

Harald Christen Jensen  
Physics Teacher of Physics Teachers



Remembering His Life and Achievements  
Honoring His Contributions to Lake Forest  
College 1942-1973

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## Prologue

Harald Jensen left indelible contributions on his family, the students and faculty of Lake Forest College, physics teachers and students in Illinois, the United States as a contributor on the Harvard Project Physics text book series for high school students, and even the world, for his work improving laboratory apparatus for physics students in the United Kingdom and Europe. This article attempts to elaborate on how his life, education, work, institutes and personality led to such prodigious achievements, as well as to honor his contributions, especially those to Lake Forest College.

## Early Years, 1908-1940

Harald Christen Jensen's life began as so many Iowans' did at the turn of the 20<sup>th</sup> Century, in a farm community. He was born June 12, 1908, in Blackhawk County, close to Benson, IA<sup>1</sup> to Danish parents Chris Jensen (who immigrated to Iowa in 1904) and Thyra Wolff Jensen (whose father, Mads Wolff, immigrated in 1879). He grew up attending Nazareth Evangelical Lutheran Church with a younger sister, Edel and a younger brother, Ernest. Danish was the language spoken at home and church. The family moved a few times, ending up in Cedar Falls by the time Harald completed high school.

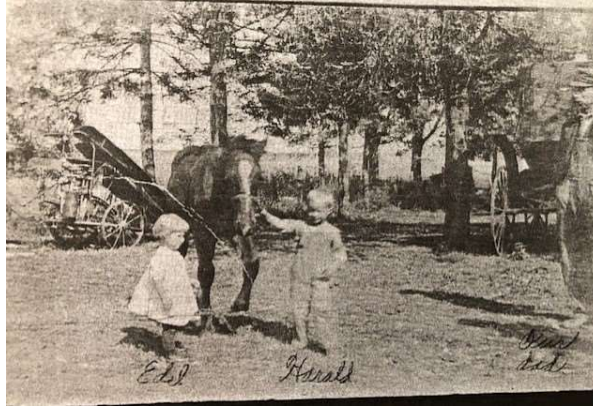


Figure 1 Edel, Harald and Christian Jensen, with horse Old Charley

Harald matriculated at the University of Northern Iowa (then known as the Iowa State Teachers College) for higher education. For extra-curricular activities, he sang in the Troubadours Glee Club, joined the Alpha Delta Alpha fraternity and the Debate Team.<sup>2</sup> This was in addition to working various part-time jobs to pay for tuition and books. He majored in mathematics,<sup>3</sup> but was also qualified to teach high school chemistry and physics. Harold later noted that his “undergraduate physics...consisted of just one course: General Physics.”<sup>4</sup> How far that single course would take him! Upon graduation in 1930 he was hired to teach math, chemistry and physics at Vinton High School in Vinton, IA., where he also coached the debate team. There he met an English and violin/music teacher, Virginia E. Schipfer. They were married in 1934.

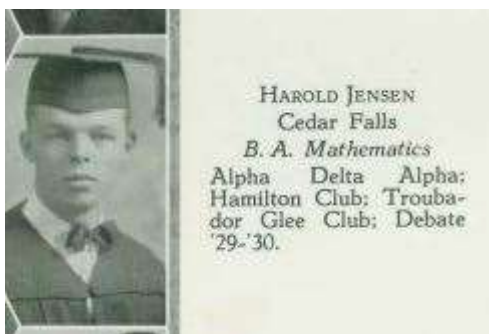


Figure 2: Harald grad photo, Iowa State Teachers College, 1930

In 1935 Harald earned a master's degree in physics over the course of four summers from the State University of Iowa, renamed the University of Iowa. A fellow graduate student, James Van Allen, space scientist and namesake of Van Allen Radiation Belts, became a friend. From 1936 to 1940 Harald served as Principal at Vinton High School, before being recruited to be head of the science department at Lake Forest High School in Lake Forest, IL.

#### In Lake Forest, IL 1940's and 1950's

Nineteen forty saw Harald and Virginia move to 363 Foss Court in Lake Bluff, IL while Harald Taught physics and chemistry at the five year old Lake Forest High School. He instructed students in the second floor classroom/lab that combined chemistry and physics. The new school hired some teachers from Highland Park High School (which Lake Forest students attended before LFHS was constructed) but also searched for outstanding, experienced teachers for other positions. In a 1991 video, Harald recalled that the LFHS principal came to the university in Iowa City where Harald's resume was on file. The principal read the resume and drove sixty

miles to Vinton to meet Harald, unannounced. Harald was holding detention, could not meet then, and the principal asked Harald to drive to Lake Forest to meet with him at a later date. The new school was, “quite the place,” Harald recalled after visiting. He accepted the job and thus the Jensens moved to Lake County, Illinois.<sup>5</sup>

Two years later, in the summer of 1942, he filled in for a Lake Forest College physics professor, Roscoe Harris, when Roscoe entered the service during World War II.<sup>6</sup> Harald never left. The 1943 Lake Forest College Bulletin/Course Catalog lists Harald as the sole professor, teaching four to five courses each semester.<sup>7</sup> (Please see the Appendix with Lake Forest College Course Catalogs.) He worked in the 1908 Physics Building now known as Carnegie Hall. His son Chris fondly remembered sliding down the bannisters of Carnegie from the third floor to his dad’s office on the first floor. For a while, this building held biology and chemistry as well, until the new Johnson Science Center opened in 1961, which expanded classroom, laboratory and office space, and offered state-of-the-art laboratory furnishings. The 1990’s Dixon wing added research space. In 2018 the new Lillard Science Center opened, providing even more space to study the sciences.





