2019

Office of the State Archaeologist, The University of Iowa, Annual Report for Fiscal Year 2018

Office of the State Archaeologist, University of Iowa

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The Year in Review
OSA mission statement, academic activities, staff achievements, annual work plan accomplishments, and plans and prospects for FY 2018.

By the Numbers
An overview of FY 2018 through numbers and charts.

Student Success
Thirteen undergraduate and three graduate students were involved in various OSA archaeological and related research and repository activities over the course of the fiscal year.

Research
The OSA conducts a wide range of research activities to discover the archaeological and architectural history of Iowa and surrounding midcontinent over the last 13,000 years.

Bioarchaeology
In FY 2018 the OSA Bioarchaeology Program’s efforts have focused on fulfilling its responsibilities towards the Native American Graves Protection and Repatriation Act as well as engaging in public education and outreach events.

Strategic Initiatives
The OSA provides resources and opportunities that encourage the understanding, appreciation, and stewardship of Iowa’s archaeological past.
The Year in Review

OSA Mission
The position of State Archaeologist was established in 1959. Read the entire mission statement. Read more about:
Advisory Committee
Indian Advisory Council

Academic Activities
OSA staff instructed four UI classes during FY 2018 including CRM Archaeology and Human Osteology. OSA hosted nine Brown Bag lectures presented by OSA, UI, Iowa DOT, and Sanford Museum faculty, staff, and students.

Office and Staff Achievements
During FY 2018, OSA staff were recognized for their outstanding efforts with public engagement, successful with updating the National Register of Historic Places, and quoted in regional media.

FY 2018 Annual Work Plan
Accomplishments
In FY 2018 the OSA continued energetically pursuing research, education and outreach, and service activities throughout Iowa, the surrounding region, and internationally.

FY 2019 Plans and Prospects
For FY 2019 the OSA has established 24 specific objectives.

Nuts and Bolts for FY 2018
Organization chart; financial details; strategic plan 2016–2021; and listings of OSA’s public presentations, papers presented at professional meetings, publications, service, and technical reports.

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Academic Activities

Lara Noldner
Bioarchaeology Director
Instructor

First-Year Seminar: A Tour of Biological Anthropology

Students explore the diverse field of biological anthropology and learn about many of the ways that knowledge of human biology can inform us about how people have evolved, migrated, and adapted to the many regions of the world we now inhabit.

Fall 2017, 18 students

John F. Doershuk
State Archaeologist
Instructor

Archaeology of the American Midcontinent

This course provided students with a broad introduction to the entire range of past cultural adaptations within the midcontinent including Paleoindian, Archaic, Woodland, and Late Prehistoric. Students worked in teams to develop presentations on specific sites of interest.

Fall 2017, 16 students

Field Archaeology

Iowa Lakeside Laboratory

The 2018 Lakeside Laboratory archaeological field school continued on-going research efforts in the Iowa Great Lakes region including excavations at a Woodland-era site (13DK143) within Mini-Wakan State Park immediately adjacent to the north edge of Spirit Lake.

Summer 2018, 7 students

Practicum in CRM Archaeology

Anthropology Graduate student Kirsten Tharalson completed an independent study practicum at OSA to develop her skill set regarding the laws and practice of Cultural Resource Management archaeology.

Brown Bags

Brown Bags at the OSA is a regular series through which OSA staff and guests share their research over the lunch hour. Topics include individuals’ areas of interest, work in the field, and recent developments in archaeology and architectural history throughout Iowa and the Midwest. Presentations are free and open to the public and are held in OSA’s main laboratory. Attendees are encouraged to engage in discussion and exchange following the presentation.

Click to enlarge and view list of Brown Bag presentations

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Office and Staff Achievements

In the news
State Archaeologist John Doershuk was quoted in the winter 2018 edition of *Iowa Natural Heritage* for an article about preserving archaeological sites:

“One of the best ways to permanently protect these sites — on public and private land — is conservation easements. The past is a nonrenewable resource. If we’re going to learn anything from it, we need to preserve it. We all benefit from being good stewards of these lands.”

Doershuk also participated as a panelist for the *WorldCanvass* radio broadcast of a portion the UI Provost’s Forum “Archives Against Amnesia.”

NRHP listing success
The *National Register of Historic Places* (NRHP) listing for the *Old Fort Madison*, located at the City of Fort Madison in Lee County, was successfully updated in March 2018 by OSA staff Angela R. Collins and William E. Whittaker. The nomination expanded its boundary to include recent archaeological findings of the fort’s battlefield and Black Hawk’s ravine.

In addition to the fort’s tremendous archaeological preservation buried several feet beneath the modern city surface, the nomination extended national significance to the fort and associated battlefield for its pivotal role during the *War of 1812* and its documented association with Black Hawk, a famous Native American war leader who is well known for his popular autobiography *Ma-ka-tai-me-she-kia-kiak* and for his role during the Black Hawk War of the 1832.

It’s nice to be appreciated
Chérie Haury-Artz has been personally thanked three times by the UI OVPR&ED this fiscal year due to several letters of appreciation received from various teachers in the state where she presented for classes and events. The first was from a teacher at Melcher-Dallas High School for an *Ice Age and Archaeology Methods* presentation Chérie gave at various high school science classes and at least one 6th grade class. The second recognition was from five participants and the teacher of a Master Naturalists class to whom she presented while leading a hike. The third recognition was for a *Hands on History* presentation in Milton about Richardson’s Point and the *Mormon Trails* research project. In addition, Chérie received a very complimentary personal note from the Spencer Library for her presentation about the *Ancient Trails* research project.

