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*Updates on
Smithsonian*

RESEARCH

Clockwise, from top left:

Editorial in *Science* Feathers Special Issue on Bird Genomics/Office of the Under Secretary for Science

The December 12, 2014, special issue of the leading journal *Science* was dedicated to genomic research on birds. In it, W. John Kress, Interim Under Secretary for Science, offered a commentary “Valuing Collections” that highlights the importance of scientific collections for science and society. Kress said, “. . . museum collections, and the species they represent, provide windows into the past, inform about the present, and help predict the future of natural habitats and human-altered environments.” These collections include preserved specimens, living individuals, and frozen tissue samples from which DNA can unlock mysteries of extinct species. Kress offered, “The most pressing challenge is to build collections for future needs that maximize access and benefit-sharing for all. Collections must be sustained for the long term, which will require increased funding for their physical and scientific curation.”

Untitled: *The Art of James Castle*/Smithsonian American Art Museum

James Castle (1899–1977) is considered one of the most important self-taught artists in the United States. For nearly seven decades, Castle gathered materials around his rural Idaho home — such as packaging, advertisements, string, and soot — and created elaborate and unmistakable representations of his world. Images of obscured vistas, intricate interiors, remote farmscapes, stylized figures, and arcane charts of letters and symbols simultaneously invite and thwart access or understanding. Castle’s artworks, each of which is untitled and undated, served as the primary means of reflection and expression for an artist who was born profoundly deaf, without a conventional way to communicate with others.

Untitled: The Art of James Castle, which opened September 26, 2014, and is on view at the Smithsonian American Art Museum through February 1, 2015, celebrates this enigmatic artist and the museum’s major acquisition of 54 of his artworks. The museum is now a center for the study of Castle, with the largest collection of works by the artist outside of his home state of Idaho, which befits a collection committed to the support and interpretation of the visual culture of a citizen democracy. The museum published a book to accompany the exhibition, with essays by Nicholas R. Bell, the Fleur and Charles Bresler Senior Curator of Craft and Decorative Art, and Leslie Umberger, curator of folk and self-taught art. The essays, along with the representative sample of Castle’s vast oeuvre on display, serve as an essential introduction to an unlikely star in an expanded history of American art.

[Image: Untitled / James Castle (1899–1977) / found paper and soot / n.d. / Smithsonian American Art Museum, Gift of the James Castle Collection and Archive and museum purchase through the Luisita L. and Franz H. Denghausen Endowment]

Smithsonian Launches New Institute for Biodiversity Genomics/ Pan-Smithsonian Initiative

Scientists across the Smithsonian have applied genomic technologies in their research for years, investigating how animal and plant species function, including how species are related by evolution to one another, adapt to change, and thrive or fail to survive. The field of genomics also plays a key role in their research on climate change, disease, and biodiversity conservation. The Smithsonian is now uniting these efforts and creating a plan for transformative future research with the establishment of the Smithsonian Institute for Biodiversity Genomics. This virtual institute will provide more impact from existing investments, and provide a stronger foundation for fundraising for genomics-related projects, including the Global Genome Initiative.

The institute will build on the Smithsonian's unique assets, including its scientists, the world's largest natural history collection of 127 million specimens, and its power to convene. Investments in biodiversity genomics research will focus on four key areas:

1. **Diversity Genomics:** What are the origins of life and how are species related across the globe?
2. **Evolutionary Genomics:** How does the blueprint of life vary among individuals and species and what does this mean for their ability to adapt?
3. **Ecological Genomics:** How do ecosystems work and what makes them resilient to change?
4. **Conservation Genomics:** How do we sustain biodiversity and protect species and ecosystems?

Tools: Extending Our Reach/Cooper Hewitt, Smithsonian Design Museum

As the inaugural exhibition in Cooper Hewitt's new 6,000-square-foot Barbara and Morton Mandel Design Gallery, *Tools: Extending Our Reach* is one of the most extensive pan-Smithsonian exhibitions presented in recent years. It brings together some 175 objects from across 10 Smithsonian collections, ranging in date from a 1.85-million-year-old Paleolithic hand chopper to live images of the Sun. These objects represent the extraordinary breadth and depth of the Smithsonian's vast collections, which most audiences in New York City have never seen before.

Tools is not a traditional survey of the history of tools, or a hierarchy of the "best" designs from around the world, but an exploration of the intimate relationship between human beings and the instruments we invent and employ. Many tools are extensions of our physical selves, efficient surrogates filling in where humans lack capacity. They are the first evidence of human design, and today, more than ever, they are opening up worlds to us, including those we cannot yet travel to physically.

Research began on this exhibition in 2009 when Cooper Hewitt's Cara McCarty and Matilda McQuaid, cocurators of *Tools*, presented an exhibition proposal to feature design objects from across the Smithsonian for Cooper Hewitt's new galleries. Not only would this reinforce Cooper Hewitt's ties to the Smithsonian, it also would underscore the prevalence of design throughout the Smithsonian. A Grand Challenges Level One grant in 2011–2012 enabled travel by McCarty and McQuaid to Washington, D.C.,

to visit collections and discuss with over 60 curators and specialists the scope of the project and to enlist their support and participation. The catalog accompanying the exhibition reflects their input with texts by 48 Smithsonian staff from Cooper Hewitt, the Freer Gallery of Art and the Arthur M. Sackler Gallery, the National Air and Space Museum, the National Museum of American History, the National Museum of Natural History, the National Museum of the American Indian, the National Postal Museum, Smithsonian Libraries, and the Harvard-Smithsonian Center for Astrophysics.

Educational programs planned during the exhibition will involve curators from several Smithsonian museums. The first program, “Big and Bigger: Designing for Scale,” will occur on January 8, 2015, and feature Paul Ceruzzi from the National Air and Space Museum. The Smithsonian Channel also featured *Tools* as part of their *Seriously Amazing* series and several Smithsonian curators participated in the program.

[Image: A live feed of the Sun transmitted by an orbiting satellite]

New Research and Collections Partnership with the U.S. Department of Agriculture/National Museum of Natural History

The U.S. National Parasite Collection (USNPC) is a national and international resource for systematic, taxonomic, diagnostic, ecological and epidemiological research in parasitology. Since its founding in 1892, the USNPC has been developed by the U.S. Department of Agriculture (USDA) in Beltsville, Maryland. The USDA and the Smithsonian have articulated an agreement to transfer the USNPC to the National Museum of Natural History. This expands on the long partnership in insects between the Smithsonian and the USDA, and involves USDA staff stationed at NMNH with the collection. The current USNPC staff, including the USDA senior curator and two support scientists/managers, also have been transferred with adjunct appointments in the NMNH. The scope and depth of the collection are unparalleled in North America and make it one of the top three most significant parasite collections in the world. Current holdings are substantial (in excess of 100,000 specimen lots, with over 7,000 name-bearing types), and some 1000 new lots of specimens are accumulated annually. The USNPC serves a diverse and global constituency, providing access to specimens and databases for research programs within the Smithsonian, the USDA, and other organizations that drive parasitological research in systematics biodiversity and climate change science. The collections also meshes with the National Zoological Park and the Smithsonian Conservation Biology Institute’s efforts to strengthen Smithsonian programs in wildlife health.

[Image: Specimens in the U.S. National Parasite Collection]