*Figure 3: LFC Carnegie Hall 1940's with Jensen Car (1939 DeSoto?)*

At the start of World War II, enrollment in college physics courses skyrocketed, as the discipline was recommended for men entering service. As men enlisted, enrollment plummeted. But then the Army Specialized Training Program began on campus, bringing hundreds of draftees to campus for a few months to study physics and other sciences.<sup>8</sup> In 1942, Harald taught Navigation & Meteorology during the Summer session, along with Electrical Measurements and General Physics. Away from campus, Harald served as a civilian instructor at Palwaukee Airport in Wheeling, IL. There he taught civilian pilots the basics of flight mechanics and aerodynamics.<sup>9</sup> After WWII, enrollment at Lake Forest College fluctuated, first increasing with an influx of servicemen using their GI education benefits, then, six years later, once they graduated, enrollment dropped and leveled out. Through all of this, just two professors, Harald Jensen and D.F. Pierce, taught, advised, and became, “fairly confident instructors of undergraduate physics.”<sup>10</sup>



*Figure 4: Harald Jensen in Carnegie Lab 1940's*

During WWII Harald also worked at Northwestern University, instructing physics labs and quiz sections in the summers for the Navy V-5 program (Civilian and enlisted men with at least two years of college took pre-flight school courses in math and physics, and those that successfully completed the program were sent to flight training, with the rank of Aviation Cadet). This allowed Harald to meet the physicists at NU and study other aspects of the discipline.

The Jensen family, by now four members with son Chris and daughter Carole Lee, continued to live in Lake Bluff, about three miles north of the Lake Forest College campus. This presented a dilemma for Harald and his wife Virginia; how to share the one car they owned if Virginia needed it and Harald was on campus? Ever inventive, Harald decided to modify a Schwinn bicycle with a small gas engine offered by Whizzer Motors<sup>11</sup>, and "The Whizzer" was born. Chris told of his dad either getting on the bike with the kickstand up, pedaling then letting out the

clutch to engage the engine, or just pedaling the bike in a normal fashion, then engaging the clutch and “zoom!” Off he’d fly down curvy Sheridan Road to work. The professor and the bike.



*Figure 5: Harald Jensen's Whizzer bike*

In a similar fashion, Harald saw the need to modify their house. Harald’s son Chris reported that his dad and a contractor, Micky Lindenmeyer, remodeled the Foss Ct. house, raising the roof to add large and small dormers and creating two large bedrooms, a bathroom and storage.<sup>12</sup> Harald also outfitted the house with a basement darkroom for developing photographs.



Figure 6: Jensen Family house 363 Foss Ct, Lake Bluff, IL, with "Boy" 1940's

The 1940's and 1950's saw many changes in science and education in the United States. The Cold War and the struggle for supremacy in technology over the Eastern Bloc led to an emphasis on science in education and indeed, an overhaul of the U.S. education system, as U.S. students lagged behind their peers in other developed countries.<sup>13</sup> Like today, STEM subjects became a larger part of the standard curriculum in primary and secondary schools, and the U.S. Congress stimulated science education by enacting the National Defense Education Act (NDEA) of 1958, which provided financial aid to teachers studying STEM subjects, as well as grants to enhance equipment and materials in schools.<sup>14</sup> Laboratory apparatus was not yet standardized, and much of the physics equipment was imported or custom-made at the college level. By all accounts, Harald Jensen was wonderful at creating equipment for lecture demonstrations as well as student experiments. Some of his demonstrations were gathered from common lab supplies, and dubbed, "physics on the hall shelf." Harald published his new experiments in *The*

*Physics Teacher*, a journal of undergraduate and graduate teaching, and *School, Science and Mathematics*<sup>15</sup>, a journal for K-12 teachers.

After WWII, while teaching at Lake Forest College, Harald pursued his Ph.D. at Northwestern University. An article co-authored by Harald, published in *Physical Review Journal*, November 1954 mentions that Harald was “on leave from Lake Forest College.”<sup>16</sup> He completed his PhD in 1954 with a dissertation titled, “Trapping Effects and Photo-Sensitivity in Cadmium Selenide.”<sup>17</sup> A 1949 *American Men of Science* lists Harald’s area of interest as Analytical Spectroscopy.<sup>18</sup> Still going full steam ahead, Harald was made Chairman of the Lake Forest College Department of Physics in 1954, a position he held until 1967.



Figure 9: Harald Jensen in Lecture Hall 100, 1960's

### 1960's: The “Phenomenological Approach”

During the 1940's and 1950's, Harald developed his own way of conducting a physics course lecture. Rather than using a demonstration of a physics concept during or at the end of the explanation, he started the lecture with “the phenomenon.” Roy Coleman, a teacher in the Chicago Public Schools, says, “(Harald) could quiet a group by just entering and doing something

phenomenological without saying anything.”<sup>19</sup> Professor Jensen espoused this format and encouraged others to adopt it. Over decades, this “phenomenological physics” approach spread through publications, colloquiums, meetings and first-hand experience. Earl Zwicker, Professor Emeritus at Illinois Institute of Technology described Harald’s lecture technique as, “involving us in a dialogue combining pedagogy and physics...what Harald showed us we call the ‘phenomenological approach,’ let the phenomena do the teaching.”<sup>20</sup>

In his 1974 Millikan Award speech, Harald credited his former professor from the 1940’s, Professor G.W. Stewart at the University of Iowa, and what Harald termed “the Stewart Philosophy,” which engaged, inspired and encouraged students, teachers and professors in physics using novel demonstrations and apparatus, with his new teaching technique. Professor Stewart hosted an annual colloquium for college physicists at the University of Iowa which held an Apparatus Competition. Harald won the competition in 1956! The annual colloquium continues to this day.<sup>21</sup> A 1974 article in *The Physics Teacher* says, “A longtime participant in the Iowa (apparatus) colloquia was Harald Jensen, Lake Forest College who, over the years, has distinguished himself as a physics teacher and outstanding designer and developer of physics apparatus.”<sup>22</sup>

One way to advance physics at the secondary school and collegiate levels was to expand the “Stewart Philosophy” to other regions of the U.S. and various institutes came to life. Harald

recalled an early conference held at University of Wyoming, in which he participated. Others followed, including several at Lake Forest College: In-service Institute, an Apparatus Conference and Summer Institutes. An example is the “Conference on Experiments for Instructional Laboratories in College Physics,” held at LFC June 20 to July 2, 1965. Out of these sprang the format for the Illinois State Physics Project (ISPP) in 1967. More about that later.

