

Physics of Atomic Nuclei

Teacher Professional Development Workshop – June 9, 2012

What

Sponsored by Black Hills State University (BHSU) and the Sanford Underground Research Facility (SURF), the *Physics of Atomic Nuclei (PAN)* workshop is a conceptual introduction to topics of modern physical science and astronomy. Areas of focus include atoms and their constituents (nuclei and particles), the origin of the elements, cosmic rays and dark matter - all areas of study at SURF in the coming years. The workshop is designed both as a review for educators who have taken a previous PAN workshop, and as an introduction for educators who are potentially interested in attending a one-week PAN workshop planned for the Summer of 2013. A tentative schedule is attached.

Who

Grade 5-12 Educators who work with students in either formal or informal science education programs.

Where

Saturday, June 9, 2012 / 8:30 – 4:30
Sanford Underground Research Facility, Yates Education Building
Lead, SD

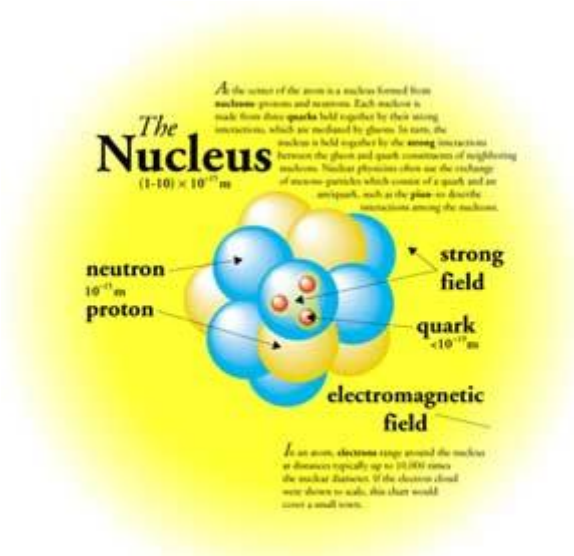
Details

A \$100 stipend to help cover travel costs will be awarded to the first 40 South Dakota participants who sign up by June 1st. The workshop is limited to 40 participants. Applications will be accepted until filled.

Questions?

Contact Peggy Norris, Deputy Director of Education, Sanford Underground Laboratory at Homestake

(605)-722-5049, pnorris@sanfordlab.org



This workshop is funded by South Dakota EPSCoR



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Schedule for PAN Workshop

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| 8:30 – 9:00 | Registration, breakfast |
| 9:00 – 10:30 | Atoms & the Electromagnetic Interaction Modern models of the atom, light and the electromagnetic interaction Activities with atomic spectroscopy |
| 10:30 – 10:45 | Break |
| 10:45 – 12:15 | Nuclei and Particles Constituents of a nucleus, nuclear decay, leptons and neutrinos Activities with nuclear decay |
| 12:15 – 1:00 | Lunch |
| 1:00 – 2:30 | Nuclear and particle astrophysics Using atomic, nuclear and particle physics to understand the universe, the origin of the elements and the life cycle of stars Activities with cosmic rays |
| 2:30 – 2:45 | Break |
| 2:45 – 4:15 | The History and Fate of the Universe Dark matter and energy, the Big Bang Model |
| 4:15 – 4:30 | Discussion & evaluations |

A continental breakfast and lunch are included. Participants will receive a set of laminated wall charts, copies of all presentations and activities, and will receive information about how to borrow spectroscopy and nuclear science instrumentation for use in their classrooms.

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