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Bringing History to Life: Engaging the Campus through a Historical Mathematical Model Collection

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Abstract

Background: Mathematics is the foundation of engineering and technology, with many shared courses across these fields. However, its abstract nature can pose challenges for student learning. Historically, educators have used physical models and, more recently, digital rendering tools to visualize concepts and support student learning. At the University of Illinois Urbana-Champaign, the Department of Mathematics acquired and produced a substantial collection of mathematical models in the late 19th and early 20th centuries to facilitate hands-on learning. A recent building renovation and the temporary closure of the Mathematics Library created an opportunity for collaboration between the Department and the Library to revitalize these models for learning, research, and outreach.

Purpose: The project aims to assess, preserve, and revitalize the Department's historical mathematical model collection through a combination of library stewardship, undergraduate research, instructional innovation, and cross-campus collaboration.

Design/*Methods*: During the renovation, the Mathematics Librarian collaborated with Department faculty, staff, and students to inventory, organize, describe, and digitize the historical mathematical model collection. What began as an inventory initiative expanded into multi-semester undergraduate research projects, digitization and metadata efforts within the Library, and partnerships with a campus makerspace and an external software company to support student learning and research.

Results: The project transformed an inventory project into an interdisciplinary effort that supported student research, experimentation with mathematical visualization and fabrication technologies, and new outreach and exhibition activities. Students engaged with the models beyond their aesthetic appeal by describing them mathematically, fabricating physical and digital replicas, and communicating their work to broader audiences.

Conclusions: The project demonstrates how the Department's historical mathematical model collection can be revitalized for contemporary STEM teaching, research, and outreach through campus-wide collaboration. It also highlights the library's role in both stewarding academic heritage and new modes of learning and inquiry.

Introduction

The Department of Mathematics at the University of Illinois Urbana-Champaign houses one of the largest collections of historical mathematical models in the United States, comprising pieces acquired from Germany in the late nineteenth and early twentieth centuries, as well as models designed and constructed locally. For decades, the collection remained largely untouched, displayed in cases throughout Altgeld Hall, including in the Mathematics Library. However, with the imminent relocation of the Department and units in preparation for a major building renovation, the models needed to be inventoried and organized for property management and long-term stewardship.

The newly appointed Mathematics Librarian recognized an opportunity to work collaboratively with Departmental faculty, staff, and students during the temporary closure of the physical library space. Guided by Mathematicians, both faculty and student researchers, the initial "inventory" project evolved into a multi-semester collaborative project involving multiple schools and units across campus. The project has since expanded to encompass digitization, metadata, and preservation and conservation of the models with the University Library, establishing a foundation for future digital access and long-term stewardship.

This project work has also generated distinctive research and learning opportunities for undergraduates, who contributed to rediscovering the history of the models, constructing new scholarly narratives from historical materials, and engaging in fabrication and visualization activities. In this paper, the authors review the earlier and current phases of the work and discuss lessons learned, highlighting implications for other STEM-focused academic libraries engaged in preservation, outreach, and collaborative stewardship.

Background

Renovation of Altgeld Hall and Mathematics Library

The Mathematics Library at the University of Illinois Urbana-Champaign is housed in Altgeld Hall, which was constructed as Library Hall in 1897 and listed on the National Register of Historic Places in 1970 [1]. Prior to the opening of the new Main Library building in 1926, Altgeld Hall served as the university's primary library and was centrally located on campus. To accommodate the growing collections and additional classrooms, additions were constructed in 1914, 1919, 1926, and 1956 (shown in Figure 1). Following the relocation of the University Library in 1926 [2], Altgeld Hall subsequently housed other academic units, including the Department of Mathematics and the College of Law. The College of Law moved out in 1956, and then the Department of Mathematics took over Altgeld Hall [1]. The Department of Statistics later expanded and relocated to Illini Hall [3].

