**Online Resources for Colorado Archaeology and Historic Preservation (ORCA)**

**Revenue and Sustainability Model**
(January  2018)

The internet has fundamentally altered the ways archaeologists disseminate their research findings and interact with one another and with the public. Archaeologists increasingly are turning to online archives and databases to store and access the growing cascade of analytic datasets, technical reports, and peer-reviewed publications. Online books and journals are becoming more common and more important for disseminating research results. Archaeologists also are making greater use of the collaborative possibilities that digital platforms provide.

The internet is equally important for broadcasting the value of archaeology and historic preservation to a wide audience. Professionals increasingly use websites to communicate research results to the public. Educators rely on digital resources for lesson plans and background materials. Avocationals and students commonly use internet resources to learn about the past and to find opportunities to participate in research and preservation projects.

Online Resources for Colorado Archaeology and Historic Preservation (ORCA) is a new platform for archaeological research, cultural resources management, and heritage education. Available at [www.archaeologycolorado.org](www.archaeologycolorado.org), the site is an open-access collection of resources and tools designed for use by professionals, avocationals, students, and educators. The site includes a reference library, new scholarly content, links to a wide variety of online resources, and tools for communication and collaboration. ORCA resources cover a broad range of topics and cultural periods, from the region's earliest American Indian inhabitants to recent traders and settlers. Also included are resources covering the region's ancient and modern climate and environment.

## Stakeholders

ORCA is designed for a wide variety of users. Contributions to the site's online journal are primarily written by and for professionals, as are most documents in the ORCA research library. However, nearly all ORCA resources are accessible to all users and many resources are designed for use by a broad audience.

Federal and state agency archaeologists can use ORCA resources to make sound National Register of Historic Places eligibility determinations, to design long-term preservation programs, and to evaluate compliance reports produced by consulting firms. Principal investigators and project archaeologists can use ORCA resources to develop research designs and survey strategies or to prepare background sections for project reports. Archaeologists new to Colorado can use ORCA resources to learn about the region or to find information about specific site or artifact types. College or university faculty can use ORCA to introduce their students to the state's varied archaeological record. Avocational archaeologists can use ORCA to learn about ongoing research projects or about current interpretations of the state's archaeological record. Public school educators can use ORCA to find archaeology education curricula and teaching resources. Continued development of the ORCA site will incorporate resources aimed at each of these stakeholder groups.

## Design Principles

ORCA is committed to open access principles (Budapest Open Access Initiative 2017), within the limits imposed by ethical and legal restrictions on the disclosure of confidential archaeological

site location data. To the maximum extent possible, all ORCA resources are freely accessible to anyone with an internet connection. Users may view, download, or print ORCA library resources, current research articles, datasets, or contributions to *Reviews in Colorado Archaeology* (*RCA*). PCRG obtains permission from copyright holders to post library resources. PCRG holds copyright to *RCA* contributions and current research articles to assure the integrity of published works and to secure authors' rights to be properly cited. Resources in the ORCA library that contain confidential site information are available only to professional users.

ORCA is committed to broad representation of themes, topics, and cultural periods, including resources related to both the American Indian and Euroamerican occupation of Colorado. ORCA also includes relevant resources on ancient and modern climate and environment and on faunal, botanical, and geological resources in the state. However, ORCA is not a general repository for all documents related to Colorado archaeology and historic preservation and is not meant to replace online archives such as The Digital Archaeological Record.

ORCA is committed to the highest scholarly standards. All contributions to *RCA* receive double-blind peer review. Documents in the research library are selected in consultation with professionals currently working in the state. Professionals familiar with archaeology education and public archaeology participate in the compilation of resources for avocationals, students, and educators.

### Core Components

ORCA comprises seven core components, including a research library, an online journal, a compilation of research links, a collection of documents and online resources for educators, students, and avocationals, a user forum, a current research section, and a datasets section.