Thank you for your excellent work, Chérie!

Mary De La Garza, OSA’s Research Technology Director, was featured in the March 2018 edition of *Iowa Alumni Magazine* discussing the rise of digital technology in archaeology. In particular, Mary emphasized the useful role of drones for capturing thermal imagery as a technique to detect potential archaeological features beneath the ground surface, a form of remote sensing.
FY 2018 Annual Work Plan Accomplishments

In FY 2018 the OSA continued to energetically pursue research, education and outreach, and service activities on campus and throughout Iowa, the surrounding region, and internationally. In the process, the OSA continued engaging with a wide variety of students and public in and outside of Iowa. The OSA established 26 specific objectives for FY 2018 which reflected goals identified in OSA’s Strategic Plan: 2016–2021 (see Appendix A). These objectives were designed to focus OSA staff energy toward contributing to UI’s efforts to be a leading public research university while cost-efficiently maximizing the development, dissemination, and preservation of knowledge of Iowa’s human past. The specific objectives were:

1. Continue providing research support for major economic infrastructure projects such as highways, communication towers, utility corridors, and recreation areas through the OSA’s research division. Successful
2. Further assist farms, small business, and nonprofits to quickly meet their local, state, and federal regulatory obligations at affordable costs. Successful
3. Teach during fall 2017 a first-year seminar section, “Biological Anthropology” which engages incoming UI students in current research at the OSA. Successful
4. Continue development of OSA’s capacity to conduct drone-based research by utilizing OSA’s equipment in field projects involving collection of high-resolution and thermal images and develop skills in processing and analyzing collected images. Successful
5. Utilize OSA resources to offer undergraduate and graduate students research and employment opportunities including as volunteers, work-study students, research assistants, and interns, and mentor graduate students in Anthropology especially those working on a Master’s degree specialization in Cultural Resource Management archaeology or Midwest/Plains research topics. Successful
7. Teach during fall 2017 the online course “Archaeology of the American Midcontinent” on behalf of the UI Department of Anthropology. Successful
8. Submit an NEH proposal for an Implementation Grant through the Humanities Collections and Reference Resources Program to create a 3D digital library of the human skeletal remains in the UI Stanford Collections that it can be made more accessible to qualified researchers. This, in turn, will allow us to learn more about the diversity of individuals represented. Successful submission but grant not awarded
9. Continue to extend the impact of the OSA’s various social media efforts, such as Facebook, Twitter, Tumblr, and Instagram, to further increase the number of followers and timely dissemination of information on Iowa archaeology topics. Successful
10. Continue to conduct high-quality archaeological, architectural history, and osteological research for regional, national, and international grant-funded sponsors. Successful
11. Complete lab, reporting, and public outreach for the Dixon Oneto site archaeological excavations conducted on behalf of Iowa DOT in collaboration with tribal partners. Successful (reporting in progress)
12. Collaborate with the UI Pentacle Museums and other campus partners in developing the 2018 edition of the UI “Dare to Discover” Mobile Museum including major exhibits on the endangered Pangolin, Wild Iowa, and Translating Science. Successful
13. Continue to provide high-quality statewide osteological services to the State Medical Examiner’s Office and law enforcement personnel as needed and continue to work with Iowa citizens, state agencies, tribal partners, and county level historic preservation commissions to document historic cemeteries and ancient burial sites on both private and state-owned lands. Successful
14. Complete reporting and educational outreach for the DOT-funded project Bringing the Glenwood Culture to Iowans: Research, Publication, and Engagement on Archaeological Sites Excavated by the Iowa Department of Transportation. In progress
15. Complete the funded Statewide Transportation Alternatives Program project: Documenting Iowa’s Pre-Settlement Roads and Trails. In progress
16. Submit for publication at least 10 articles, reports, and book chapters, including to peer-reviewed journals, and continue contributions to newsletters, online websites, and wikis to improve the dissemination of information about the significance and value of Iowa’s past. In progress
17. Teach Introduction to Archaeology, for Cornell College in Spring 2018 (Successful) and Field Archaeology, in Summer 2018 through the Iowa Lakeside Laboratory Regents Resource Center. Successful
18. Complete development of mobile device versions of 4-SitesPro for in-field use and add Notable Locations (NL), Historic Indian Locations Database (HILD), Projectile Point Types (PPT), and LANDMASS layers. Successful
19. Initiate strategic initiatives to increase OSA’s fundraising capacity in support of education and research activities statewide. In progress
20. Attend the 2018 Society for American Archaeology (SAA) international conference (Washington, D.C.) and chair the national Public Education Committee annual meeting. OSA staff will also participate at SAA in the annual meeting and at Archaeology, the National Association of State Archaeologists, and the Council of Councils (professional associations); participate in a session focused on NAGPRA Implementation and the intersection of NAGPRA and state law (Sponsored by the American Museum of Natural History Repatriation Committee); and co-chair a symposium entitled, “21st Century Approaches to Archaeology, Education, and the Public” which will be published in the Journal of Archaeology and Education. Successful
21. Transfer approximately 250 cubic ft of Army Corps of Engineers archaeological collections and associated materials to the Illinois State Museum as part of the Corps’ curation facility consolidation program. Successful
22. Secure the final signatures needed from our 25 tribal partners to renew the Iowa NAGPRA Agreement, which will allow us to continue to rebury human skeletal remains for which tribal cultural affiliation cannot be determined. Successful
23. Attend the Project Archaeology Leadership Retreat in Bozeman, Montana and contribute to planning the 2018 National Archaeological Education Conference and visioning for national implementation of Project Archaeology and Institute for Heritage Education goals. Successful
24. Provide expertise for staffing the “Aerial Reconnaissance Training for Archaeological Databases” event for tribal heritage professionals sponsored by the Ho-Chunk Nation and present at the 2017 Wisconsin Tribal Conference hosted by the Wisconsin DOT on drone aerial reconnaissance applications in historic preservation. Successful
25. Reorganize OSA space at 700 CSLB to create more-efficient communication between project and program team members, better utilize available resources, and open the basement for installation of nearly 1,000 ft3 of additional curation space for the State Archaeological Repository. Successful
26. Continue analysis and reporting of data collected on the Lake Red Rock mammoth to fully ascertain whether human-proboscidian interaction took place and prepare a public information application for addition investigation, if warranted, on the findings. In progress

