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THE NEW IAHR MEDIA LIBRARY: THE REASONS WHY MOVIES AND PHOTOS INCREASE RESEARCH IMPACT

BY MICHELE MOSSA



The IAHR Media Library (web site: www.iahrmedialibrary.net/) was officially launched on November 15, 2004 and the first files were inserted on February 10, 2005. Many years have passed since the birth of the site and the total number of visitors is now very high. An initiative regarding films of interest to Fluid Mechanics was undertaken in 1976 by the *American Society of Mechanical Engineers-ASME*^[1]. Of course, not having a website in 1976, the *Fluid Mechanics Committee* of the ASME compiled a film catalogue, realizing, however, that many of these films were not widely distributed amongst researchers. To help put these films into the hands of researchers, the creation of an *Engineering Societies Library (ESL)* was proposed in order to obtain, store and distribute these videos. The 1976 ASME paper states that: “Many fluid flow systems involve complex, time dependent, phenomena that are most readily recorded by motion pictures. Over the years a considerable body of such motion pictures has been accumulated by research workers. However, no organized channel for dissemination or location of these often-important data existed prior to 1960. [...] To supplement the catalog and provide greater access to the film list via an

archive journal, the titles currently in the catalog, along with authors, locations, and film type and running time are published here. We hope that additional use of the library might be stimulated, and more films submitted for possible inclusion.”^[1]

The IAHR Media Library represents the evolution of that idea using new systems and social media. Furthermore, a second area of the IAHR Media Library has been devoted to teaching tools in hydraulics (slides of class lectures and seminars, didactic computational software, documentation of appropriate field cases, e-learning tools, e-books and bibliographies).

More recently Khoury et al. observed that “Graphics are becoming increasingly important for scientists to effectively communicate their findings to broad audiences, but most researchers lack expertise in visual media. We suggest collaboration between scientists and graphic designers as a way forward and discuss the results of a pilot project to test this type of collaboration. When we think of groundbreaking scientific advances, it is often in visual terms – the first depictions of the structure of

DNA; Darwin’s sketches of the tree of life; even Da Vinci’s Vitruvian Man. The power of these pictures to speak to people, especially those outside our specialized research communities, is worth far more than a thousand words. Scientists’ need for visual art has never been greater. More sophisticated graphics are required to communicate the results of ever more complex and transdisciplinary research. Well-constructed graphics can widen the impact of research articles striving to be noticed in an ever-increasing flood of published work, and supplementary visuals, for instance graphical abstracts, are often now requested by journals, if not required. Funders are also increasingly emphasizing the value of graphics in grant proposals. Online, where viewers decide whether to engage with material within a matter of seconds, compelling visuals are pivotal, especially as research organizations incorporate social media attention in their impact metrics.

While many researchers are rising to the challenge of communicating their work via social media and other formats beyond their traditional channels, very few scientists have expertise in visual media communications, and even fewer in design tailored for online platforms. Learning the specialized skills needed to create graphics for the changing array of conventional and new science media is a very big ask.

But scientists do not need to go it alone. Collaborations between researchers, graphic designers, and other visual communications professionals offer great potential.”^[2]





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He served as a member of the IAHR council, president of the IAHR Education and Professional Development Section, reviewer as expert in Hydraulics and Oceanography of some international research project grant applications.

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The main topics of his research group are relevant with the Environmental and Maritime Hydraulics. He is authors of many papers and books and he is actively involved in international and Italian research projects. For further details, visit the web site: <http://www.michelemossa.it/en/>

relevant to society. Research societies and journals should support the creation and diffusion of scientific movies. The benefits of collaborations between the authors of papers and the editors and the IAHR Media Library could be fundamental in terms of public outreach and increasing the impact of research.

These are the main reasons why the IAHR Media Library was created. It was launched by the Polytechnic University of Bari (Italy) with the initial support of Fondazione Caripuglia, Bari, Italy, with the Research Project LIC-MON of 2003 and, then, the Project IMCA (Integrated Monitoring of Coastal Areas) financed by the Italian Ministry of University and Research. Later, the initiative was supported with other Professor Michele Mossa's funds, most recently provided by the RITMARE Project and other research projects. Particularly, the RITMARE flagship project (Italian Research for the Sea) is one of the leading national marine research projects for the period 2012-2016; the overall project budget amounts to 250 million euros, co-funded by public and private resources.

Now a new and more appealing web site of the IAHR Media Library has been launched. Apart from the graphic design, the new website technologies are:

- Proprietary PHP code
- PHP with MySQL database
- Powerful internal search engine
- Home page with items listed by categories
- Fully responsive HTML/CSS
- Mobile and tablet compatible
- Registration form to create accounts
- Protected area with password to insert materials

The IAHR Media Library has many innovative characteristics, which the user can explore in

detail when using it. Furthermore, now all the videos are both on a server and on the IAHR Media Library YouTube channel. Therefore, the new solution avoids the access problems to YouTube experienced in the past by users in some countries.

Nevertheless, the real success of technical and scientific products depends on its use by our community.

Examples of the pictures available in the IAHR Media Library are shown in Figures 1 through 4. I would be very glad to boost the activity of the media library. As written, I am sure that many scientific works could be better appreciated inserting movies and photos describing the phenomena that researchers have reported in their scientific papers. We should raise awareness for the library among our members, hoping that more and more people could contribute to it.

Many thanks to the entire editorial board of the IAHR Media Library and those who have contributed to its success, demonstrated by the impressive statistics of users, also through their uploads.

References

[1] ASME, ASME Catalog of Motion Pictures of Research - Data in Fluid Mechanics and Heat Transfer, Journal of Fluids Engineering, Transactions of the ASME, pp. 151-155, 1976.
 [2] Colin K. Khoury, Yael Kisel, Michael Kantar, Ellie Barber, Vincent Ricciardi, Carri Klirs, Leah Kucera, Zia Mehrabi, Nathanael Johnson, Simone Klabin, Álvaro Valiño, Kelsey Nowakowski, Ignasi Bartomeus, Navin Ramankutty, Allison Miller, Meagan Schipanski, Michael A. Gore & Ari Novy in their paper "Science-graphic art partnerships to increase research impact", Communications Biology, vol. 2, Article number: 295, 2019.

- 1 Goulburn weir (Australia) - View from left bank
- 2 Miraflores locks, Panama Canal
- 3 Ski jump investigation with circular-shaped flip buckets in a hydraulic model at VAW (Laboratory of Hydraulics, Hydrology and Glaciology (VAW), Swiss Federal Institute of Technology Zurich, Switzerland
- 4 Waste from a water desalination plant, Kuwait
- 5 Ocean waves in deep water (displayed in the home page of the web site)

Even though the paper cited above mainly refers to visual art and graphics, we can surely extend the authors' conclusions also to movies and pictures. In other words, as the presentation of science moves beyond the traditional static journal article, there is every reason to think that movies and pictures will become even more critical.

It is necessary to recognize the value of movies and pictures in improving the communication of research and the accessibility of results