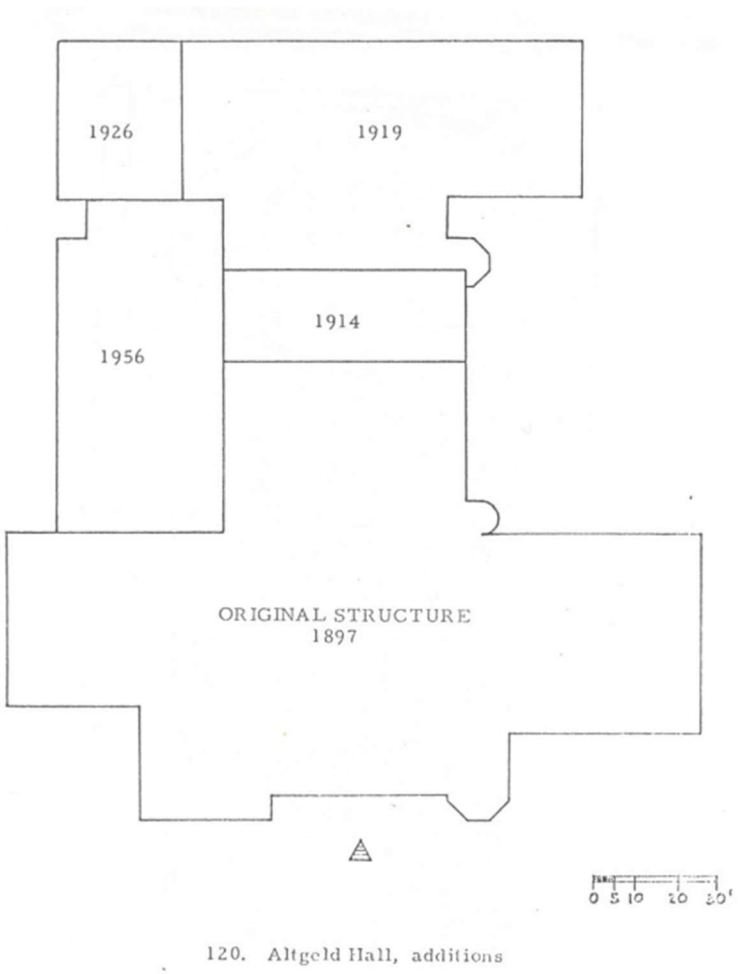

Figure 1. Additions to Altgeld Hall, showing the original structure ("Library Hall") built in 1897 and subsequent expansions [4]

Altgeld Hall features numerous architectural elements characteristic of its era, including true masonry construction in which the exterior walls bear the building's structural load [5]. The library within Altgeld Hall likewise reflects late nineteenth- and early twentieth-century technology in library engineering. Its floor-to-ceiling cast-iron bookcases and glass floor panels were designed to transmit light from gas lamps before electricity became widely available. Rather than having bookcases supported by the floors, as is typical in modern library buildings, the cast-iron bookcases in Altgeld Hall support both the floors and the materials they hold. Henry Petroski, an alumnus of the University and a historian of engineering and design, described such structures as "iron libraries," referring to a distinctive architectural typology of the library from that era.

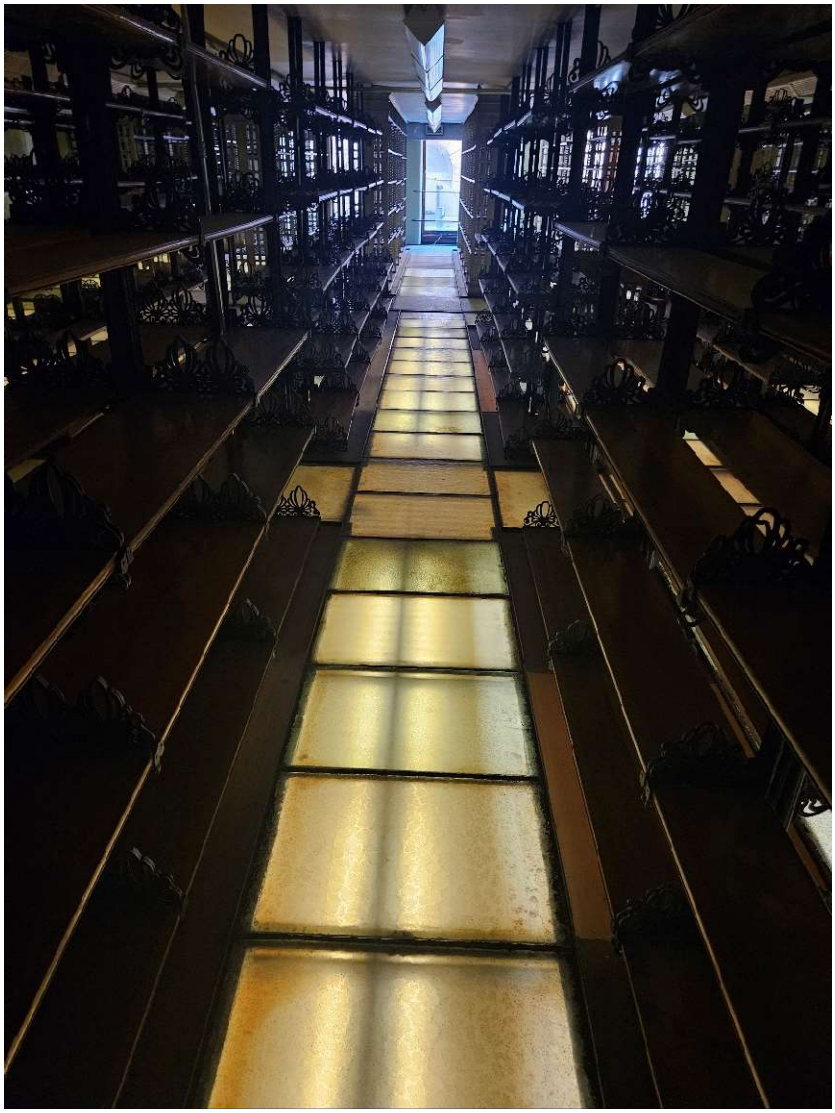

Figure 2. Interior of the “Iron Library” stacks with translucent glass floor panels. Photo taken after the collection was relocated to the Main Library in 2023.