Professor Jensen’s format of “let the phenomenon do the teaching” caught on. He kept letters from former students telling him how much they learned, appreciated and modeled teaching their own courses after his “phenomenological approach.” It is referenced in journal articles, ISPP newsletters, and passed on to uninitiated teachers at meetings and institutes. A professor at IIT, Earl Zwicker was quoted saying, “in Chicago, Harald was the physics person the rest of us took as a model. He took a phenomenological approach: no lecture, start with live phenomena.”<sup>23</sup> Although Wikipedia describes the term “phenomenological approach” as it applies to philosophy and psychology, it is still the best way to describe a physics phenomenon helping to demonstrate a physics concept. Lake Forest College physics professors continue to use it!



Figure 7: Harald Jensen in LFC lecture hall 100

### Alphabet Soup: The Acronyms of High School and College Physics, and Photography

Before we go any further, let's run down a list of acronyms for organizations and journals.

**AAPT:** American Association of Physics Teachers, founded 1930. Part of AIP.

AAPT awards the Oersted Medal for outstanding, lasting contributions to The field of physics (some medalists also win Nobel Prizes). It also awards the Millikan Medal for notable, intellectual teaching contributions. Harald Jensen and T.H. Jeong, both Lake Forest College professors, won the Millikan Award. LFC Professor Emeritus Bailey Donnally was AAPT president 1971-72.

**APS:** American Physical Society, founded 1899 to advance and diffuse knowledge of Physics. Published *Physical Review Journal*.

**AIP:** American Institute of Physics, founded 1931, a federation of 10 societies supporting Physical Science enterprise.

**CSAAPT:** Chicago Section of American Association of Physics Teachers. Harald was president twice in the 1960's.

**ISPP:** Illinois State Physics Project, federally funded by an NSF grant 1967-1970, continues as an academic year, monthly meeting even now. Harald Jensen was a founding member.

**PRJ:** *Physical Review Journal*, started 1893, last published 1969. From American Physical Society.

**PSA:** Photographic Society of America. Founded in 1934. 12 local and regional chapters which offer exhibits, competitions, classes to promote photography.

**PSSC:** Physical Science Study Committee. 1956-67. Two MIT professors started this to unify and improve high school physics courses with new textbooks, outlines and films. By early 1960's, half of high school physics classes used these course materials.

**TPT:** *The Physics Teacher*, peer-reviewed journal put out by AIP, started in 1963.



### 1960's: Harald Travels Nationally and Internationally

In 1965, Harald was asked to join the Harvard Project Physics, which used a grant from the U.S. Office of Education to develop standardized textbooks and apparatus for high school physics. This project evolved somewhat from, and eventually supplanted the Physical Science Study Committee (PSSC) work begun at MIT in 1956. Harald served as co-director of the project and lived in Cambridge, MA for a year. He also served as a member of the AAPT Apparatus Committee for Educational Institutions. As co-chairman, Harald testified before a U.S. House of Representatives committee in July 1966, which studied import tariffs taxed on science equipment purchased overseas. The Apparatus Committee sought to remove the taxes, which, the committee believed, “[insulated] the American educational system” and “[hindered the ability] to buy, secure and use this equipment in as simple and direct form as possible.”<sup>24</sup> It appears that the bill was enacted October 14, 1966.<sup>25</sup> For this work, Harald received the 1966 AAPT Distinguished Service Citation.

Harald presented at a meeting of the Physical Science Study Committee (PSSC) held at Lake Forest College in October, 1967. His two talks were titled, “The Special Illinois Project” (referring to ISPP) and, simply, “Physics Demonstrations.” Chicago PSSC meetings were held twice a year and featured outstanding lectures on topics related to improving physics instruction in secondary schools.<sup>26</sup>

Meanwhile, in 1965 Harald traveled to Oxford, England to assist Oxford with standardizing physics laboratory apparatus and the curriculum of the academically gifted in Europe. He also traveled to the University of North Dakota in Grand Forks and was a visiting scientist at Flint Junior College, in Flint, MI. Along with these visiting events/institutes Harald served on the AP Physics Board of the College Exam Board from 1964-1965 (and as Chairman, 1965), helping to formulate AP physics exam questions. In 1970, Harald traveled to Eger, Hungary, with responsibility for the apparatus exhibit at the International Congress on Education of Teachers, sponsored by the International Union of Pure and Applied Physics.<sup>27</sup> Harald's son Chris recalled his dad traveling to Rensselaer Polytechnic Institute in New York as well as Wesleyan University in Connecticut.

### 1960's: Back to Lake Forest College

Lake Forest College was humming along and the physics department was expanding. Two professors, Harald and D.F. Pierce, could no longer handle all the courses offered, and more specialized professors were sought to maintain a quality program. Harald was instrumental in recruiting new talent. In the 1991 video interview, Harald claimed he had one outstanding attribute; that he could assess a person quickly. Here follow three successful assessments and hirings.

First to arrive was Bailey Donnally in 1961. Bailey hailed from Alabama, had a B.S. in engineering physics from Auburn University, continued studying there for a master's degree in

physics (awarded when he was nineteen years old!) then earned his Ph.D. in atomic and nuclear physics from the University of Minnesota while teaching at the College of Saint. Thomas. Bailey brought his “state-of-the-art” knowledge to Lake Forest, along with his talent for photography. Over the years, Bailey would divide his time between these two pursuits, garnering honors and awards for both. Bailey won the 1948 Kodak National High School Photography Contest Grand Prize. Later he received 4 Kodak Charles A. Kinsley Awards and many local Chicago photography prizes and was awarded the FPSA (Fellow, Photographic Society of America), PPSA (Distinction of Proficiency) and Honorary Fellow, PSA’s highest honor.<sup>28</sup> Bailey also served as President of AAPT 1971-72 and received AAPT’s Distinguished Service Citation. When he retired from Lake Forest College in 1995, he held the title of Distinguished Service Professor of Physics.<sup>29</sup>

