

BOARD #145: Forming a Pod: A Naval Architecture, Marine and Ocean Engineering Librarian Community of Practice

Sarah Barbrow, University of Michigan

Sarah Barbrow is a librarian and the Assistant Director of the Engineering Library at the University of Michigan. She is a liaison to three departments: Computer Science and Engineering, Mechanical Engineering, and Naval Architecture and Marine Engineering.

Sarah graduated with an MSI in Library and Information Services from the University of Michigan School of Information. She also has an MSc in Ecology and Evolutionary Biology also from the University of Michigan.

Ms. Kelly Durkin Ruth, United States Naval Academy

Kelly Durkin Ruth is the United States Naval Academy's engineering librarian. She is a recipient of an ATG Media Up and Comers Award and an SLA James M. Matarazzo Rising Star Award. Her work with SLA's Physics-Astronomy-Math division and ASEE's Engineering Libraries Division has led to research projects on the experiences of STEM librarians without STEM degrees and on STEM librarian professional motivations. In 2023 she was named an Institute for Research Design in Librarianship (IRDL) scholar. She received her Master of Information degree from the University of Toronto.

Ms. Amber Janssen, California State University Maritime Academy

Amber Janssen is an Associate Librarian at California State University, Maritime Academy (CSUM). Her research background is in the instruction and assessment of information literacy in undergraduate engineering education and the information behaviors of marine engineers.

Christina Mayberry, University of California San Diego

Christina Mayberry is an engineering librarian at the University of California San Diego where she serves as a subject liaison to the Shu Chien-Gene Lay Department of Bioengineering, Mechanical and Aerospace Engineering Department, and the Structural Engineering Department at the Jacobs School of Engineering.

Dr. Sarah Over, Virginia Tech

Dr. Sarah Over is the Engineering Collections and Research Analyst at Virginia Tech, serving as their Engineering Librarian and representative for their new Patent and Trademark Resource Center. She is also part of a team focused on research impact and intelligence to support the College of Engineering and Office of Research and Innovation at Virginia Tech. Dr. Over's background is in aerospace and nuclear engineering, with years of experience teaching engineering research methods and introductory coding.

Sarah Parker, University of British Columbia, Vancouver

Sarah Parker (she/her/hers) is a reference librarian on Canada's west coast at the University of British Columbia in Vancouver, where she also received her MLIS. As the liaison to several departments in the Faculty of Applied Science including Naval Architecture and Marine Engineering, Sarah provides research support and instruction to undergraduate and graduate students. As an adjunct instructor at UBC's School of Information she brings her knowledge and experience supporting engineering into the classroom encouraging students to consider STEM librarianship.

Forming a Pod: A Naval Architecture, Marine and Ocean Engineering Librarian Community of Practice

Keywords: information professionals, communities of practice, engineering librarians, naval architecture, marine engineering, ocean engineering

Abstract

Naval Architecture, Marine, and Ocean Engineering (NAMOE) programs are unique in that they are specialized, interdisciplinary, and uncommon at both the undergraduate and graduate levels. As a result, librarians or subject specialists who liaise with these areas can encounter a lack of resources and knowledge to support the students and faculty in these programs. A group of librarians who have NAMOE programs as part of their institutions recently started a dedicated group, combining elements of communities of practice and peer group mentoring to discuss how best to support these programs and each other as professionals with varying experience in this subject area. Plans include the development of a resource similar to chapters in Osif's *Using the Engineering Literature*, a crucial source for librarians supporting engineering disciplines that lists a comprehensive, discipline-specific suite of key resources, and enhancing discovery of OER in NAMOE. In this work-in-progress article, in addition to sketching out some of the resources we plan to create and share, we will discuss the formation of this group and reflect on how it has impacted our work. By combining our efforts, we will enhance teaching and research for NAMOE programs, deepen our expertise in NAMOE library services, and present a framework for other specialized librarian communities to follow.