In the early 2000’s, faculty and staff in the Department of Mathematics identified the need for significant updates to Altgeld Hall and advocated for comprehensive renovation. Issues ranged from broken glass floor panels and deteriorating molding to more than twenty levels of offset flooring created through additions, many of which did not comply with the Americans with Disabilities Act, as well as deferred maintenance [6]. Beyond restoration, the Department emphasized the importance of creating spaces that would support future generations of mathematicians, including appropriate computing resources and technological infrastructure. However, the projected cost of the renovation, combined with the lack of available space on campus to accommodate the Department's instructional and office needs, made it difficult for the project to advance at that time.

A feasibility study for Altgeld Hall, conducted under the leadership of Professor Sheldon Katz, who served as Chair of the Department from 2006 to 2011, was carried out by the Chicago-based architectural firm De Stefano Partners (DSP) [7]. The study assessed the scope of restoration and modernization required. Renovation planning was expected to proceed soon thereafter; however, the onset of the COVID-19 pandemic introduced additional delays. The phased renovation ultimately commenced in Spring 2023, starting with the exterior, then the interior [8]. The plan includes a new roof, exterior cleaning and repairs, enhanced accessibility features, the recreation of the stained-glass dome in the library foyer, updated technology, expanded study space within the library stacks, and the restoration and preservation of historical architectural details.

In Spring 2023, when the exterior renovation of Altgeld Hall began, the Mathematics Library relocated its collections and office space. The collections were transferred to the Main Library stacks, and library staff moved to temporary offices within the Grainger Engineering Library Information Center [9]. The renovation also required the Department's historical mathematical models to be moved out of the building to off-site storage. During discussions with the Mathematics Librarian, the Department faculty and staff expressed the need to "catalog" and "inventory" the models before their relocation, which in turn created an opportunity for new collaboration between the Department and the Library to study the collection.

Mathematical Models

A central figure in the early history of the Department of Mathematics is Professor Edgar J. Townsend. Townsend, the second chair of the Department of Mathematics (1905-1928) and Dean of the College of Science (1905-1913), was a strong advocate for the Library and played an important role in acquiring the mathematical models. Reportedly, the University Library held only "68 books of mathematical and astronomical nature" in 1870; by 1893, the mathematics collection had expanded to a 15-foot shelf. Professor Townsend continued to expand both the mathematics collection and the department by bringing back books from his worldwide travels, and he encouraged his colleagues to do the same. During his tenure, the Department grew from 11 to 45 faculty members, attracting scholars with what was described as "an excellent library and enough time allowed for research [10]."

Townsend likely encountered mathematical models at the 1893 International Mathematical Congress, held in conjunction with the Chicago World's Columbian Exposition, where the German mathematician Felix Klein exhibited "mathematical models and apparatus [11]." These models were used as teaching and research tools to visualize complex geometric forms, equations, and mathematical concepts. After spending two years in Germany for his doctoral work and seeing additional collections of these models, Townsend ordered a full set from the German manufacturer, Martin Schilling publishing house, soon after returning to the University in 1900 [12]. In 1911, he commissioned Arnold Emch, then a newly appointed faculty member of the Department, to design and create new models for the Department. Under his direction, the

mathematical model collection grew to approximately 400 pieces, establishing it as one of the largest such collections worldwide.

The models are made from a wide range of materials, including wood, plaster, cardboard, wire, metal, paper, plastic, glass, and silk. Over the years, the models were relocated multiple times within the building, resulting in some damage and loss during handling. Nevertheless, most of the collection remains in relatively good condition given its age and physical fragility. Staff from the University Library's Preservation Services have been conducting an assessment to determine the types of restoration required, recommend appropriate preservation strategies, and outline post-restoration care.

Literature Review

Discussions of the value of engaging with historical mathematical models must begin by tracing their historical development—and, in some sense, their origins. Professor Daniel Lordick, of the Geometric Modeling and Visualization (GMV) research group at the Technische Universität Dresden, traces the beginnings of mathematical models to the late eighteenth century. He suggests that their origins can be traced to the publication of Géométrie descriptive by Gaspard Monge at the École Polytechnique in Paris in 1799, which standardized the use of engineering drawing in technical disciplines and introduced a systematic approach to the visualization of geometric forms [13].