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In FY 2019 the OSA will continue to energetically pursue research, education and outreach, and service activities on campus and throughout Iowa, the surrounding region, and internationally. In the process, the OSA will continue engaging with a wide variety of students and public in and outside of Iowa. The OSA has established 24 specific objectives for FY 2019 which reflect goals identified in OSA’s Strategic Plan: 2016–2021 (see Appendix A). These objectives are designed to focus OSA staff energy toward contributing to UI’s efforts to be a leading public research university while cost-efficiently maximizing the development, dissemination, and preservation of knowledge of Iowa’s human past. The specific objectives are:

1. Continue providing research support for major economic infrastructure projects such as highways, communication towers, utility corridors, and recreation areas through the OSA’s research division.
2. Further assist farms, small business, and non-profits to quickly meet their local, state, and federal regulatory obligations at affordable costs.
3. Teach during fall 2018 a first-year seminar section, “Biological Anthropology” which engages incoming UI students in current research at the OSA.
4. Continue development of OSA’s capacity to conduct drone-based research by utilizing OSA’s equipment in field projects involving collection of high-resolution and thermal images and develop skills in processing and analyzing collected images.
5. Arrange for an Iowa Center for Research by Undergraduates academic year funding package to support a student working on the State Historical Society of Iowa HRDP-funded project by OSA: “Preservation of the John Palmquist Archaeological Collection from Southwest Iowa.”
6. Utilize OSA resources to offer undergraduate and graduate students research and employment opportunities including as volunteers, work-study students, research assistants, and interns, and mentor graduate students in Anthropology — especially those working on a Master’s degree specialization in Cultural Resource Management archaeology or Midwest/Plains research topics.
7. Complete publication and distribution of the Wall Ridge Site (13ML176) technical report through the University of Utah Press or as OSA Report 25.
8. Teach during spring 2019 the online course “CRM Archaeology: Practice and Practicalities” on behalf of the UI Department of Anthropology.
9. Submit during fall 2018 an Arts and Humanities Initiative (AHI) internal funding grant application to UI to support implementation of a high-resolution bioarchaeology scanning project as proof-of-concept for a NEH funding application.
10. Re-submit in early summer 2019 an NEH proposal for an Implementation Grant through the Humanities Collections and Reference Resources Program to create a 3D digital library of the human skeletal remains in the UI Stanford Collection so that it can be made more accessible to qualified researchers. This, in turn, will allow us to learn more about the diversity of individuals represented.
11. Continue to extend the impact of the OSA’s various social media efforts, such as Facebook, Twitter, Tumbler, and Instagram, to further increase the number of followers and timely dissemination of information on Iowa archaeology topics.
12. Continue to conduct high-quality archaeological, architectural history, and osteological research for regional, national, and international grant-funded sponsors.
13. Complete lab, reporting, and public outreach for the Dixon Oneota site archaeological excavations conducted on behalf of Iowa DOT in collaboration with tribal partners.
14. Continue to provide high-quality statewide osteological services to the State Medical Examiner’s Office and law enforcement personnel as needed and continue to work with Iowa citizens, state agencies, tribal partners, and county level historic preservation commissions to document historic cemeteries and ancient burial sites on both private and state-owned lands.
15. Complete reporting and educational outreach for the DOT-funded project Bringing the Glenwood Culture to Iowans: Research, Publication, and Engagement on Archaeological Sites Excavated by the Iowa Department of Transportation.
16. Complete the funded Statewide Transportation Alternatives Program project: Documenting Iowa’s Pre-Settlement Roads and Trails.
17. Submit for publication at least 10 articles, reports, and book chapters, including to peer-reviewed journals, and continue contributions to newsletters, online websites, and wikis to improve the dissemination of information about the significance and value of Iowa’s past.
18. Teach Introduction to Archaeological Field Methods for Cornell College in fall 2018 and Field Archaeology, in Summer 2019, through the Iowa Lakeside Laboratory Regents Resource Center.
19. Initiate strategic initiatives to increase OSA’s fundraising capacity in support of education and research activities statewide.
20. Participate in the 2019 Society for American Archaeology (SAA) international conference (Albuquerque, NM) and chair the national Public Education Committee annual meeting. OSA staff will also participate at SAA in the annual meetings of Project Archaeology, the National Association of State Archaeologists, and the Council of Councils (professional associations).
21. Complete management of the Calendar Year 2018 University of Iowa Dare to Discover Mobile Museum season and successfully decommission the project including creation of a summary report of the five-season project impacts.
22. Continue analysis and reporting of data collected on the Lake Red Rock mammoth to fully ascertain whether human-proboscidean interaction took place and prepare a publication and grant application for addition investigation, if warranted, on the findings.
23. Add a new data layer to I-SitesPro which enhances recognition of recorded archaeological sites with associated human remains or Burial Project information and assist Iowa SHPO with “stop-gap” recordation of professionally surveyed project areas posted to I-SitesPro as an accessible data layer.
24. Modernize OSA’s Archival database and create an efficient online portal linked to I-SitesPro.