In 1963 Tung Hon Jeong joined the LFC Physics Department faculty. “TJ,” or “Sunne,” as he was known, was born in China and emigrated to the U.S., settling in Amarillo, Texas. He proved to be an outstanding student in math and sciences and received a full scholarship to Yale University. He pursued graduate studies in nuclear physics at the University of Minnesota, earning a PhD in 1962. It was fellow Minnesota alumnus Bailey Donnally who helped Harald persuade TJ to join Lake Forest College.<sup>30</sup> Within a few years, TJ had mastered lasers and holograms and made a name for himself, as well as the College, with breakthrough technology in true-color holograms,

collaborating with Swedish holographer Hans Bjelkhagen. TJ traveled to more than 500 universities and industry sites all over the world and hosted the International Conference on Display Holography every three years. He received the AAPT Millikan Medal, the Saxby Medal (from the Royal Photographic Society of Great Britain), the Lifetime Achievement Award from the International Hologram Manufacturer's Association and was made a Fellow of the Optical Society of America, among other honors.<sup>31</sup> Today, Lake Forest College's Holography Gallery is named in Tung Hon Jeong's honor.

The year 1965 brought the final member of the 5-professor LFC physics team: Dr. Roger Faber. Roger hailed from Grand Rapids, Michigan. He majored in chemistry at Calvin College and earned his Ph.D. in physical chemistry from Michigan State. He returned to Calvin College to teach Physics, then after a telephone call with Harald which Harald later claimed he, "knew he had to hire this guy," Roger joined the Lake Forest College faculty. In addition to teaching physics and astronomy courses, Roger had a "deep passion for the philosophical aspects of physics and quantum mechanics."<sup>32</sup> He twice won the LFC "Great Teacher" award, chosen by the senior class. He also won the Trustee Award for Excellence in Teaching. Roger authored several books, among them, *Clockwork Garden: On the Mechanistic Reduction of Living Things*.<sup>33</sup>

#### 1960's: The Institutes – Teaching the Teachers

Roy Coleman, Illinois Institute of Technology (BS) and DePaul University (MS), graduate,

taught physics at Morgan Park High School from 1964 to 2006. Roy met Harald who was leading an institute in 1966-7 for Chicago Public Teachers teaching AP Physics, held at Lake Forest College. Roy insisted the high school teachers were told to call Harald Jensen “Harald,” not “Professor.” The format of the Institute was casual; teachers would spend most Friday evenings, 4-8PM, at LFC during the academic year, refining Physics concepts and even developing new experiments, along with learning what their students could expect on the AP Physics exam (remember Harald served on the AP Physics Exam Board, 1964-5). Roy recalls, true to form, Harald starting each class with a phenomenon. The group of “student” teachers had some young and some seasoned high school teachers, but all were impressed by Harald’s ingenuity. Roy comments that Harald welcomed suggestions and adaptations. In fact, Roy created a demonstration of an air-bearing gyroscope where he replaced Harald’s expensive 4-inch steel sphere with a (cheaper) used bowling ball. He brought it to Harald who told him to write up how he made it and send it to *The Physics Teacher*, which Roy did. A few years later, after refining prose and diagrams, it was published.<sup>34</sup>

(see <https://aapt.scitation.org/doi/abs/10.1119/1.2350062>)

Roy also recalls attending a subsequent Summer Institute at Lake Forest College, but this one was taught by Prof. T.H. Jeong on holograms. Simultaneously, Harald was giving a course for middle-school science teachers. He was still spreading the physics gospel.<sup>35</sup>

## 1960's: The Beginning of the Illinois State Physics Project

The 1960's saw declining enrollment of physics students, both at the high school and college/university levels. In 1967 the National Science Foundation funded a project proposed by Harald Jensen called the Illinois State Physics Project (ISPP) with the focus of reversing the decreasing enrollment trend in high-school physics courses.<sup>36</sup> Five college professors from Illinois, Harald Jensen among them, formed the initial leadership team, and they began Summer In-Service Institutes and follow-up institutes for high-school physics teachers at eleven colleges and universities throughout Illinois. Lake Forest College was one site. The funding continued to 1970, and when the funding was withdrawn, the ISPP leaders held a meeting and voted to abandon the project.

Following the meeting, Harald announced, "We can't let this happen! There are just too many worthwhile things coming out of (ISPP) to let it stop!"<sup>37</sup> And so teachers from nine area high schools, colleges and universities agreed to keep meeting once each month during the academic year, continuing to share novel (and dormant) physics concepts and demonstrations with anyone who wanted to attend. Earl Zwicker, (Professor Emeritus of physics at Illinois Institute of Technology) one of the ISPP founders, wrote that, "Harald was our real leader. Although we have all contributed to the meetings in various ways, Harald is the person most of us try to emulate."<sup>38</sup> "Start with the phenomenon!" admonishes Harald as he puts live physics on the table in front of

us.”<sup>39</sup> Earl continued, “[E]ach of us has tried to inspire the others by following Harald’s example.”<sup>40</sup>

Over the years, ISPP has engaged newer teachers and seasoned ones alike. Harald reported, in his 1974 Millikan Lecture, that “nearly half of the Illinois high school physics teachers have participated in ISPP and its institutes.”<sup>41</sup>



*Figure 8: Harald Jensen with Illinois Physics Teachers*

Harald Jensen felt there were four reasons for the success of the phenomena of physics approach at ISPP. First, a lively demonstration encourages dialogue, no matter what level of understanding. Second, even with tremendous resources, it is hard for physics teachers to find the most productive or best utilization of the equipment, manuals, journals, videos and kits

available. ISPP leaders have found that teachers are more enthusiastic when they can modify and innovate and create, even design new demonstrations and apparatus. Thirdly, introducing phenomena leads fairly easily to the more formal quantitative and deductive physics described in textbooks. Finally, there is fun involved in making things happen. “The reactions of students have convinced us that the fun is real and perhaps is a necessary adjunct of the teaching-learning endeavor.”<sup>42</sup>

In recognition of Harald’s contributions to ISPP, the group awards the “Jensen Bar” annually to an outstanding Illinois physics teacher. This 1.10-meter long piece of wood with nine hooks attached is also a class demonstration about mechanical equilibrium.<sup>43</sup> The plaque attached to the Jensen Bar reads:

#### “Harald Jensen Award

Harald, a teacher’s teacher, an inspiring friend to his students and colleagues, showed caring and love toward his students and profession. Harald once said, ‘physics teachers are like baseball players because both get paid for something that each would be doing without pay anyway.’ In teaching physics emulate Harald’s enthusiasm, his ‘phenomenological’ teaching approach and instill an understanding and appreciation of physics.