In Lordick's research, the earliest mathematical models are attributed to Théodore Olivier, a student of Monge, who, in the mid-nineteenth century, developed physical representations of "curved surfaces created by the movement of straight lines," or, more shortly, ruled surfaces [13]. As a professor of descriptive geometry at the Conservatoire national des arts et métiers in France, Olivier produced instructional materials for workers and designed models that allowed students to touch with their fingers and see with their eyes [14].

Throughout the nineteenth century, academic faculty across Europe constructed mathematical models to investigate geometric surfaces and their properties. Notable figures include Ernst Eduard Kummer, as well as two of his students, Felix Klein and Alexander von Brill, who would become central to the development and dissemination of mathematical models [13]. After joining the Technical College in Munich in 1875, Klein incorporated models into engineering and geometry education.

Beyond having students examine geometric surfaces, Klein required them to construct models in his laboratory with the assistance of machine operators and plaster molders—an approach characterized as "learning by making models oneself [13]." This historical precedent reinforces the educational benefits of engaging students through replication, fabrication, and

multidimensional exploration of geometry forms, aligning closely with the hands-on 3D printing and paper-construction components of the current project.

Moreover, Klein was instrumental in introducing mathematical models into the United States. His exhibition of mathematical models at the 1893 World's Columbian Exposition in Chicago attracted widespread interest among American mathematicians. While no direct account confirms a meeting between Klein and Townsend, Townsend's handwritten family history indicates that he visited the fair regularly while residing in Chicago [12], making it likely he saw the models there. Later, Townsend went to the University of Göttingen, where Klein held a professorship, to study under David Hilbert. After returning to the University of Illinois to resume his professorship, he ordered complete sets of mathematical models from the Martin Schilling publishing house in Germany for instructional and research use [15].

Previous Work

Historical mathematical models have long been on display throughout Altgeld Hall. Some restoration and cataloging efforts had been discussed in earlier years. One notable undertaking was the production of a series of high-resolution photographs during the 2005 floor renovation, when many models were temporarily removed from their display cases [15]. In 2022, the Department of Mathematics explored a potential collaboration with the Spurlock Museum to support restoration and preservation efforts [15]; however, a more systematic approach began in 2022-2023 as the Department prepared for the building's renovation and the relocation of the models to an off-site storage facility. During this period, Drs. Karen Mortensen and Steven Bradlow led and mentored undergraduate research teams through Illinois Geometry Lab (IGL) projects across two consecutive semesters. These projects focused on documenting and inventorying the models prior to their relocation. In parallel, the student teams investigated the collection's historical context and examined the mathematical significance of selected models.

The IGL projects led by Drs. Mortensen and Bradlow identified 28 references on the models' history, many from the University Archives, historical newspapers, and financial ledgers. The final report documented the models' acquisitions, tracing their origins to 1896, and their use and development in the early history of the Department. In addition, the report highlighted the roles of key figures in the development of the collection, particularly Professors Edgar J. Townsend and Arnold Emch, whose contributions were central to shaping and expanding the model collection [17].

The project teams also examined selected models related to circles of curvature, the Peano surface, and the helicoid, analyzing their mathematical properties, variations, and associated calculations. To support this analysis, two models were digitally reconstructed using *Mathematica* to visualize the underlying geometric form and facilitate further mathematical exploration.

Although the teams examined only a portion of the collection, their investigation into the histories of the models and the Department, along with the mathematicians responsible for acquiring and creating the model collection, illuminated how early faculty members envisioned these objects as learning and research tools. Notably, the IGL team's systematic analysis of the models' mathematical properties and computations established a methodological framework for subsequent projects.

The Collaboration

In Spring 2023, the Mathematics Library relocated its collection and office spaces out of Altgeld Hall as the building's exterior renovation began. Coinciding with these developments, a new Head of the Mathematics Library assumed the position in Fall 2023. Early conversations with key Departmental faculty and staff had identified an urgent need to "catalog" and "inventory" the historical mathematical models prior to their relocation. These discussions prompted broader consultations within the University Library, including engagement with metadata, preservation, and digitization units. Although internal digitization policies typically limit the intake of non-library-owned materials, the recognized historical significance of the mathematical models to the University of Illinois Urbana-Champaign, as well as their scholarly and educational value, led the Head of the Preservation Unit to agree to join the project.

It was determined that responsibility for the mathematical description (metadata) of the models should rest with the Mathematics Library following conversations with the Metadata Librarian and the digitization coordinator,. With guidance and support from the Department of Mathematics, the Mathematics Librarian hired a half-time graduate research assistant to develop detailed mathematical descriptions of the advanced models.

In 2024, the Illinois Geometry Lab (IGL) was renamed the Illinois Mathematics Lab (IML) under the leadership of Dr. Karen Mortensen [18]. To complement the metadata and cataloging work undertaken by a doctoral student, Mortensen proposed an IML undergraduate research project. Since then, three cohorts of undergraduate mathematics students have participated in this project as research scholars, with plans to continue in the following semester, Spring 2026.