Introduction

Engineering librarians throughout the United States, Canada, and beyond strive to support their patrons, from building collections to developing specialized instruction to helping students and faculty alike succeed. For many engineering disciplines, this process can be fairly straightforward when there is a professional society offering a collection of journals and conference papers plus other resources to turn to. For example, engineers in electronics related disciplines regularly seek out Institute of Electrical and Electronics Engineers (IEEE) resources, making this resource key for librarians supporting these fields. In contrast, more specialized programs offered at only a few schools tend to not have these “juggernaut” professional societies with myriad publications, standards, and more. Some engineering fields with fewer than 20 academic programs across the United States include: Fire Protection Engineering, Marine Engineering, Naval Architecture, Ocean Engineering, and Optical Engineering.

A group of engineering librarians with Naval Architecture, Marine, and/or Ocean Engineering (NAMOE) programs at their institutions decided after the ASEE 2024 conference to come together to discuss and support one another in a Community of Practice (CoP, i.e. our pod of librarians). This NAMOE CoP has met regularly throughout the fall of 2024 discussing how to fill the gaps in resources and knowledge needed to support NAMOE students and faculty effectively. Regarding resources, our group has already started to share databases and other sources of information in NAMOE fields. We have longer-term plans to collaboratively develop a resource similar to chapters in Osif’s *Using the Engineering Literature* [1], a critical reference tool for engineering librarians. Our pod has also discussed other ideas, such as how to enable discovery of NAMOE related Open Educational Resources (OER). Although some members of this group have at least one engineering degree or engineering work experience, none are in NAMOE disciplines, with the closest backgrounds being in aerospace, environmental, or nuclear engineering (knowledge of fluid mechanics, water resources, and nuclear submarines). We plan to close the gap in our NAMOE knowledge with development of the resources and other work our CoP completes.

In this article, in addition to sketching out some of the resources we plan to create and share, we discuss the formation of the group and reflect on how it has impacted our work. By combining our efforts, we will enhance teaching and research for NAMOE programs, deepen our expertise in NAMOE library services, and present a framework for other specialized librarian communities to follow.

Communities of Practice

In librarianship, a shared interest often draws groups together based on subject or liaison expertise. Listservs have always provided a way to keep up to date in the field, share resources, information and skills. Similarly conferences afford groups with a shared practice the opportunity to come together, interact and network. Such activities are an important part of professional development for librarians to build relationships and find ways to collaborate [2]. Communities of Practice (CoP) is a model that offers another venue for professional development while encouraging collegial partnerships. Since the pandemic, virtual meetings increased out of necessity and the need to connect has carried forward as the profession evolved to more hybrid work. Sharing of information virtually that may have once occurred through an email chain or listserv has offered groups the ability to find their community in virtual spaces.

The CoP model has been widely adopted in many sectors since the concept was first introduced in 1991 by anthropologists Lave and Wenger. They define a CoP as a group that comes together to share “a concern or a passion for something they do and learn how to do it better as they interact regularly” [3]. Three core characteristics make up a CoP: 1) They share a domain of interest; 2) They are a community that interact and learn together; and 3) They share a practice [3]. CoPs have some similar characteristics to peer mentorship; however, a peer mentorship requires people with more experience to be paired with a novice [4] while this is not necessarily an attribute for CoPs. The CoP model encourages the group to learn together, they should be learning as a community and by doing so they create a “sense of community” [4]. Reflecting on Wenger’s work, Henrich and Attebury [4] suggest that a sense of community builds further trust which is essential to the group in being able to express new ideas within their group and thus keep momentum within the CoP.