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By the Numbers

- Newly Recorded Sites in FY 2018
- Sites Recorded Through FY 2017

- Years the OSA has served Iowa and Midwest region as a UI research center: 58
- Archaeological sites have been newly recorded during the fiscal year: 736
- US dollars OSA received in support from sponsored grants and contracts: $1,898,736
- Percentage is how much gifts and endowments contributed to the OSA budget: 1%
- People engaged through OSA and archaeology events: 42,855
- Staff members and adjunct researchers worked at OSA during FY 2018: 57
- Volunteer and student hours contributed to OSA projects: 2,526
- Collections were newly accessioned during the fiscal year: 81

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In addition to actively meeting its research priorities and Iowa Code statutory responsibilities, which include managing archaeological site location and related geospatial data, serving as the State Archaeological Repository, and providing protection for Iowa’s ancient human remains, the OSA energetically supports the UI academic mission. In addition to several OSA staff members appointed as adjunct faculty in the UI Department of Anthropology who offer courses in anthropology and archaeology and serve on Ph.D. and M.A. degree committees, many OSA staff members mentor honor students and train and supervise student workers, interns, and other volunteers.

The OSA actively supports undergraduate and graduate student use of its archaeological, osteological, and comparative collections; scholarly documents; electronic databases; scientific instrumentation; and laboratory space for degree-related research. These resources contribute to the educational experience of students in diverse UI departments including American Studies, Anthropology, Art & Art History, Biology, Classics, Dentistry, Earth and Environmental Sciences, Geographical and Sustainability Sciences, and History along with the programs of American Indian and Native Studies, the Informatics Initiative, and Museum Studies. The OSA regularly hosts visits from UI classes, provides guest lectures in Anthropology and other departments, offers courses in its laboratory-multimedia facility, employs work-study students majoring in a wide variety of disciplines, and supports career-building volunteer research opportunities for students.

The OSA facilities, collections, and staff provided classroom enrichment and workplace experience for students. Thirteen undergraduate and three graduate students from the institutions listed below were involved in various OSA archaeological and related research and repository activities over the course of the fiscal year. These included two students employed in a work-study capacity. Many of these students used OSA resources to complete degree requirements along with assisting OSA-sponsored research as volunteers to expand their skills. A total of 16 students and 7 members of the public worked to log 2,526 hours at the OSA contributing to projects in the lab.

**Participating Institutions**

- University of Iowa
- Solon High School
- Iowa City—City High School
- St. Cloud State University
- North Carolina State University
- Quad Cities Chapter of the Iowa Archeological Society
- Iowa Archeological Society
- North Carolina State University
- Quad Cities Chapter of the Iowa Archeological Society
- University of Iowa
- Solon High School
- Iowa City—City High School
- St. Cloud State University
- North Carolina State University
- Quad Cities Chapter of the Iowa Archeological Society
Research

Archaeological and Architectural Investigations
The OSA conducts both contract and grant-funded research involving archaeological and architectural history studies statewide.

Collections
The OSA continually adds archaeological materials and related documents to the State Archaeological Repository and provides materials for local, regional, and national exhibit and research purposes.

Technology
Conducting and disseminating modern high-quality archaeological research requires a major investment in research technology. The OSA’s involvement in such technology covers the gamut of twenty-first century breakthroughs in archaeology.

23 Presentations at Regional and International Professional Conferences

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Archaeological and Architectural Investigations

The OSA conducts both contract and grant-funded research involving archaeological and architectural history studies statewide. These projects, regardless of funding source or sponsor, generate important new knowledge on Midwestern prehistory and history, and they form the basis for many staff publications, professional and public presentations, and student and faculty research projects.

**Infrastructure Surveys**

The OSA helped the creation and development of infrastructure throughout Iowa by completing 234 investigations and evaluations during FY 2018. OSA staff surveyed proposed roads, highways, sewer lines, urban development areas, cell towers, dams, parks, wastewater plants, coal mine reclamations, and quarries.

**Dixon Site Analysis**

Analysis and reporting of 2016–2017 excavations of the Dixon site, 13WD8, is nearing completion. Dixon is a large, Late Prehistoric Oneota village dating to the 1300s AD. Over 700 square meters of dirt and prehistoric materials were excavated from the site yielding just over 124,600 artifacts weighing roughly 3,154 lbs.

**Digital Archaeology**

The OSA utilizes 3D modeling and thermal photogrammetry techniques captured from FAA licensed drones. During FY 2018, the OSA conducted drone-assisted research at Kingsley Bend Mound Group in Wisconsin and Pilot Rock in Iowa.
Infrastructure Surveys

The OSA conducted 234 archaeological and architectural projects in FY 2018, significantly contributing to the enhancement of statewide economic development.

Iowa Department of Transportation

FY 2018 marks 48 years of contracted services with the Iowa DOT for archaeological investigations and 29 years of historic architectural evaluations.

Cultural resource investigations were reported in three Phase I survey Technical Reports for Primary Roads projects. A total of 71 Phase IA Cultural Tower and Wetlands

In FY 2018 the OSA conducted archaeological surveys for 46 new cellular communication towers and 11 wetlands. Another 11 were for drinking water expansions and 10 were for wastewater treatment facilities. Still more were for road, campground, and park projects. The OSA facilitates these infrastructure and natural resource projects by ascertaining the presence of archaeological sites in danger of being damaged or destroyed. This work is conducted in a myriad of environments and seasonal conditions.