Throughout this period, the Mathematics Librarian worked closely with the Department of Mathematics faculty and staff, including the IML Director, and coordinated library support to advance the project.

IML Projects

IML projects are a program within the Department of Mathematics at the University of Illinois Urbana-Champaign, designed to provide undergraduates with opportunities to work closely with faculty and graduate students while learning the research process.

Project topics are publicly announced, and undergraduates apply to specific projects. Selected students receive course credit in Math 492 (Undergraduate Research in Mathematics) and work under the supervision of faculty mentors and graduate student assistants. Each project team submits a written project proposal early in the semester, delivers a mid-semester presentation, presents a poster at the end of the term, and submits a final written report documenting their work.

Fall 2024

In Fall 2024, four undergraduate researchers studied historical mathematical models under the guidance of two faculty members, Dr. Karen Mortensen and Sarah Park, and a Ph.D. student. They built upon work completed in Spring 2023. The research team analyzed a selected set of mathematical models, including wooden models from the Mathematics Library and pieces representing curves of constant width manufactured by the Martin Schilling publishing house. The primary focus of the project was to identify models lacking documentation, explore the use of Mathematica for visualization, and develop mathematical descriptions for submission to the University Library's digital collection.

Below is an example of the student work describing wood model 19, conic sections [19].

> The right cone is a classic geometric shape with an apex positioned directly above the center of its circular base. When the base is centered at the origin, the apex is located at $(0, 0, z)$, where $z \neq 0$. The cone is related to the geometric concept of conic sections-shapes formed when a plane intersects the surface of a cone.
>
> This model is designed with removable pieces to illustrate the various conic sections. When a plane is parallel to the cone's circular base, the resulting conic section is a **circle**. If the plane is angled such that it intersects only the cone's lateral face, the section forms an **ellipse**. A plane parallel to one of the slant edges produces a **parabola**, while a plane cutting through both cones of a double right cone—two cones joined apex-to-apex with parallel bases—results in a **hyperbola**.

Figures 3 and 4 show the original wooden mathematical model 19 and its 3D rendering created using *Mathematica*.

Figure 3. Photo of Wood Model 19

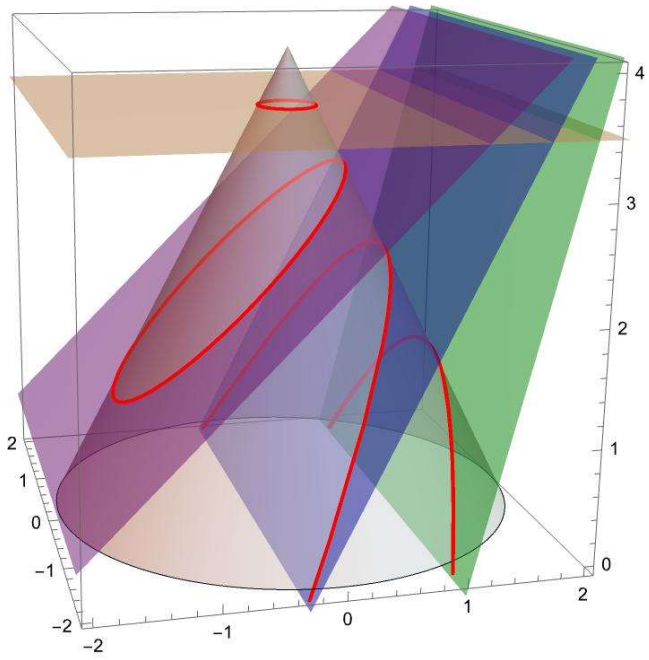

Figure 4. Illustration created with *Mathematica*

During this period, the University Library organized a special exhibition to commemorate a century of scholarship and celebrate the *100th Anniversary of the Main Library building* and the dedication of the Shebik Family Reading Room [20]. The IML team was invited to contribute to the exhibition. Due to space constraints within the display case, only four models could be selected for display. The team developed labels and explanatory text to communicate the mathematical concepts represented by the models.

Figure 5. Mathematics in Your Hands: 3D Mathematical Models [20]

The team received the Nancy D. Anderson Mathematics Undergraduate Research Award, established in 2024 to encourage and recognize excellence in research and writing by undergraduate students in the Department of Mathematics at the University of Illinois Urbana-Champaign [21].

Spring 2025

A new IML project commenced in Spring 2025 with five undergraduate researchers working under the same faculty mentors and graduate student advisor as in the previous semester. All participating undergraduates were new to the project. This team focused on a different subset of the collection, specifically models manufactured by the Martin Schilling publishing house,

representing surfaces of constant width, confocal quadric surfaces, and Dandelin spheres. As part of the project, the research team wrote detailed mathematical descriptions (metadata) to support the cataloging of selected models in the University Library's digital collections. The project scope was further extended to include 3D modeling and fabrication, using *Mathematica* and *Autodesk Fusion 360* to generate digital visualizations and design 3D printable models for hands-on outreach activities. In addition, the team created educational outreach materials based on these models for use in local schools, science fairs, and public engagement events [22].