In the library literature there have been many studies reviewing the CoP model in the profession as a way for librarians to “develop and sustain a professional identity” [5]. Reasons for library workers forming CoPs align with Lave and Wenger’s definition. In the regional study that Power and Ha [6] conducted, the survey results provide examples of library workers' showing a keen interest in connecting with others outside of their own institutions. Establishing a regional CoP in Power and Ha’s [6] case fostered relationship building and networking at a particularly challenging time during the COVID-19 pandemic. In that instance library workers ultimately found the CoP to also be an important part of their social network particularly as more people were working from home and feeling isolated. As Bilodeau and Carson [2] note there is a “social aspect of learning” in librarianship and as librarians advance in their careers they become more involved in communities beyond their institution and will readily connect with colleagues outside of their institution, informally building a community. “[T]hese communities can be very valuable sources of learning” [2]. This shared expertise, according to Belzowski, Ladwig & Miller [5] and Spicer [7], encourages collaboration amongst the group members and allows for

reflection on their practice that can spur on new ideas and deepen subject expertise. This is what Belzowski et al. [5] mean when they suggest that a CoP develops and sustains a “professional identity.”

There is no template for CoPs. Each CoP should determine their own goals and objectives that they can then modify as needed (see Miller referenced in [6]). Achievable goals allow the group to learn together while working towards that objective. A structure is required albeit not too formal. Being too “official” can lead to a CoP’s downfall [8]. It should not parallel existing library committees or team work, but instead be its own independent agreed upon structure that the group determines. This may include a set schedule of meetings with voluntary attendance.

CoPs amongst liaison librarians is yet another option for developing subject expertise, participating in professional development activities that enrich professional identity, networking to build relationships, and socializing that can help foster collaborations.

Why NAMOE is a Unique Discipline for Librarians to Support

Two factors that make NAMOE distinctive and therefore particularly complex for librarians to support are the rarity of such programs and the interdisciplinary nature of the work. Accreditation data can provide a baseline glimpse at the uniqueness of NAMOE programs. As of December 2024, ABET lists 16 accredited Naval Architecture and Marine Engineering programs, three Naval Architecture and Marine Engineering Technology programs, and 12 accredited Ocean Engineering programs. In comparison, ABET lists more than 500 accredited mechanical engineering programs. In Canada, the Canadian Engineering Accreditation Board (CEAB) has 2 accredited NAMOE programs with 38 accredited mechanical engineering programs. See Table 1 for a list of ABET and CEAB-accredited programs, their institutions and relevant locations.

These numbers may not tell the whole story as they include some, but not all, existing programs worldwide as not all such programs are accredited by ABET. Some schools, such as the United States Merchant Marine Academy, have multiple programs accredited so the total number of institutions with accredited programs is even smaller than it initially appears.

NAMOE programs’ interdisciplinary nature often results in faculty having backgrounds from disciplines other than naval architecture, marine engineering, and ocean engineering. A scan of three of the authors’ institutions shows that their NAMOE faculty education includes degrees in mechanical and civil engineering, oceanography, aerospace engineering, environmental engineering, and more. Sometimes this overlap results in programs that are run jointly with or under other programs; for example, Virginia Tech (Table 1) has a combined department of aerospace and ocean engineering.

Table 1: ABET and CEAB accredited Naval Architecture and Marine Engineering (NAME), NAME Engineering Technology, and Ocean Engineering Programs as of December 2024.

School Name	Country	Program Name
Arab Academy for Science and Technology and Maritime Transport (Alexandria - Abu Kir)	Egypt	Marine Engineering
California State University Maritime Academy	United States	Marine Engineering Technology
Escuela Superior Politecnica Del Litoral	Ecuador	Naval Engineering
		Oceanographic Engineering
Florida Atlantic University	United States	Ocean Engineering
Florida Institute of Technology	United States	Ocean Engineering
University of Hawaii at Manoa	United States	Ocean and Resources Engineering
Istanbul Technical University	Turkey	Shipbuilding and Ocean Engineering
		Marine Engineering
		Naval Architecture and Marine Engineering
Maine Maritime Academy	United States	Marine Systems Engineering
		Marine Engineering Technology
Massachusetts Institute of Technology	United States	Mechanical and Ocean Engineering (Course 2-OE)
Memorial University	Canada	Ocean and Naval Architecture Engineering