Resource Evaluation reports were submitted. Several project types received archaeological surveys during the 2017–2018 period including dike structures for a bridge replacement, a rapid-response archaeological site relocation near an active borrow area for an Interstate 380 interchange ramp, and a wetland mitigation site survey. For the first time since they were initiated no historic architectural surveys were completed during the reporting year. Importantly, architectural and archaeological fieldwork within the Interstate 80 study corridor in Cedar County are currently underway.
Dixon Site Analysis

Analysis and reporting of 2016–2017 excavations of the Dixon site, 13WD8, is nearing completion. Dixon is a large, Late Prehistoric Oneota village dating to the 1300s AD. It is located on a mostly cultivated high terrace within the Little Sioux River valley in east-central Woodbury County. The river was channelized in 1913, cutting a trench through the western portion of the site. Charles R. Keyes first recorded the site in 1932 and named it the Beers Site after the landowner. There is little mention of the site until the mid-1950s when the first professional work took place. Numerous professional investigations have been conducted since. The Dixon site is now named after the current, longtime owners.

The current investigation focused on a relatively small portion of the roughly 65–70-acre site where the Little Sioux Channel has been eroding the site. Gradiometry analysis of the excavation blocks provided crucial information that aided field excavations. Ancient human remains were recovered during this investigation under the supervision of an OSA Bioarchaeologist and tribal monitors. These were reburied in April 2018.

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Dixon Site Analysis

Over 700 square meters of dirt and prehistoric materials were excavated from the site yielding just over 124,600 artifacts weighing roughly 3,154 lbs. At least 43 pit features were identified and possibly two or three partial structures. Bison was a dietary staple along with corn, squash, and beans. Tobacco was also abundant along with wild foodstuffs. A wide variety of mammals, reptiles, and amphibians were hunted along with at least 5 types of fish and 27 types of fresh water mussels. Dogs were also present on site. Various sized ceramic jars were produced on site. Lithic material for tool production links the Dixon site with north central and northeast Iowa, southwest Minnesota, southwest Iowa, and further west to Kansas, Nebraska, and the Dakotas. A copper tool used for making chipped stone tools was recovered, as were mussel shell and bone beads, and catlinite for manufacturing pipes and other ornaments.

Retaining wall construction is complete and further erosion of the site has stopped. Future research should focus on several important questions: determination of actual site size; sampling more of the site for a better intra site understanding; and how the Dixon site fits into the wider Oneota settlement of northwest Iowa.
Digital Archaeology

The OSA utilizes 3D modeling and thermal photogrammetry techniques acquired from FAA licensed drones. Including Mary De La Garza, the Research Technology Director, three staff members at OSA are currently licensed by the FAA to pilot small unmanned aircraft systems (sUAS). Visit the Research Technology page for details about our drones and other OSA instruments.

Bird Effigy at Kingsley Bend Mound Group

Kingsley Bend Indian Mound Group, located just south of Wisconsin Dells, includes approximately 20 prehistoric mounds shaped as symbolic animals representing realms of the air (bird), earth (bear), and water (water spirit or panther). Today, Kingsley Bend is owned and maintained by the Ho-Chunk Nation.

The OSA conducted thermal imagery analysis of a bird effigy mound to help ascertain its boundaries and state of erosion to assist the Ho-Chunk Nation in their management of this sacred resource.

Pilot Rock

Pilot Rock is a massive boulder transported by a glacier to rest on a high bluff overlooking the Little Sioux River valley south of the present town of Cherokee, Iowa. The boulder is so large early explorers used the stone a landmark and navigational aid. Recent investigations recovered a Woodland-period projectile point from the base of the rock. Pilot Rock also features several prehistoric incised images called petroglyphs. The largest petroglyph is a “turkey track” that measures over one foot long. Rocks such as this one are considered sacred places by past and present Native Americans.

Using digital technology to build 3D models of significant places like Pilot Rock allow researchers tremendous opportunity to analyze spatial relationships highlighting patterns previously undetected solely through field observations.

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Research Collections

The OSA continually adds archaeological materials and related documents to the State Archaeological Repository and provides materials for local, regional, and national exhibit and research purposes. Highlights in FY 2018 include a loan renewal of zooarchaeological remains to help build a dataset for student research into human-riverine dynamics, collections research that resulted in the discovery of a heretofore unknown painted ceramic depicting a bison. Additionally, new compact mobile shelving was installed in Room B1. Collections owned by the Rock Island District Corps of Engineers were deaccessioned and transferred to a new repository for curation.

Research Loan

Dr. Carol E. Colaninno, Assistant Research Professor at the Center for STEM Research, Education, and Outreach at Southern Illinois University Edwardsville renewed her loan of zooarchaeological remains from the Gast Farm site, 13LA12. These remains will aid her in developing a zooarchaeological database that will allow students to study deep-time perspective of human-riverine dynamics.

Collections Research

OSA adjunct researcher, Dr. Joseph A. Tiffany, for the last six months has reanalyzed ceramics from the Phipps site, 13CK21, a Mill Creek Culture village site, dating between A.D. 1100 and 1200. The collection studied is from the State University of Iowa’s 1955-1956 field school excavations directed by Reynold J. Ruppé. Dr. Tiffany discovered a ceramic rim from a seed jar that had a painted depiction of a bison. This had gone undiscovered for over sixty years and underscores the importance of long-curated collections for new research.