The **research library** is a collection of technical reports, theses, articles, book chapters, National Register nominations, and other documents. The library's holdings primarily fall into one of two groups: documents published after 1999—

when the Colorado Council of Professional Archaeologists' prehistoric context documents were published—and key legacy documents. Legacy documents include frequently cited but difficult-to-obtain resources, important early articles, and documents that represent the only available work on a site or topic. The ORCA research library does not generally include documents that describe the results of block surveys or testing projects primarily designed to evaluate National Register eligibility status. The library also does not generally include chapters of lengthy technical reports that cover regional culture history, research design, methods, or site descriptions. Instead, the library primarily includes summary or synthetic chapters of such works. Internet links to the complete reports are provided when available. Paleocultural Research Group obtains copyright permission to post all library resources on the ORCA website, apart from those already in the public domain. In some cases, citation-only records are created for important resources for which copyright permission cannot be obtained.

*Reviews in Colorado Archaeology* is an open-access, refereed journal that publishes authoritative and critical syntheses, reviews, thematic studies, and methodological primers. *RCA* also periodically publishes book-length contributions. Those "special publications" are numbered separately but otherwise follow the editorial standards and review processes applied to article-length contributions. The journal is available without charge or restriction. Articles are published online as they become available. After each annual volume closes, a PDF file of the complete volume is available for download. Users may obtain printed copies from third-party print-on-demand vendors. Authors are encouraged to incorporate appropriate supplementary data, including datasets, images, or supporting documents.

The **forum** is an interactive platform for information exchange and community building. Participants can use the forum to get answers from the community about field or lab methods, to get help identifying artifacts or features, to share ideas and discuss archaeological problems, or to find colleagues with similar interests. Users may also make non-commercial announcements about

conferences, publications, or volunteer fieldwork opportunities. The forum is open to all registered users, including professional archaeologists, avocationals, educators, and students.

The **links** page is a compilation of online research and education resources for professionals, avocationals, and students. Included are URLs for a wide variety of historic preservation organizations, archaeology blogs and non-technical articles, artifact analysis sites, and database sites.

ORCA's **resources for educators, students, and avocationals** offers a wide variety of online and offline resources, including non-technical overviews of regional archaeology, information about archaeology education, and resources for undergraduate and graduate anthropology students. Resources for avocational archaeologists also are provided, including manuals, guides, and training resources and lists of current volunteer opportunities.

ORCA's **current research** section publishes brief synopses of completed or ongoing archaeological research or compliance projects. The section is designed to increase professional and public awareness of the work archaeologists are currently conducting in Colorado and surrounding regions. Eligible projects include field investigations, lab analyses, or collections studies.

ORCA's **data** section is a venue for distributing digital archaeological and archival data. Datasets can include narrative, tabular, or image data. Only general site location data are provided. ORCA obtains permission to post all datasets, apart from those already in the public domain.

## Initial Development

Major funding for the initial development of the ORCA website was provided by a History Colorado – State Historical Fund grant awarded to Paleocultural Research Group (PCRG) (No. 2015-M2-011). Additional funding was provided by the Colorado Council of Professional Archaeologists, the Colorado Archaeological Society, Metcalf Archaeological Consultants, Inc., Alpine Archaeological Consultants, Inc., the U.S. Fish and Wildlife Service, the University of Colorado, and anonymous donors.

## Ongoing Management

ORCA is managed by PCRG, a 501[c][3] nonprofit organization that conducts scientific research, trains students, and educates the public on the archaeology of the Great Plains and Rocky Mountains. Ongoing management of ORCA fulfills an important element of PCRG's mission, which is to raise public and professional awareness of Plains and Rocky Mountains archaeology and to foster preservation of the unmatched archaeological resources those regions contain.

## Medium- and Long-Term Development and Management

PCRG is committed to continuing management and development of ORCA. The funding needed for management and development can be estimated in several ways. Minimum annual management expenses include site hosting, periodic page corrections and updates, acquisition of copyright permission for new library resources, and editorial and production services for new *RCA* and current research contributions (table 1). Additional funding would be needed for larger-scale development that could include user outreach and significant expansion of library holdings and other resources (table 2). Eventually, major site modifications will be needed that will require outside consultants and programmers.

Estimated annual costs range from approximately $12,000 to $26,000. These figures do not include costs for major site modifications, which would vary depending on the type and extent of modifications planned. No major site modifications are planned for the next two years.