University of British Columbia	Canada	Naval Architecture and Marine Engineering
University of Michigan	United States	Naval Architecture and Marine Engineering
Universidad Nacional de Ingenieria	Peru	Naval Engineering
University of New Hampshire	United States	Ocean Engineering
University of New Orleans	United States	Naval Architecture and Marine Engineering
State University of New York Maritime College	United States	Marine Engineering
	United States	Naval Architecture
The University of Rhode Island	United States	Ocean Engineering
University of Southern Mississippi	United States	Ocean Engineering
Texas A&M University	United States	Ocean Engineering
Texas A&M University at Galveston	United States	Marine Engineering Technology
United States Coast Guard Academy	United States	Naval Architecture and Marine Engineering
United States Merchant Marine Academy	United States	Marine Engineering Systems
		Marine Engineering and Shipyard Management
United States Naval Academy	United States	Naval Architecture and Marine Engineering
		Ocean Engineering
Virginia Polytechnic Institute and State University	United States	Ocean Engineering
Webb Institute	United States	Naval Architecture and Marine Engineering

Building the NAMOE Community of Practice

The idea for this community emerged from an informal conversation between two librarians at the 2024 ASEE annual conference in Portland, Oregon. One librarian had recently taken on NAMOE as a liaison area at a large research-intensive university with no prior experience with the discipline, and the other, working at a smaller institution and knowing that there are few librarians with NAMOE department responsibilities, wished for an opportunity to discuss supporting NAMOE faculty and students with other colleagues. Both librarians saw an opportunity to create both a professional network through which we could learn with and from each other as well as compile a NAMOE “greatest hits” list of important and useful resources that would enable us to better support our individual institutional communities and allowing other librarians in our position to do the same.

In July 2024, the two librarians put out a call for participation on a professional organization’s listserv and quickly received enthusiastic responses from interested engineering librarians who understood the need for a focused venue in which to ask questions and learn new information from a specialized group.

The NAMOE CoP began meeting in the fall of 2024. After an introductory meeting, the group established an initial goal of learning more about the NAMOE field and what resources are used and needed by students, faculty and researchers in it. Although still in a nascent phase at the time of writing this paper in January 2025, group members have begun creating a flexible structure for networking and collaboration. Since its initial meeting, the group has connected online monthly with a voluntary “come when you can” structure and started compiling a draft list of key resources with an eye toward publishing the final product as a reference for all librarians supporting the discipline.

The CoP pod includes librarians from Canada and the United States, and consists predominantly of librarians working for nine different organizations (and growing) of academic institutions plus two librarians working outside of academia. The academic institutions include larger Carnegie R1 universities, a military academy, and teaching-focused institutions all offering NAMOE programs at the undergraduate level (some even doctorate-granting). The CoP model is a good fit for this group of librarians because they share a domain (NAMOE), have a desire to interact and develop their subject expertise, and all practice librarianship. Additionally, given how few NAMOE programs, and even fewer such librarians, exist, a lack of support and feelings of isolation at their local institutions motivated the members to seek community from the broader field of engineering librarianship.

Our Work So Far

As mentioned above, CoPs work well when self-determining their approaches to achieving their goals. Our group has decided to meet roughly monthly on zoom, and to specifically hold space in our agendas to share resources, ask questions, and touch base on longer term projects of use to the engineering community. We take a flexible approach in that our agendas are roughly similar from meeting to meeting, but there is always room for improvisation and re-prioritization of discussion points. Though we work hard to schedule meetings at times when all can participate, attendance is not mandatory to be involved with the group.

Even within the first few months of our work together, we are finding value in connecting. We have shared information with each other about new or generally important resources unique to these disciplines, including particular book series, codes and standards, and data vendors. We have surfaced questions, particularly around some hard-to-track-down interlibrary loan requests, and worked through some strategies to address these together. We have shared collection development policies and practices. As the sole librarians on our campuses and in our institutions supporting NAMOE, it is a relief to connect with colleagues in this group grappling with similar issues.