New Repository Shelving

OSA increased its capacity for housing collections by the installation of compact mobile shelving in Room B1. The shelving has a capacity to hold 1,000 cubic feet of collections.

Deaccessioned Collections

The U.S. Army Corps of Engineers Mississippi Valley Division created one of three regional repositories for its collections at the Illinois State Museum Collections and Research Center. OSA packed up and transferred over 1,000 separate collections amounting to 250 cubic feet of Rock Island District Corps of Engineers collections for curation at the regional repository.

81 collections accessioned this fiscal year
7 collections loaned this fiscal year
272,620 total document records
91 percent available digitally

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Research Technology

OSA’s commitment to conducting and disseminating modern high-quality archaeological research requires a major investment in research technology. From maintaining complex databases, to deploying a suite of scientific instruments and equipment, to supporting an array of Internet and other social media, the OSA’s involvement in research technology covers the gamut of twenty-first century breakthroughs in archaeology. In FY 2018 I-SitesPro Mobile was successfully deployed and is now in use by the consulting community in Iowa.

Fiscal Year 2018 Numbers

- **736** newly recorded sites
- **29,850** total sites recorded in Iowa
- **238** data searches
- **328** registered I-SitePro users
- **$120,890** in research technology fees

Iowa Site File

Most archaeological sites are recorded in the Iowa Site File as a result of cultural resource surveys conducted by professional archaeologists. Some, however, are reported by landowners, avocational archaeologists, and other non-professionals.

Field and Laboratory Technology

Many of OSA’s research endeavors require the use of highly specialized scientific technology in both the field and laboratory setting.

Website and App Development

During FY 2018 the OSA maintained several websites and apps focused on archaeology and heritage preservation, including ancient trails in Iowa, the Paleocultural Research Group of Colorado, and the Iowa Blood Run Cultural Landscape Master Plan. The OSA continued its management of the Plains Anthropological Conference, the Midwest Archaeological Conference, I-SitesPro, I-Sites Public, I-SitesGov and BloodRunNHL portals.
Iowa Site File

Most archaeological sites are recorded in the Iowa Site File (ISF) as a result of cultural resource surveys conducted by professional archaeologists. Some, however, are reported by landowners, avocational archaeologists, and other non-professionals.

Each archaeological site recorded in the ISF contains information in a relational database and their locations are stored in a geographic information system database. Revenue generated from site searches and I-SitesPro (see below) license fees help to offset program costs to maintain the system.

I-SitesPublic Access

Information from the ISF is also provided on the World Wide Web. The I-SitesPublic Internet map server (archaeology.uiowa.edu/i-sites) provides users with access to maps of all 99 Iowa counties showing the locations of Public Land Survey System square-mile sections where archaeological sites have been recorded.

I-SitesGov

I-SitesGov, intended for use by non-archaeologists, is a low-cost fee-based website with mobile applicability that provides quarter-section location of archaeological sites to aid in government, state, and local planning. To learn more about I-SitesGov and how to obtain a license, contact the Site Records Manager (319-384-0735).

I-SitesPro

This password-protected website (www.iowaisites.com) provides qualified professional archaeologists and their staff with access to more detailed data on archaeological sites and related information from OSA’s archives. This level of access includes recorded archaeological site locations and previously archaeologically surveyed areas.

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Field and Laboratory Technology

Many of OSA’s research endeavors require the use of highly specialized scientific technology in both the field and lab. In addition to high-powered research microscopes and other equipment, the following devices were exploited in FY 2018 to assist a wide range of research activities.

Global Positioning System

The OSA uses a variety of global positioning system (GPS) units including the Trimble Juno SB with a locational accuracy of ±1.5 meters and the Spectra Precision Mobile Mapper 120 with an accuracy of ±0.5 m. The Mobile Mapper 120 unit’s data can be post-processed for an improved ±10-20 cm accuracy.

Robotic Direct Aiming Total Station

In 2018 the OSA continued to utilize the Topcon DS-205AC direct aiming total station—a motorized total station with automatic aiming technology designed to be operated by one person with a rover prism. Survey accuracies are on the order of ±2 mm.

Drone for Archaeology

The OSA currently has two quadcopter drones: a 3DR Solo and a DJI Phantom 3. These drones can be equipped with GoPro or FLIR thermal cameras able to capture surface and below surface data. During the fiscal year, data was collected from Pilot Rock and Kingsley Bend Mound Group (see Digital Archaeology page). The data from the sites are being used to create and view high-resolution 2D and 3D models in Pix4D, a cloud and desktop processing software.

3D Scanning and Printing

OSA’s NextEngine 3D Laser Scanner uses multi-laser scanning technology to create a 3D surface models and reproductions. The Scan Studio HD Pro software produces a textured model suitable for analysis and 3D printing. The image above is a 3D model of a historic Euroamerican cranium from the UI Stanford Collection (see Bioarchaeology page). Examples of 3D scanned models of artifacts can be viewed on Sketchfab.
Bioarchaeology

Through its Bioarchaeology Program, the OSA continues to work closely with Native American tribes that trace their heritage to Iowa, with landowners who serve as site stewards, and with local, state, and federal agencies to see to the protection of ancient burial sites and human remains throughout the state. The following is a summary of the projects we were involved in this past year.

### UI Stanford Collection Research and Documentation

Three students, Alexis Williams, Phyllis Brower, and Kaitlyn Walker worked through fall and spring semesters, as well as in the summer, doing osteological documentation of individuals in the UI Stanford Collection. Together they created osteological profiles for a total of **94 individuals**.