Be the best you can be.

This award is presented to:”



A class set of the Jensen Bars



### The 1960's: Miscellaneous Adventures

With all this work and travel, you may be asking, “did Harald and Virginia get any time for themselves and their family?” The answer, from their relatives, is yes. In the early 1960's, the Jensens moved from 363 Foss Ct. in Lake Bluff to a new house at 1052 Inverleith Rd in Lake Forest,

which, of course, Harald helped to design and build. Harald's son Chris reported Harald, architect Hal Sadler and contractor Micky Lindenmeyer "created the residence with many custom features. A full, arched wall of glass in the (sunken) living room. A fireplace between the living and dining areas [and] a small alcove which was Mom's sewing area. Copper pipes under the floors provided warmth in the winter. A special area in the basement provided correct lighting and humidity for growing orchids."<sup>44</sup>

There was also a family vacation home. Beginning in the early 1900's, the YMCA purchased a resort near Estes Park, CO to use as a summer training facility for YMCA professionals. This grew to include family programming and lodgings, and over time it turned into a year-round conference and family center. After WWII, the YMCA of the Rockies built new buildings and sold off some of the older cabins.<sup>45</sup> Harald and Virginia purchased one of the cabins in 1947 within Rocky Mountain National Park and it became the family getaway destination for many subsequent summers.<sup>46</sup>

In August, 1963, Harald and Virginia traveled to Europe. Not for a conference, but for fun. Son Chris understatedly related an "adventure" he had during that time. He was a Navy helicopter pilot and during a night mission from an aircraft carrier, his helicopter suffered catastrophic mechanical failure and crashed into the Pacific, in the East China Sea. Chris and two others survived, but one crew member perished. They were rescued and Chris recovered at a US

Army Base hospital in Okinawa, Japan. As it was difficult to get in touch with his parents in Europe, the telegram they received days later in Innsbruck, Austria, gave them the good news that Chris had survived and was recovering.<sup>47,48</sup>

On at least one trip abroad, Harald visited relatives in Denmark, saw the family farm, Remmergarrrd, in Skjern and rekindled correspondence with his cousin Sidsel. They started a chess game, via mail, which they dubbed, "Air Mail Chess." The correspondence was conducted in Danish and Harald's son Chris commented on how long it took (months) to complete one chess game!

Virginia reportedly loved to travel. She enjoyed planning long vacations, such as a cruise to Le Havre, France in 1955, followed by a purchase of a French Simca car in Paris, then an 11,700 km family tour of Europe, including Great Britain, Scandinavia and Italy<sup>49</sup>. A friend and fellow professor's wife claimed that Virginia loved to stay in hotels and particularly enjoyed hotel sheets.<sup>50</sup> Son Chris reported that Virginia's secret desire was to own a travel bureau.

Besides travel, Virginia and Harald played bridge with colleagues and their spouses. Virginia in particular was a gracious hostess and made a point to welcome new faculty to dinner soon after the semester commenced. She was known to help new faculty wives navigate college life. Virginia was remembered as cheerful and she

loved to giggle, in contrast to the rather reserved Harald.<sup>51</sup>

### Harald Jensen's Teaching Philosophy and Teaching Style

There is a famous quote by William Butler Yeats that reads, "Education is not the filling of a pail, but the lighting of a fire."<sup>52</sup> Harald Jensen certainly embraced this teaching philosophy with his phenomenological approach. He referenced the "Stewart Philosophy" in his Millikan Speech (1974) and described Dr. G.W. Stewart's penchant for "encouraging, helping and pushing and the desire for excellence." Stewart also sought new and better teaching apparatus, giving awards to excellent and novel contraptions, which Harald also embraced. Letters of praise about Harald note that he, "was an inspiring friend to student and colleagues" and he, "showed caring and love toward students and the (teaching) profession."<sup>53</sup>

In an address to Lake Forest College students, May 1955, Harald detailed his thoughts on learning and the importance of creativity. This five-page essay covers how distasteful, but necessary, it is to study and memorize. He insists that "the mind is built to have ideas and create," and that there are four steps that promote creativity and ideas. First, "We must know about ideas already produced (school/facts)." Second, "[p]ractice is required ...to find associations between seemingly unrelated ideas (classifying/postulating)." Third, "[s]tudy the great ideas...laws (Newton's laws, Democracy, for example)." Fourth, "[r]ecord (one's) ideas and ... (test) them." One finds that "[m]any ideas are good, but someone else has thought of them" but

sometimes one arrives at “[i]deas that are original, new to everyone.” Harald ends with, “Train yourself to have ideas and use your mind for the purpose for which it was built and the activity it enjoys.”<sup>54</sup>

What an inspiring way to look at teaching, trying to stimulate creative ideas and reasoning to explain demonstrated phenomena. One of the 2021 Nobel Prize winners in Chemistry, Benjamin List, said much the same thing, “[I] figured [my] own hunch might just be a stupid idea – until it worked. At that eureka moment I did feel that this could be something big.”<sup>55</sup>

In a March, 2022 interview, alumnus Steve Roth '76 recalled four things that stood out in having Harald Jensen for a professor in General Physics. First, Harald’s enthusiasm for the subject kept students engaged. Second, the professor was “hands-on,” which really resonated with Steve. Third, the demonstrations at the beginning of class showed a “real world application of a concept, then the class dove deeper into the math behind the phenomenon. This relevance stayed with the students. Fourth, Harald had high expectations of students and would yell at students if they failed to keep up, which wasn’t a bad thing. Steve also noted the high-caliber of all the LFC physics professors at that time.<sup>56</sup>