As noted above, our NAMOE CoP is collaboratively working on a resource that will be our first big project together. This resource will be modeled off of the format of chapters in Osif's *Using the Engineering Literature* [1], and include key section headings such as Databases, Bibliographies, Encyclopedias and Dictionaries, Handbooks and Manuals, Journals, Standards, Patents, Technical Reports, Data, Trade Publications, and many more. We do not anticipate that Osif or others will publish a third edition of *Using the Engineering Literature*, so we may publish this resource as a standalone piece with an eye towards open access. Developing this resource will not only support our own learning, as the process of making it will build our knowledge and expertise, but it will also support any librarian liaising with a NAMOE field in any capacity. We hope people who perhaps only infrequently need to support a NAMOE patron will find it a useful portal into the NAMOE literature and other resources.

Sailing Ahead: Hopes and Dreams for Our Pod

Not everyone has the bandwidth to join yet another committee; folks are already strapped for time and attention. Moreover, not everyone with liaison responsibilities for NAMOE scholarship can regard supporting the NAMOE academic discipline as a work priority. Given this context, and with our plans to communicate about and from our NAMOE pod, we hope to be a resource to librarians and information professionals with ties to naval architecture, marine, and ocean engineering fields broadly. As a CoP the NAMOE pod allows flexibility in when and how we

meet with voluntary attendance. This can hopefully alleviate some of the time pressures members might feel to be part of the group.

We dream of being a welcoming pod. In addition to developing a resource described above, geared towards supporting librarians who infrequently, but no less importantly, have NAMOE information needs, the CoP have discussed other ideas that may be helpful to a broader community. Ideas include: hosting an office hour for those who cannot attend regular meetings and want to check in on what's new in the NAMOE world; organizing informal meet ups at ASEE and other conferences; communicating reminders of the group's existence to key email lists where new librarians may encounter us for the first time; and branching out from primarily focusing on collections and co-developing instructional resources to support NAMOE outreach and instruction.

Finally, anyone supporting NAMOE disciplines is invited to get connected; simply reach out to the authors and we will welcome you into our pod.

Note: The views expressed in this document are those of the author(s) and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

References

- [1] B. A. Osif, *Using the Engineering Literature*, 2nd ed. Boca Raton, FL, USA: CRC Press, 2012.
- [2] E. Bilodeau and P. Carson, "The role of communities of practice in the professional education of academic librarians," *Educ. for Inf.*, vol. 31, no. 1–2, pp. 25–51, Aug. 2014, doi: 10.3233/EFI-150949.
- [3] E. Wenger-Trayner and B. Wenger-Trayner, "Introduction to communities of practice." Accessed: Jan. 07, 2025. [Online]. Available: <https://www.wenger-trayner.com/introduction-to-communities-of-practice/>
- [4] K. J. Henrich and R. Attebury, "Communities of practice at an academic library: A new approach to mentoring at the University of Idaho," *The J. of Academic Librarianship*, vol. 36, no. 2, pp. 158–165, Mar. 2010, doi: 10.1016/j.acalib.2010.01.007.
- [5] N. Belzowski, J. Parker Ladwig, and T. Miller, "Crafting identity, collaboration, and relevance for academic librarians using communities of practice," *Collaborative Librarianship*, vol. 5, no. 1, Jan. 2013, doi: 10.29087/2013.5.1.04.
- [6] H. Power and C. Ha, "A multi-sectoral community of practice amongst librarians," *Partnership*, vol. 18, no. 1, pp. 1–21, 2023, doi: 10.21083/partnership.v18i1.7042.
- [7] S. Spicer, "Viral hangouts: The media literacy lifeline I didn't realize I needed," *J. of Media Literacy Educ.*, vol. 13, no. 3, pp. 149–152, Dec. 2021, doi: 10.23860/JMLE-2021-13-3-15.
- [8] R. Attebury, R. Perret, J. Kenyon, and D. Green, "Practice makes perfect? A retrospective look at a community of practice," *Library Philosophy and Pract. (e-journal)*, Jan. 2013, [Online]. Available: <https://digitalcommons.unl.edu/libphilprac/899>