## Sustainability Options

Maron (2014), Guthrie, Griffiths, and Maron (2008), and Crow and Goldstein (2003) discuss and evaluate a variety of funding models for developing and managing nonprofit online platforms. Some models are not applicable to the content of the ORCA site, such as consulting fees, while others, such as subscriptions or pay-per-use fees, are not compatible with ORCA's open-access format. Table 3 lists the revenue models discussed

Table 1. Estimated minimum annual costs for ORCA development and management.

| Item | Annual Cost | Note |
|---|---|---|
| Hosting Services | $2,400.00 | Includes routine site maintenance |
| Content Management | $2,560.00 | Copyright permission, page updates |
| RCA Editor | $4,500.00 | Solicit manuscripts, manage review process, copy edit; $900/ms. |
| RCA Production | $2,560.00 | Manage graphics and data, produce galleys; $512/ms. |
| Total | $12,020.00 | |


Table 2. Estimated annual costs for fully operational ORCA development and management.

| Item | Annual Cost | Note |
|---|---|---|
| Hosting Services | $2,400.00 | Includes routine site maintenance |
| Content Management | $6,400.00 | Copyright permission, page updates |
| RCA Editor | $7,200.00 | Solicit manuscripts, manage review process, copy edit; $900/ms. |
| RCA Production | $4,096.00 | Manage graphics and data, produce galleys; $512/ms. |
| Outreach | $3,840.00 | Meetings, email, social media |
| Outreach Travel | $2,500.00 | Meeting attendance and travel |
| Total | $26,436.00 | |


Table 3. Value assessment framework revenue models (Maron 2014) and their applicability to ORCA.

| Revenue Model | Potentially Applicable to ORCA? | Compatible with Open Access Principles? | Comment |
|---|---|---|---|
| Advertising | Y | Y | Revenue may be limited; requires site changes |
| Contributor Payment | Y | Y | Would discourage new content creation |
| Consulting and Services | N | N | Not relevant to ORCA |
| Corporate Sponsorship | Y | Y | Revenue may be limited |
| Freemium Models | Y | N | Only partly compatible with open access |
| Host Institution Support | N | Y | Only short-term internal funding available |
| Membership Models | Y | N | Not compatible with open access |
| Licensing of Content | N | N | Not relevant to ORCA |
| Purchase or Pay-Per-Use | Y | N | Not compatible with open access |
| Philanthropy | Y | Y | Grant sources may be limited |
| Subscriptions | Y | N | Not compatible with open access |


in Maron's (2014) value assessment framework and evaluates their suitability for the ORCA site.

Among the 11 models in the framework, seven are either not applicable to ORCA or not compatible with open-access principles. Just three of the remaining four meet the basic requirements of continued site development. The fourth, contributor payment, would discourage authors from contributing new content.

The practicality of the three viable models—advertising, corporate or agency sponsorship, and philanthropy—varies significantly. A significant modification of the site's design would be required to incorporate advertising. ORCA's user community is likely to remain small and relatively specialized and so advertising revenue is likely to be low.

Staff time needed to generate corporate, agency, or society sponsorship may be relatively low. However, sources of such funds likely are limited and the total revenue possible from such sources likely will remain small. Philanthropy, primary

in the form of grant funding, may provide more revenue. However, significant staff time may be required to prepare grant applications. In addition, the number of different sources may be limited.

Given the limitations of each of these models, it is likely that all three in combination will be required to secure stable long-term funding for ORCA management and continued development.

## References Cited

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## Appendix

The following sections are taken from Maron (2014) and provide additional information on the three funding sources considered suitable for ORCA management and development.

Advertising

Benefits:
- For sites with heavy traffic and good data on visitors, advertising can open up an as-yet-untapped revenue source
- Smaller sites can test their earning potential at very little risk through options like Google AdSense
- The variety of ad formats, types, and pricing models allows a site to experiment with advertising to learn what type will fit it best
- More and more advertiser money is flowing online each year, so if advertisers decide that advertising online with your project is rewarding to them, this revenue stream should continue to grow