Another interview, this time in February 2022 with alumnae Elizabeth Fisher '71 and Amy Abe '74, both agreed that Harald was “old school,” a bit gruff, somewhat intimidating. He was always dressed in a white shirt, jacket and tie. If they had questions, they didn’t approach

Prof. Jensen, instead they sought out Professor Roger Faber. Amy had heard of LFC and Harald Jensen in high school. Elizabeth recalls Harald's summer institutes for high-school teachers in physics going on while she conducted research in a chemistry lab. Both had Harald for General Physics lecture the entire year (3 quarters then). Physics students had to give presentations, and Harald was said to give better grades to women students if they wore skirts (this during the beginning of "womens' liberation," when blue jeans were standard). Amy even recalled some class demos, particularly one where Harald demonstrated that not all students had the same hearing range. And another where he examined students' eyeglasses and could tell if the student was far-sighted, near-sighted and/or had astigmatism.<sup>57,58</sup>

Lake Forest College alumnus Jonathan Kiell '74, also had Harald Jensen for General Physics. Jonathan recalls not taking tests in the course, just giving presentations on special topics. After his first presentation, Harald asked if he thought a 'B' grade was okay, Jonathan replied that he hoped to go to graduate school in Physics and an 'A' grade would be better. He got an 'A.' Jonathan also remembered Harald as being formal, and students couldn't tell if he was joking or serious. Harald retired the year before Jonathan graduated, and he gave some text books to Jonathan. Inside one cover reads, 1964 Harald Jensen and 1974 Jonathan Kiell.<sup>59</sup>

An LFC alumnus who returned to teach at Lake Forest College, Michael Kash '77, recalled working with Harald Jensen to set up hall demonstrations each week. There were five

other professors at that time, each of whom had the five offices available in the Johnson building. Harald had a desk in the stockroom, and even though he was retired, he still arranged the hall demos and occasionally taught a course. Mike dubbed the experiments, “Harald’s bag of tricks.” Hall demos allowed all students to “play with this,” without calculations, judgement or write-ups. Fast forward to 1988, after Mike returned to teach at LFC. Harald came for a visit and showed Mike his secret supplies cabinet in the basement. Mike felt that Harald’s legacies are the demonstrations used to start each lecture at Lake Forest College, as well as the Harald Jensen Award for a Senior Thesis in Experimental Physics and the new Harald C. Jensen Endowed Chair for Physics, thanks to the generosity of Harald and Virginia’s son, J. Chris Jensen<sup>60</sup>.

Even though he isn’t a Lake Forest College alumnus, Roy Coleman spent an academic year of Friday evenings at LFC taking Harald’s course for high school AP Physics teachers, as well as many monthly ISPP meetings with Harald as the de facto leader. In a March 2021 email Roy said that he had three outstanding teachers in his life. Two were at his high school, Morgan Park in Chicago, and the third was Harald Jensen. Roy’s high school physics teacher, Jens Midtaune, often used demonstrations to get the high schoolers engaged. After Roy graduated from college and started teaching high school physics himself, Mr. Midtaune insisted Roy take Harald’s course for high school AP Physics teachers, and when Roy hesitated (it was a long drive to Lake Forest from his school’s southwestern Chicago neighborhood) Mr. Midtaune confessed that he

got many of his ideas for demonstrations from Harald Jensen. Roy enrolled and attended every class. He recalled demos set up in the hall, which got the AP teachers talking before class. He also remembers Harald starting each class with a phenomenon which sparked discussion. And they always worked! Even something pulled from a shelf at the last minute! Roy was impressed!

After a dinner break they conducted AP experiments in small groups, with Harald circulating and asking the questions they should ask of their students. Roy brought a new, struggling high school teacher to an ISPP meeting with Harald and she claimed it was the most inspiring thing she'd ever seen. Her attitude changed, she started building new apparatus and really enjoyed teaching physics. In the 1970's, a number of teachers were given awards at a CSAAPT meeting and most credited Harald with being their biggest inspiration. Roy recalls Harald coming up to them later and saying, "please don't give me credit, I only planted the seeds, you grew the crop."<sup>61</sup>

A mathematics professor at Lake Forest College, Robert Troyer, remembers that Harald disliked giving tests to students and relished his time in the teaching laboratory. Harald confided to Bob that he could "judge a student's grade by the way they performed in the lab." Anecdotally, this resulted in lots of "A" grades for his students.<sup>62</sup>

A 1980's letter from Harald to Pete Insley, an ISPP member, a retired Physics teacher at Whitney Young High School in Chicago, and a professor at Columbia College, mentioned that



Harald felt teachers today placed too much emphasis on how much and not on why.

“Quantitative descriptions should only come after qualitative ones. Problems do more to discourage students than to motivate them.”<sup>63</sup>

### Harald’s Lasting Impact on Lake Forest College

As stated before, current Lake Forest College physics professors still begin most lectures with an eye-catching (sometimes ear-catching) demonstration, which segues into that lecture’s topic. The college still has demonstrations set up in the hallways for any passing student, professor, or guest to use, watch and ponder; we’ve had steel balls racing on various tracks, pendulums, balanced beakers of water, demos with empty soda cans, among others. Harald and fellow professors Bailey Donnally, TJ Jeong and Roger Faber put Lake Forest College on the national stage, especially in the 1960s and 1970’s. A lasting legacy at Lake Forest College is the Harald C. Jensen Prize for the outstanding student thesis based on their independent physics research. Recently, Lake Forest College announced the new Harald C. Jensen Endowed Chair for Physics, thanks to his son, J. Chris Jensen.