One of the principal challenges during this phase of the project was identifying appropriate tools and partners to support the 3D printing, which had been newly introduced to the semester's work. First, *Mathematica*, developed by Wolfram Research, was identified as the primary software for mathematical modeling. The software supports the generation of geometric models suitable for 3D printing and includes documentation that explains how mathematical equations and parametric representations can be converted into 3D models and exported in formats compatible with 3D printers. An undergraduate researcher also used Autodesk Fusion 360 to modify the details of the 3D printing file (STL).

Second, the C-U Community Fab Lab, which is directed by iSchool faculty, was identified as a project partner. Although multiple makerspaces are available on campus, the Fab Lab's community-centered mission distinguishes it from spaces affiliated with specific departments, schools, or colleges, making it particularly suitable for cross-unit partnerships. The lab offers training and educational opportunities that allow students to learn how to operate a wide range of digital fabrication equipment, as well as consultation services to help identify tools and materials that project teams may not have initially considered [23]. Rather than providing fabrication as a service, the Fab Lab offers hands-on learning: students are expected to design, build, and fabricate their own projects, with staff and volunteers available to provide guidance when challenges arise. This creates opportunities for students to engage directly in the making process and to collaborate with others in a shared laboratory environment, encountering diverse perspectives shaped not only by mathematical thinking but also by information science and community-based practices.

Figure 6 presents a side-by-side comparison of the original "*Dandelin spheres*" model and its 3D-printed replica, created by the project team. The figure illustrates a dynamic geometric proof demonstrating that the cross-section of a cone at an appropriate angle forms an ellipse. The student who led the fabrication of this replica incorporated screws and strings to replicate the original model's functionality more closely.

Figure 6. The original “Dandelin spheres” (wooden model) and the 3D-printed version created by the project team. Photo by Fred Zwicky

The student project on 3D printing, conducted in collaboration with the Mathematics Library, the C-U Community Fab Lab, and the School of Information Sciences, received campus recognition and was featured in the university news (Figure 7). Through this work, the historical models were rediscovered not only for their historical significance but also for their educational value through visualization and hands-on learning. This recognition motivated an additional project with IML, focusing on examining the models through both mathematical analysis and hands-on fabrication.

