative support and assistance;
- A JINA Speakers Bureau
  - Similar to the way the NSCL offers their scientists to give talks, JINA could do the same. How interested JINA scientists are in doing this will determine how much we advertise and solicit speaking engagements;
- Identify promising students and encourage them to take advantage of JINA opportunities.

# Thank You

- Hendrik
  - Rilla McHarris @ MSU
  - Kathy
  - Jim
  - Tim
  - Sam
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- All feedback and suggestions are welcome!