### The 1970’s, Retirement and 1974 Millikan Award

Harald officially retired from Lake Forest College in June 1973, but continued his association with the College for many more years. He received a General Radio “Type 107 Variable Inductor” as a souvenir, and this writer is sure that Harald appreciated the antique. It was manufactured by

General Radio somewhere between 1918 and 1927, judging from vintage catalogs.<sup>64</sup>The inductor bears a plaque that states, “Many Thanks to Harald Jensen, Lake Forest College, In Appreciation for his Help, Guidance, Inspiration and Encouragement, From the Physics Teachers of Illinois, June 4, 1973.” Harald also received a set of binoculars, with the inscription on the case, “Harald Jensen, Teacher of Teachers, From the Teachers of Illinois.”



Figure 9: Type 107 Variable Inductor, circa 1918-1927

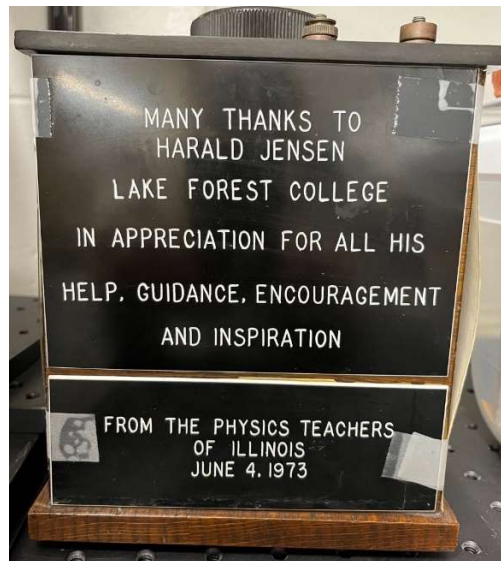


Figure 10: Plaque on Variable Inductor for H.Jensen

Letters of retirement congratulations arrived from Frederick Metcalf, University of California, Riverside, who wrote of, “the finest teacher I encountered as an undergraduate ... [you] established a teaching career to be envied and modeled.”<sup>65</sup> Locally, Robert Waller at the University of Illinois wrote, “Your dedication to teaching and students provided me with a model to emulate in my own teaching...thank you for the educational experience then and the practical example now.”<sup>66</sup> The President of Lake Forest College, Eugene Hotchkiss wrote, “Your prizes and your honors are exceeded only by the respect and affection of your students, past and present. You have contributed to the College and to its reputation as few men have; and you have contributed to the faculty as few of their number have.”<sup>67</sup>



*Figure 11: Harald and Virginia at LFC graduation 1970*

In 1974, Harald was awarded the prestigious Robert A. Millikan Lecture Award for Teaching Excellence, given for “notable and creative contributions to the teaching of physics” by the AAPT. He accepted the Award and gave his Millikan Speech, “A Retired Teacher Reminisces” at the AAPT

annual meeting held at Appalachian State University in Boone, NC, June 1974. The seventeen page essay is unofficially subtitled: “A Person Can Do Quite a Lot If He Has Encouragement and Help.” In it, Harald starts with “appreciation to those who...provided him with opportunities” and then gives a lively chronological account of how he became a great teacher and those who influenced his path. As stated before, Harald credited his former professor at the University of Iowa, “G.W. Stewart, and his desire for excellence in physics,”<sup>68</sup> with the seeds for creative new apparatus and the phenomenological approach attributed to Harald. Harald states, “As far as I am concerned, the climax of this effort has been the inception and progress of the Illinois State Physics Project.”<sup>69</sup> The speech is a lovely reflection of over forty years of learning, teaching and creativity.



*Figure 12: Harald Jensen's 1974 Millikan Award Medal*

Harald received numerous accolades and congratulations from all over the country upon receiving the Millikan Award. Former students, colleagues, members of committees he served

on all wrote kind letters of deserving congratulations. Arnold Strassenburg, Executive Officer of the AAPT wrote, "...I do not believe that I have ever observed an audience that was more moved by the speech of a physics teacher."<sup>70</sup>

After retiring from Lake Forest College in 1973, Harald and Virginia remained as Lake Forest residents for five more years. The Jensens moved to sunny California in 1978, settling near their son, Chris, in La Jolla, near San Diego. Harald set up a shop at his son's house where he crafted unique woodworking pieces, including jewelry boxes, clocks, chess boards, jewelry and lamps with exotic wood. Virginia and Harald entertained many visitors from Harald's past, students, colleagues and administrators. He kept up a lively correspondence with teachers, students and professors all over the country, but especially with Earl Zwicker in Illinois. The ISPP newsletters from the 1980's and 1990's referred to Harald several times, and members re-introduced some of Harald's demonstrations for newcomers. The Jensens continued to vacation in Estes Park, Colorado, and "detoured" to Lake Forest "on the way home" in the summer of 1988 to visit the LFC campus and old haunts. Harald also grew African Violet plants at home in California. He and Virginia enjoyed spending time with their west-coast based children and five grandchildren.

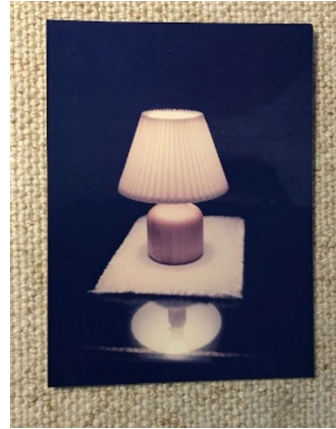


Figure 13: Clock and table lamp made by Harald Jensen

In 1983 Harald returned to Illinois to participate in a summer institute for science teachers at Fermilab in Batavia, IL. A reporter for the *Chicago Tribune* shared that when Harald went to the front of the classroom and “[b]ellowed, Eureka!...the tempo of the class, ‘The Teaching of Science,’ picked up from andante to allegro.” And farther along the reporter quotes Harald, “Unless we can convince them that they can participate in this activity... then we won’t go anywhere. It doesn’t matter what we teach, it’s how we teach it.”<sup>71</sup>



Figure 14: Harald and Virginia's 50th anniversary 1984

After a long, relaxing, well-deserved retirement, Harald’s health began to decline in 1992.

