Produced for PBS by the
WGBH Science Unit

One Guest Street
Boston, MA 02135

617.300.2000

www.pbs.org/nova

WGBH PBS

Funding for NOVA is provided by David H. Koch, the Howard Hughes Medical Institute, the Corporation for Public Broadcasting and public television viewers like you.

DAVID H. KOCH

HHMI

Corporation for Public Broadcasting
A private corporation funded by the American people

Major funding for *Making Stuff* is provided by the National Science Foundation.

NSF

Additional funding for *Making Stuff* is provided by The Department of Energy.

Funding for NOVA scienceNOW is provided by the National Science Foundation, the Howard Hughes Medical Institute, the Alfred P. Sloan Foundation, the George D. Smith Fund, and public television viewers.

NSF

HHMI

ALFRED P. SLOAN FOUNDATION

George D. Smith Fund

FROM ANIMAL INTELLIGENCE TO ARTIFICIAL INTELLIGENCE, NOVA INVITES VIEWERS TO "SMARTEN UP" WITH "THE SMARTEST NIGHT ON TV," A PBS PRIMETIME EVENT WITH THREE ALL-NEW PREMIERES

Premiering Wednesday, February 9, 2011, from 8-11pm ET/PT on PBS

CULMINATING IN A NOVA SPECIAL PRESENTATION:

"Smartest Machine on Earth: Can A Computer Win On Jeopardy!?"

www.pbs.org/nova/watson

BOSTON, MA [FOR IMMEDIATE RELEASE] – Who's the smartest of them all? Get ready to match wits with smart animals, smart materials, and smart machines, when PBS airs a mind-blowing three hours of science premieres in a specially themed primetime programming event airing on Wednesday, February 9, 2011, from 8:00 pm to 11:00 pm ET/PT.

On this evening "The Smartest Night on Television," NOVA takes a 360-degree look at what it means to be "smart":

- **8 pm ET/PT:** The evening kicks off with NOVA scienceNOW's ***How Smart Are Animals?*** hosted by Neil deGrasse Tyson, a program that offers remarkable findings and footage of animal intelligence and the surprising behavior of several kinds of animals, including dogs, dolphins, and talking birds that researchers are revealing.

- **9 pm ET/PT:** Next up: *New York Times* technology reporter David Pogue hosts ***Making Stuff: Smarter:*** the fourth and final installment of NOVA's fascinating series on materials science, spotlighting the latest developments in "smart materials" many inspired by nature and containing the potential to transform our lives.

- **10 pm ET/PT:** The evening culminates with a NOVA special presentation: ***Smartest Machine on Earth: Can a Computer Win on Jeopardy!?***

Smartest Machine on Earth chronicles NOVA's unprecedented, behind-the-scenes access to IBM researchers as they develop the technology for Watson, the state-of-the-art computing system, named after company founder Thomas J. Watson. The film examines the technological feats and hurdles necessary to develop "Watson," the challenges artificial intelligence researchers face in mimicking the human thought process, and potential applications for the future.

The NOVA special will premiere just five days before Watson is set to make television history on *Jeopardy!* -- competing for a grand prize of $1 million against Ken Jennings and Brad Rutter, the show's most successful and celebrated contestants of all time – in matches airing over three consecutive days on February 14, 15, and 16, 2011 (check local listings for *Jeopardy!* times and broadcasters).

"Watson is a terrific leap forward in the field of artificial intelligence, and NOVA cameras have been given incredible access to bring viewers the fascinating inside story," said Paula S. Apsell, Senior Executive Producer of NOVA.

Seeing Watson in action will leave many, well, dumbfounded. Viewers will experience Watson's incredible ability to reason and, tackle human language as no computer before. Refined and fine-tuned over four years and countless man-hours, Watson has already managed to rival some of the best former *Jeopardy!* contestants. But now it's time to take the stage and see what Watson is really made of.

Watson is not connected to the Internet instead, it is stuffed with millions of documents — including anthologies, dictionaries, encyclopedias —from various sources, such as Wikipedia, *The New York Times*, and World Book Encyclopedia, from which it searches for answers. It's been trained on thousands of *Jeopardy!* clues, but during game time it "hears" the questions for the first time just like its human competitors.

Watson is fascinating to see in action. Its accuracy now rivals the best human players: It has a "life-like" voice and is extremely fast on the buzzer, something that certainly frustrates its human opponents. The system also utilizes a sophisticated game strategy, calculating how much money to wager depending on its confidence and how much it stands to lose.

The IBM Watson team, led by David Ferrucci, provides intimate access into the often challenging and humorous creation this one-of-a-kind machine. "I don't think the world has ever seen a machine quite like Watson… something that can answer over this breadth, that can answer with this kind of confidence… this quickly, with just enough-- horsepower-- computational power to fit in a room," says Ferrucci.

The film also explores other groundbreaking artificial intelligence technologies and introduces viewers to machines that see, speak, and move through the world. Some of the world's top computer scientists discuss the overall meaning of Watson, and whether we are close to building a true artificial intelligence.

"Viewers will love 'The Smartest Night on Television' as a hugely entertaining and fascinating look at the smart world around us and how varied it can be when exploring everything from the animal kingdom to materials science to the frontiers of A.I.," said Apsell. "It's a very exciting time in artificial intelligence, in particular--with computers that can understand language, talk, and simultaneously translate, and machines that can autonomously navigate the world, such as robot cars. In fact, some experts are confident that eventually information will be downloaded from the Internet directly into our brains."