We also hosted one visiting researcher, Britta Weitzel, a graduate student from North Carolina State University, who is comparing the accuracy of two different softwares used to estimate sex using metric measurements of the os coxae.

### 3D Documentation of Ancient Human Remains

This fiscal year we also made great strides in 3D documentation of the OSA’s collection of ancient human remains. Volunteers Katey Kelly, Melissa Hamilton, Jenna Hentrich, Deb Kotto, Connie Cherba, Patty Pochocki and Spencer Silver completed image processing for a total of **135 skeletal elements**.

With a Staff Excellence Award, software was also purchased for geometric morphometric analysis of crania in the OSA’s collections. Lara will be conducting research to both report on inter- and intra-observer error of the method, and to try to determine cultural affiliation of Native American individuals with limited provenience.

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Iowa counties represented in FY 2018  44
Ancient burial site investigations/reports  41
Consulatation for development projects  29
Inadvertent discovery investigations  10
Reburials (Euroamerican + Native American)  4
NAGPRA Notices of Inventory submitted  3

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Strategic Initiatives

The OSA provides resources and opportunities that encourage the understanding, appreciation, and stewardship of Iowa’s archaeological past. Events took place in 46 Iowa counties reaching nearly **43,000 people**.

### Exploring Iowa Archaeology in the K–12 Classroom

The OSA develops and presents a variety of activities for K–12 audiences that are interdisciplinary, inquiry-based, hands-on, and based on current classroom content and teacher needs. OSA’s success keeps it busy collaborating with archaeology education leaders across the nation.

### Bringing Archaeology to Iowa Communities

Project AWARE and the Meskwaki Powwow are just some of the events and programs that engaged thousands of Iowans this past year.

### UI Mobile Museum

The OSA is part of a collaborative team with the Office of the Vice President for Research and Economic Development and the Pentacrest Museums for the development and administration of the UI Mobile Museum, its exhibits, and resources for educators.

### Iowa Archaeology on Social Media

In addition to the OSA webpage, Iowa Archaeology social media accounts bring the archaeology of our community to tens of thousands of people across the world.

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community/Public Presentations</td>
<td>2557</td>
</tr>
<tr>
<td>Special Interest/Private Lectures</td>
<td>247</td>
</tr>
<tr>
<td>K-12 Presentations/Tours</td>
<td>834</td>
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<tr>
<td>Higher Education Lectures/Workshops</td>
<td>106</td>
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<tr>
<td>Professional Conferences</td>
<td>800</td>
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<tr>
<td>Exhibit Booth or Outreach Tent</td>
<td>1555</td>
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<tr>
<td>Mobile Museum</td>
<td>36,756</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42,855</strong></td>
</tr>
</tbody>
</table>
Exploring Iowa Archaeology in the K–12 Classroom

A total of 834 K–12 students in eight Iowa counties and Utah participated in archaeology presentations, activities, tours, and field trips with OSA staff. Many of these presentations involved, Exploring Iowa Archaeology in the K–12 Classroom activities. This program is awarded with the Governor’s STEM Advisory Council Seal of Approval. OSA staff reached over 2,000 additional K–12 students through educational resources, including archaeology Discovery Trunks and curricula used by teachers across the state.

The U.S. Bureau of Land Management’s Project Archaeology, a national archaeological and heritage education program active in 42 states and the District of Columbia, continues to be an integral part of OSA’s education and outreach activities. Last August, OSA’s Director of Strategic Initiatives, Elizabeth Reetz, participated in a Project Archaeology “Investigating Nutrition” Leadership Legacy Institute at the Oriental Institute in Chicago. In June, she traveled to Bears Ears National Monument near Blanding, Utah, to participate in an archaeology Girl Scout camp organized by Project Archaeology and Southern Utah University. This camp included participants from the Navajo Nation, Ute Indian Tribe, USDA Forest Service, and Utah State Parks.

Last year, OSA was awarded a grant through the Department of Natural Resources Resource Enhancement and Protection Conservation Education Program (REAP-CEP) to create a full-day curricular unit on archaeology for the University of Iowa Recreational Services’ School of the Wild Program. Each school year, over 1,100 students and teachers learned about human interaction with the land through scientific inquiry, focused on simple shelter building, a Meskwaki wickiup, and the ruins of a historical farmstead at the Macbride Nature Recreation Area. This continues to be a strong component of the School of the Wild program, and OSA staff helped students from Tate High School to create a second wickiup frame as a service learning project.

Beyond the classroom, the OSA has been promoting Iowa’s education program successes and contributing to the field of archaeology education on a national level. In October, Elizabeth, who serves on the Project Archaeology leadership team member, traveled to Bozeman, Montana, for the leadership team’s biennial meeting. Elizabeth also presented on archaeology education at the Society for American Archaeology (SAA) annual meeting, and serves as the SAA’s Public Education Committee chairperson. OSA archaeologist, Chérie Haury-Artz, presented at the 75th Plains Anthropological Conference on her partnership with Iowa Lakeside Lab the past three years to teach archaeology through “Iowa in the Time of Shakespeare.” Together, Elizabeth and Chérie, along with School of the Wild staff, drafted a book chapter on the integration of archaeology and environmental education at School of the Wild, for a future publication about creative ways to promote archaeological stewardship.
Bringing Archaeology to Iowa Communities

OSA staff reached over **4,300 people** in **24 Iowa counties**, Wisconsin, Illinois, and Nebraska this past fiscal year to give public community presentations and private lectures or staff an exhibit table or outreach tent. An additional **22 counties** were reached through archaeology outreach via the **UI Mobile Museum**. The OSA provided programming and assistance to educational, historical, cultural, environmental, community, and tribal organizations statewide, including but not limited to: the UI, Iowa Archeological Society (IAS), Iowa Department of Natural Resources, Meskwaki Nation, Ho-Chunk Nation, and several Iowa county conservation boards.