Disadvantages:
- Academic projects with smaller audiences may find it difficult to generate significant advertising income
- Securing and retaining advertisers requires skilled personnel and time
- Some site users may dislike the feel of ads on the site
- Setting ad prices can be tricky when measurement criteria are so fluid
- Ad revenue is not guaranteed and takes time to build up; it is unlikely to replace other revenue streams right away
- If a site becomes overly dependent on advertising, the editorial integrity of the project can be undermined

Costs Attributable to the Advertising Model:
- If a project seeking advertisers works with an agency or network, this additional party will receive a percentage of advertising revenues as its commission (30% is common)
- If a project works directly with advertisers, costs will include salary for skilled online advertising sales staff and for someone to handle invoicing/collections

- If the project is accepting native advertisements, in addition to sales and invoicing staff it will need someone to be involved in the ad production cycle

Key Questions to Ask When Considering Advertising:
- How much traffic does our site generate (unique visitors per month)?
- How many ad impressions could our site generate (page views per month)?
- How much do I know about the visitors to our site (demographic data)?
- How can I measure users' engagement with our site (time spent, articles viewed, etc.)?
- How might visitors to our site be valuable to advertisers? Do they have special interests that correspond to a certain type of business?
- What costs will we need to assume to host ads on our site and collect payments?
- Will the community for this project accept that we are hosting ads?
- How might an advertiser fit in content on our resource?

Corporate, Agency, or Society Sponsorship

Benefits:
- This model offers non-profit projects an opportunity to monetise an intangible source of value, whether audience or their reputation
- Corporate sponsors sometimes agree to in-kind exchanges of value, such as expertise or deeply discounted hardware or software
- Corporate sponsorship can serve as a sort of controlled experiment for other types of advertising, a way to test the waters with regard to accepting advertising on the website

Disadvantages:
- Corporate sponsorships can arouse suspicions or negative perceptions within the academic community if the corporate identity is not a good fit with the project's mission
- Sponsorship could lead to mission drift, if the corporate sponsor asks to have a say in the ongoing operations of the project in exchange for its contributions
- Corporate priorities can change; sponsorship by a particular company is not necessarily a long-term solution

- Recruiting, setting up, and implementing sponsorships can be complicated, involving business development time and legal issues

Costs Attributable to the Sponsorship Model:
- Time investment to identify and research suitable targets and to define a clear pitch
- Business development costs and legal costs of negotiating agreements

Key Questions to Ask When Considering Sponsorship:
- Do the goals of my project and the goals of the corporation complement each other?
- Is my work likely to be particularly attractive to certain companies or industries?
- Does the company we are considering approaching engage in any activities that are at odds with the mission or ethos of our organization?
- Will the company place undue restrictions on our activities or otherwise interfere with our operations?
- Is there a good fit between the customers served by the company and the audiences for our initiative?
- Does the company have a positive brand image in the community served by my project?
- Does the company have a strong commitment to helping the community served by my project?

Philanthropy

Key Issues to Address When Considering Philanthropy:
- Structure a project in stages. Funders of digital ideas most often seek to invest in new creations or innovative approaches, not to sustain a project already built. How can the long-term structure of the activity be conceived in a way that new phases of growth are organic to the project and not just tacked on, in an effort to secure a new round of funding, when the current round is coming to a close?
- Consider the funder a type of customer. Giving away money effectively and in ways that have positive impact on a community is very challenging. Well-framed plans will take the funder's mission and grant making objectives into account. Such projects will also provide clear arguments for how their proposed activities will help the grant maker achieve its objectives (not just how the foundation's money can help the grantee achieve its objectives!).
- Think beyond the grant, even before the grant. In seeking grant funding, a sort of 'contest culture' tends to prevail, where winning a grant becomes the goal. This can have the effect of de-emphasizing the long road ahead. Funders have begun to require that applicants submit data management plans and sustainability plans, as they want to see the impact of the work they support carried into the future and shared broadly.
- Keep in mind that funders may be subject to economic pressures. While some areas, such as scientific research, have weathered difficult economic times, many funders in the humanities and social sciences experience the same financial pressures that are felt in the academic and cultural sectors. Grant seeking is a reasonable activity for projects that are continuing to demonstrate value and to grow. But diversifying the type of grant that is sought (approaching both public and private funders, for example) may be one way to protect against the possibility of a critical revenue stream drying up.