PROGRAM DESCRIPTIONS - "THE SMARTEST NIGHT ON TELEVISION"

NOVA *scienceNOW / "How Smart Are Animals?"* (Premieres Feb. 9 @ 8pm ET/PT)
In a new season that tackles some of the biggest questions on people's minds, the subject of animal intelligence fits in perfectly with the theme of the smartest night on television. Perhaps "Watson" would have no trouble, but you might think twice about matching wits with a dog, an octopus, a dolphin, or a parrot after watching this intriguing new NOVA scienceNOW. While we may not be ready for barnyard Barnards or sending pets to Harvard, the remarkable footage and findings presented here by cutting-edge researchers demonstrate how many animals are much smarter than we think and in ways we had never imagined. Viewers will meet an American "superdog" with a "vocabulary" of more than 1,000 words; a brainy, briny, eight-legged "Einstein" with some incredible problem-solving capabilities; and dolphins displaying extraordinary creative, collaborative, and communicative behavior—including interpreting written symbols--which is surprising even those scientists researching them. Tune in to see Neil deGrasse Tyson challenge one dog's genius with a new and unexpected deductive reasoning test, and find out why dogs are the new darlings of research labs—much more cooperative than chimps and bonobos. The episode also spotlights the 30 years of groundbreaking work of researcher Irene Pepperberg, who revolutionized scientists' notions of animal communications and shares her amazing body of research and the moving story of the untimely demise of her beloved talking parrot, Alex.

NOVA / *Making Stuff: Smarter* (Premieres Feb. 9 @ 9pm ET/PT)
What can nature teach us about building smarter materials? ***Making Stuff: Smarter*** looks into the growing number of materials that seem almost alive–able to react, change, and even learn. An Army tanker truck that heals its own bullet wounds. An airplane wing that changes shape as it flies. For ideas, scientists are turning to biology and producing some innovative new developments in materials science. Knowledge and inspiration drawn from nature are showing scientists new ways to give our materials amazing new abilities. By understanding how geckos climb even smooth walls, scientists have created a gecko adhesive that allows robots to do the same. Studying the properties of skin has led to the development of self-healing protective foam. And host David Pogue literally goes swimming with sharks to understand a different kind of skin that is intriguing scientists. Viewers will also meet the researchers who are modeling a material after sharkskin to develop an antibacterial film that, when sprayed in hospitals, could eliminate MRSA and other antibiotic-resistant bacteria. Pogue concludes with a visit to a scientist who has created a material that may make Harry Potter's invisibility cloak a reality!

NOVA / *Smartest Machine on Earth* (Premieres Feb. 9 @ 10 pm ET/PT)
Augmenting human intelligence is a lot tougher than it looks; the promise of Hal from *2001:A Space Odyssey* is still just a fantasy. But scientists are edging closer with machines like "Watson," an IBM computing system that is gearing up for a first-of-its-kind challenge: taking on human contestants on the game show *Jeopardy!* With a brain the size of 2,400 home computers and a database of about 10 million documents, will Watson be able to compute its way to victory? Given the complexity of human language, could any computer truly understand it? It remains to be seen if this amalgam of circuits and silicon can really take us closer to the dream of a fully developed, artificial intelligence, a truly "conscious" machine. Win or lose, the difficulty of mimicking the human thought process with software is showing artificial intelligence researchers that there's more than one way to be "intelligent."

# # #

Now in its 38th year of broadcasting, NOVA is television's most-watched primetime science series, reaching an average of five million viewers weekly. The series remains committed to producing in-depth science programming in the form of hour-long (and occasionally longer) documentaries, from the latest breakthroughs in technology to the deepest mysteries of the natural world. NOVA airs Wednesdays at 9pm ET/PT on WGBH and most PBS stations. The Director of the WGBH Science Unit and Senior Executive Producer of NOVA is Paula S. Apsell.

DAVID H. KOCH HHMI Corporation for Public Broadcasting
A private corporation funded by the American people

Funding for NOVA is provided by David H. Koch, the Howard Hughes Medical Institute, the Corporation for Public Broadcasting, and public television viewers.

NSF

Major funding for *Making Stuff* is provided by the National Science Foundation. This *Making Stuff* material is based upon work supported by the National Science Foundation under Grant No. 0610307. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Additional funding for *Making Stuff* is provided by The Department of Energy.

Powderhouse™

Making Stuff was produced by Powderhouse Productions for NOVA/WGBH. Producers gratefully acknowledge the cooperation of The Materials Research Society. NOVA is closed-captioned for deaf and hard-of-hearing viewers and described for people who are blind or visually impaired by the Media Access Group at WGBH.

NOVA scienceNOW is produced for PBS by the WGBH Science Unit at WGBH Boston. The director of the WGBH Science Unit and senior executive producer of NOVA and NOVA scienceNOW is Paula S. Apsell; the executive producer of NOVA scienceNOW is Samuel Fine; Neil deGrasse Tyson is host and executive editor.

NSF HHMI ALFRED P. SLOAN FOUNDATION George D. Smith Fund

Funding for NOVA scienceNOW is provided by the National Science Foundation, the Howard Hughes Medical Institute, the Alfred P. Sloan Foundation, the George D. Smith Fund, and public television viewers.

Both NOVA and NOVA scienceNOW are closed-captioned for deaf and hard-of-hearing viewers and described for people who are blind or visually impaired by the Media Access Group at WGBH. The descriptive narration is available on the SAP channel or stereo TV and VCRs. To order NOVA direct from WGBH Boston Video, visit shop.wgbh.org or call 800.949.8670.

Pressrooms
pbs.org/pressroom <http://pbs.org/pressroom>
pressroom.wgbh.org/nova <http://pressroom.wgbh.org/nova>

Press Contacts

Eileen Campion
Dera, Roslan & Campion PR
212.966.4600
eileen@drcpublicrelations.com

Steve Sears
NOVA National Promotion
617.300.4281
steve_sears@wgbh.org

Photography and Online Contact
Karen Laverty
NOVA National Promotion
617.300.4382