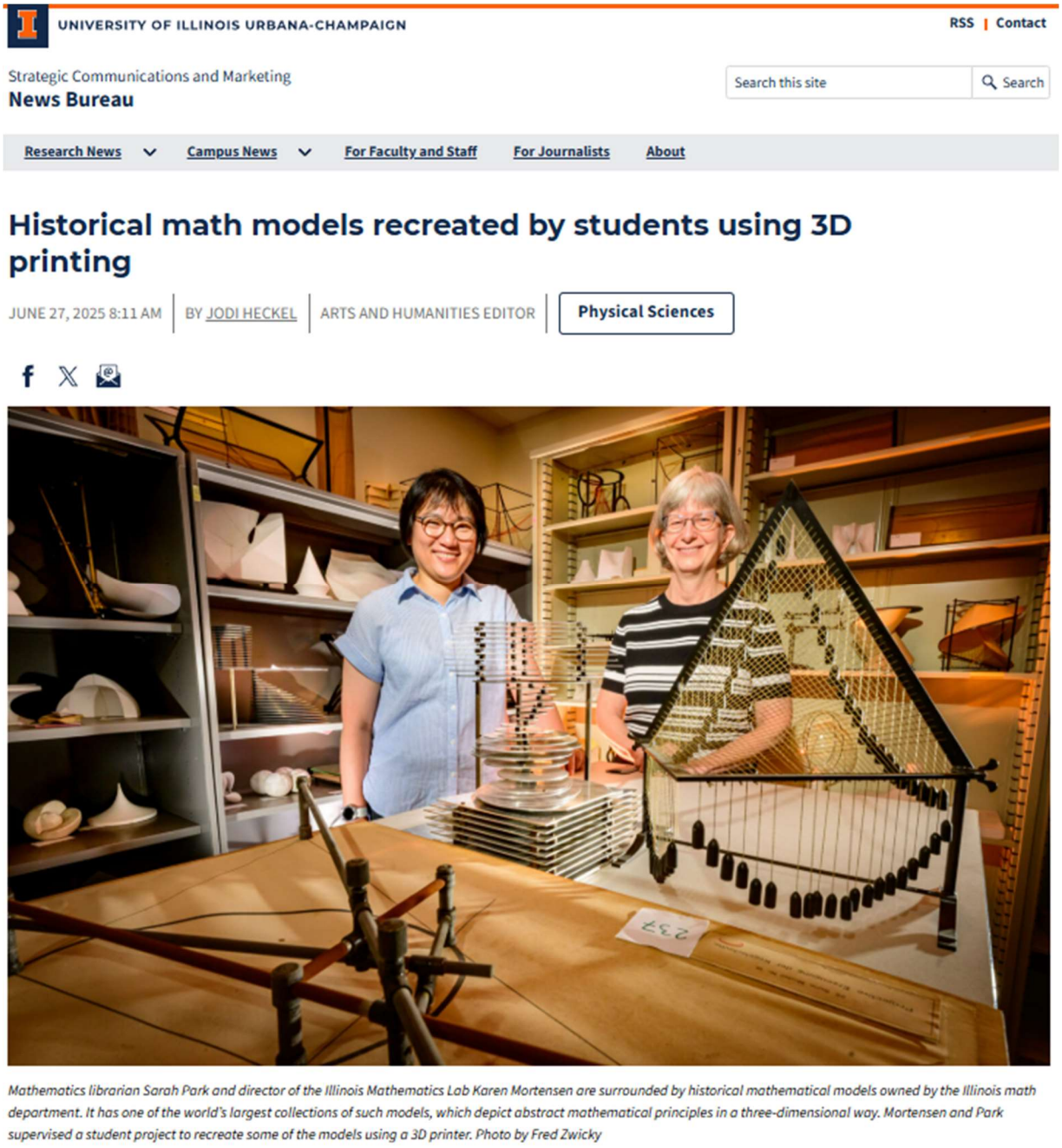

Figure 7. Documentation of the historical mathematical models featured in News [24]

Fall 2025

A new IML project team was formed in Fall 2025. The team consisted of five undergraduate students, two graduate leaders, and two faculty supervisors. Except for the two faculty advisors, all members were new to the model collection. The primary goal of the project was to build on the previous semester's work by focusing on the fabrication of selected models, using both 3D printing and paper cutting with a Silhouette cutter. During the semester, the team worked on

plaster models, including the Peano surface and a model from the Martin Schilling collection illustrating a surface whose mixed second partial derivatives are not equal, as well as paper models of quadric surfaces and their cross sections. The team also created a model not in the historical collection to illustrate the graph of a function with no limit at (0,0) [25].

To support this work, the group invited guest speakers to provide both historical context and technical guidance. A former IML student from the 2023 cohort, who had conducted in-depth historical research on the models, spoke about the earlier semester's project and her findings. Trainers from Wolfram Research provided instruction in geometric modeling with Mathematica and in workflows for exporting digital models to 3D printers. In addition, the team participated in two workshops with the C-U Community Fab Lab to gain hands-on experience with digital fabrication equipment and fabrication-oriented design processes.

During the mid-semester presentation, in which the team reported on their experience creating 3D replicas of historical models, an instructor in the audience asked, "When are you coming to my classroom to show the models?" This inquiry prompted the development of a special workshop session for multivariable calculus courses. The IML Director contacted the course instructors and invited their students to participate in the workshop. The team designed four thematic stations, each highlighting different models and mathematical topics, and prepared worksheets and hands-on activities to demonstrate the mathematical significance of the replicas in the context of Calculus III (Figure 8).

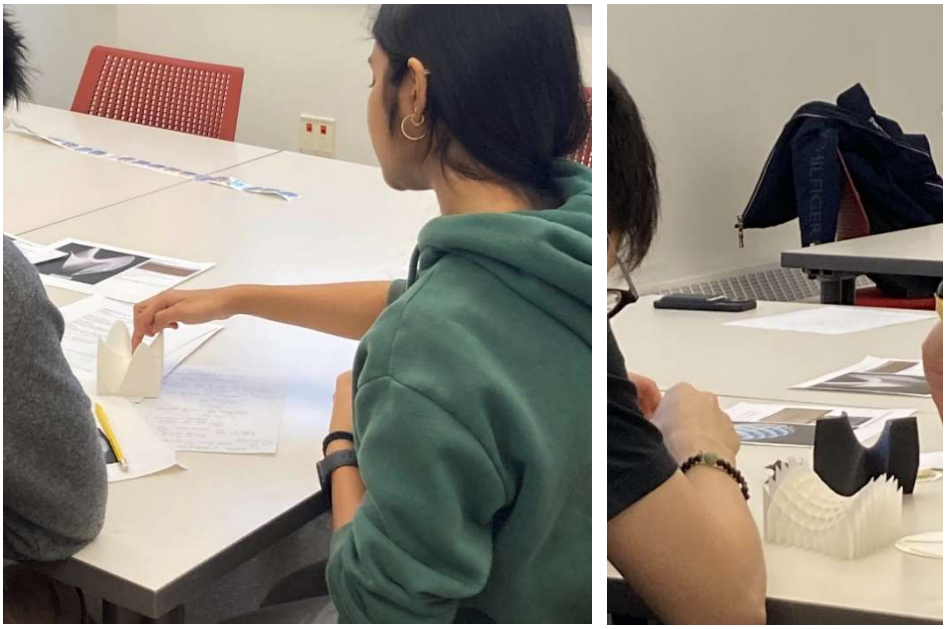

Figure 8. An IML scholar explains the replica of Schilling Series 30, Nr. 8, featuring curved ridges; a participant assembles a hyperbolic paraboloid using prepared paper cutouts.