**Project Aware**

The OSA participated in the 15th annual Project AWARE, sponsored by the Iowa DNR. Project AWARE (A Watershed and River Expedition) took place on the upper Cedar River in Floyd and Mitchell counties from July 10-14, 2017. OSA Staff Chérie Haury-Artz and Elizabeth Reetz were “resident archaeologists” for the week. They were joined by archaeologist Joe Artz, as well as several Iowa Archeological Society members. Over the course of five days, **28 tons** of trash were removed from a 55-mile stretch of river including: 368 tires, 14.9 tons of scrap metal, 2.5 tons of recyclables, and 3.3 tons of trash. OSA gave an archaeological preview of each day’s route during the morning announcements, which included about 50 previously recorded sites within 100 meters of the river banks. During the longest paddle day of 17.5 miles, paddlers passed 19 recorded archaeological sites. OSA also taught campers how to throw spears with an atlatl.

**The 103rd Annual Meskwaki Powwow**

The Meskwaki Annual Powwow is one of OSA’s biggest community events each year, and OSA has partnered with the Meskwaki Tribal Museum to exhibit at the Powwow for over a decade. This year, the archaeology outreach booth reached about **800 Powwow visitors** who viewed the archaeological timeline display, played traditional toys and games, received temporary tattoos, and talked with staff about archaeology and Iowa history. OSA staff returned to the Meskwaki Settlement two more times this past year, to attend the Meskwaki Art Symposium, *We we ni to tti ki*, and the Great Lakes Intertribal Food Summit.

**Aerial Reconnaissance Training for Heritage Preservation**

This past year, the OSA Strategic Initiatives and Research Technology programs partnered to give three workshops or presentations to Wisconsin tribes and agency professionals on drone technology. OSA ran a full-day workshop in Wisconsin Dells, sponsored by the Ho-Chunk Nation, including indoor background sessions and an outdoor practicum at the **Kingsley Bend Mound Group**. Staff also presented at the Wisconsin Tribal Transportation Conference and Tribal Historic Preservation Project Annual Listening Session.

**Engaging with the Interested Public through Heritage Preservation Organizations**

The OSA continues to foster strong relationships with heritage preservation organizations across the state. A long-standing partnership with the Iowa Archeological Society (IAS) helps OSA connect with Iowans, particularly in rural regions, who have a special interest in archaeology. OSA staff members serve on the IAS Board of Directors, attend and present at the spring and fall meetings, and contribute to both the annual *Journal of the Iowa Archaeological Society* and the quarterly *Newsletter of the Iowa Archeological Society*. The IAS makes a generous annual contribution to the OSA to help fund education and outreach activities across the state.

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UI Mobile Museum

The OSA is part of a collaborative team with the UI’s Office of the Vice President for Research and Economic Development and the Pentacrest Museums for the development and administration of the UI Mobile Museum. The Mobile Museum has new exhibits each calendar year, which are open to the public from April 1 through October 31. OSA contributions to the Mobile Museum in 2017 included the development of exhibits, Oneota Archaeological Connections and Delving Deep. 36,846 visitors in 34 counties across Iowa viewed these exhibits, which traveled until October 31. OSA educators compiled exhibit-related lessons for Oneota Archaeological Connections and Delving Deep in 2017 for teachers across Iowa to further engage their students before, during, and after Mobile Museum visits.

The OSA worked with partners across campus to on two exhibits for the 2018 calendar year: Wild Iowa: Awareness, Appreciation, and Action and A Matter of Scales: Pangolins in Peril. As an added component to engage students before their visit, OSA created a video to introduce the Mobile Museum for classroom teachers. From April 1 through the end of FY 2017, the 2018 Mobile Museum exhibits traveled to 18 counties. In addition to OSA and Pentacrest staff, the Mobile Museum employed a coordinator, assistant coordinator, three student docents, and a Museum Studies intern.

By assisting as Mobile Museum educators in FY 2017, OSA staff reached an additional 36,756 Iowans, bringing the total OSA face-to-face interactions with a public audience to 42,855 people.
The education and outreach content on the OSA website remained a vigorous, interactive conduit between the public and the OSA. The OSA’s social media pages were an important venue for disseminating news and program information in FY 2018. Active social media platforms administered by the OSA include Facebook, Twitter, Tumblr, Instagram, and YouTube.

The number of unique Facebook users who actively engaged with content through likes, comments, shares, or clicks averaged 229 per post. A sum of the total daily number of people who viewed content associated with the page for FY 2017 equals 592,591, which is a 176,696 increase from FY 2016!

The most popular Facebook posts were weekly photograph features. The most popular post, a small arrowhead from the Blood Run site, was served to a total of 22,951 people, with 3,678 unique engaged users, 230 likes, and 34,367 total impressions, demonstrating the platform’s powerful potential in terms of engagement and outreach.

Over the course of the fiscal year, impressions (the number of times a Twitter user saw an Iowa Archaeology tweet) totaled 53,400, with an average of 146 impressions per day. The most engaging tweet, seen by 2,648 people, was part of a social media #museumsnowballfight.

Videos uploaded to the Iowa Archaeology YouTube channel generated 4,655 unique views in FY 2018. The channel gained 84 new subscribers. The most popular Iowa Archaeology videos are from the Ancient Iowa Film Series produced by former State Archaeologist Marshall McKusick in the 1970s.