Discussion

There is an old saying that "understanding deepens appreciation." For decades, the historical mathematical models were displayed in cases along the hallways of Altgeld Hall, seen daily by faculty and students on their way to classrooms and offices. Their distinctive geometric forms and aesthetic qualities caught the eye, yet interest in studying them as learning or research tools diminished over time. The sheer volume of the collection, combined with limited documentation and the absence of systematic pathways for engagement, made it difficult to interact with the models in a mathematically meaningful way.

New Life and Meaning for the Models

The authors found that the instructional and research-based framework developed through the IML projects provided students with an accessible entry point to engage with the models in more meaningful ways beyond their aesthetic value. It was also noted that the projects stimulate students' interest in mathematics education and in communicating mathematical concepts, as well as the University's history, in ways that make them more accessible to the broader public.

Undergraduate participants engaged with the models in the way their creators and educators envisioned: through literature research, analysis, and hands-on design and fabrication. They gradually analyzed the models and wrote mathematical descriptions, using concepts and terminology from their coursework to translate abstract geometric forms into analytical representations. Experimentation with fabrication tools such as 3D printing and papercutting added value, further invigorated their interest, and extended engagement beyond paper and screens into tactile and spatial modes of understanding.

In this process, the same objects that students once walked past without notice gained new life and new meaning, no longer regarded merely as historical artifacts in the display cases. The revitalization first occurred among the IML students who participated in the projects and then extended to broader audiences who encountered the models and their histories through presentations, posters, outreach events, exhibitions, workshops, and media. The projects demonstrated that historical mathematical models can serve as didactic and research instruments when paired with contemporary tools and guided inquiry.

Lessons Learned and Future Directions

The authors also learned the importance of developing partnerships across departments, schools, colleges, and campus units. Although the initial idea and need to catalog the mathematical models originated within the Department of Mathematics, the project quickly expanded through collaboration with the Mathematics Library, which brought formal expertise in metadata, digitization, and preservation. This engagement, in turn, spurred conversations with preservation and digitization units within the University Library. Likewise, the need to experiment with

digital fabrication prompted collaborations with the C-U Community Fab Lab, the School of Information Sciences, and Wolfram Research, the developers of Mathematica.

Had the project attempted to learn and lead all of these functions on its own, without seeking collaboration and assistance, it could not have advanced to the extent it did. New partners broadened the scope of the project, enriched discussions, and contributed to more robust outcomes. These partnerships proved critical to the project's success. They brought new talent, skill sets, and perspectives beyond those of mathematicians and librarians, including educators, software developers, and fabrication specialists, thereby revealing possibilities in the models that would not otherwise have been recognized.

Building on the successful outcomes of the recent IML projects on historical mathematical models, the IML Director and the Mathematics Librarian will continue to offer this research topic to students interested in exploring the models and their fabrication. With pilot digitization and formal preservation work scheduled to begin in late Spring 2026, future work will explore opportunities to align library stewardship activities—cataloging, digitization, and access—with the Department's teaching and research missions. This phase is expected to deepen collaboration among faculty, students, and library units and support expanded use of the models in undergraduate research, outreach, and public engagement.

Conclusion

When the Mathematics Library temporarily closed in preparation for the building renovation, the Mathematics Librarian, working with faculty and staff in the Department of Mathematics, recognized an unprecedented opportunity to engage with the Department's historical mathematical models. What initially began as a practical necessity to catalog and inventory the models soon expanded into an effort to reanimate their original purpose, as envisioned by faculty more than a century ago: to make abstract mathematical ideas accessible through tangible geometric forms. In doing so, the project echoed Felix Klein's didactic approach, which emphasized learning mathematics through the construction and examination of physical models, thereby providing students with hands-on experience with mathematical concepts.

The renovation and the temporary loss of the physical library space catalyzed new forms of collaboration between the Mathematics Library and the Department of Mathematics. Through multi-semester IML projects, undergraduate students rediscovered the historical models displayed throughout Altgeld Hall, objects they had often passed by without notice, and found contemporary relevance in them for teaching, research, visualization, and fabrication. These activities revealed not only the historical significance of the models but also their ongoing pedagogical and research value for twenty-first-century mathematics education.

As digitization and formal preservation efforts begin in the coming years, the project has laid a foundation for sustainable stewardship of the models and demonstrated how historical materials and pedagogical visions can be repurposed and revitalized for contemporary education and research.

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