He passed away November 29, 1994, in California at the age of 86 years. His ashes were scattered at the beloved Bear Lake, Colorado. Even though he lived in La Jolla, the San Diego *Union Tribune* published a long and glowing obituary for Harald on December 1, 1994.<sup>72</sup>




*Figure 15: Harald and Virginia November 20, 1994*

### Ernest Jensen, Harald Jensen's Younger Brother

A little side bar about Ernest. Ernie was born in 1915 and joined the U.S. Army in 1941, at age twenty-six. At that time he was a manager in training at F.W. Woolworth in Cedar Rapids and engaged to Miss Martha Zuber. He was sent for advanced training at the British Commando school in Northern Ireland and was selected to become a member of Company D of the 3<sup>rd</sup> U.S. Army Ranger Battalion ("Darby's Rangers"). He was involved in invasions of Algiers (1942), Sicily (1943) and Italy (1944). Tragically, Ernest died January 1944 during the attack on Cisterna, Italy. Ernie was buried at the Soldiers Cemetery of Cisterna, Italy, but at his mother's request he was brought back to Iowa for burial at Greenwood Cemetery, Cedar Falls, Iowa.<sup>73</sup>




Figure 16: Ernest with nephew Chris, 1939



Loved, Honored, Remembered

**ERNEST R. JENSEN**  
 Second Lieutenant  
 U. S. Army  
 World War II  
 Killed in Action 30 January 1944



Purple Heart

MEDALS-RIBBONS: American Campaign, European-African-Middle Eastern Campaign, World War II Victory

While infiltrated deep behind German lines to capture Cisterna, Italy, the Rangers encountered a deadly enemy ambush. Out of 767 men in the Rangers' attack only six returned.






Figure 17: Ernest Jensen plaque at Mt. Soledad Veterans Memorial



Harald and Virginia's son James Christen "Chris" Jensen, 1937 – 2021

Chris Jensen was the force behind this retrospective of his father, Harald Jensen. He started thinking of this project over ten years ago, but it never got off the ground. Chris donated many artifacts to Lake Forest College on behalf of Harald, among them, his Millikan Medal, the antique Variable Inductor and binoculars that Harald received upon retiring, numerous journals with articles and letters by his father and a trove of correspondence. Once the college had all this material, it was just a matter of going through the artifacts, quizzing Chris if there were questions, sending Chris links to things he didn't know his dad participated in, and delving deeper into facts, if we could find and verify them. Chris (and his nephew Brian Smith) supplied many family photos to add to the piece.

Chris was a *force majeure* in his own right. He was a decorated Navy pilot, and after his Navy career as a test pilot, a helicopter flight instructor and a world traveler when he worked abroad in India, Kashmir, Korea and Indonesia. He married Gail Pastman in 1987 and traveled with her to Baja, California, the Caribbean (where they once chartered a trimaran), Maui (twenty-four visits!), Bali, Jakarta and Spain. They also spent time at the family cabin in Estes Park, CO. Together they shared a fondness for dancing and water skiing.

Among the many high points of his life, Chris got to brief John Wayne for a helicopter

flight with Chris' carrier squadron during the filming of "*In Harm's Way*." He also picked up two NASA Mercury astronauts on their splashdowns in the Pacific in 1962 and 1963. To cap off his career, he was selected for lifetime membership to the Society of Experimental Test Pilots, joining the highest echelon of pioneering pilots and astronauts.<sup>74</sup>

This writer got to know Chris through phone calls and emails. He was an avid reader and knew a lot of history. When I mentioned my father's interest in Captain Eddie Rickenbacker, WWI flying ace, Chris found and read three books by Rickenbacker. He liked his little white Mustang "pony car." He discounted his helicopter crashes, calling them "adventures." And there were a few. Chris had a great sense of humor and shared jokes. If this was what he was like as a youngster, I feel for his family!

Sadly, Chris passed away before the interviews were finished for this piece. He did get to read an earlier draft and he liked it. Even though the manuscript focuses on Harald Jensen, I dedicate this to the direct tie I had to Harald, his son, Chris Jensen.



Figure 13: James Christen Jensen 1937-2021

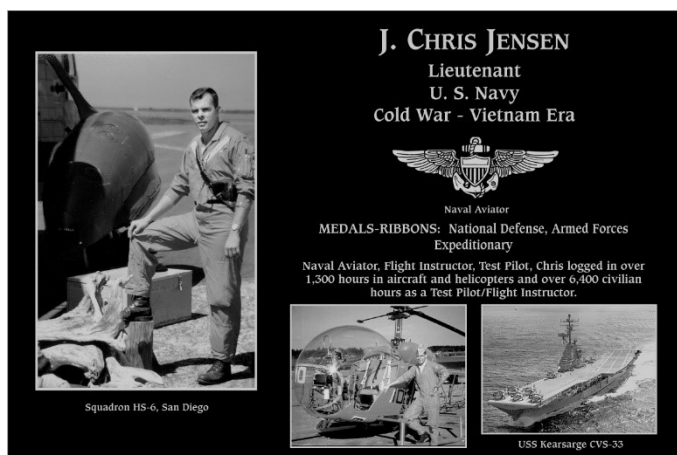


Figure 14: J Chris Jensen's plaque at Mt Soledad, CA

Author Barbara Sesterhenn MT(ASCP), MBA

Barbara Sesterhenn is the lab supervisor for the physics department at Lake Forest College. For sixteen years prior to this position, she was laboratory supervisor at LFC's chemistry department. She still looks forward to the first week of school.

Harald Jensen's Honors, Awards, Prestigious Committee Memberships and Offices Held

- 1942-44 Coordinator of Civilian Pilot Training Program, Palwaukee Airport and Lake Forest College
- 1956 Winner, University of Iowa apparatus competition for "A New Hysteresis Demonstration"
- 1958-60 President, Chicago Section of AAPT (CSAAPT)
- 1959 Producer of 2 films (of a series of 70) by Physical Science Study Committee of Cambridge, MA. Sponsored by NSF.
- 1959-61 Director, National Science Foundation-sponsored In-Service Institute for Secondary School Physics Teachers
- 1963 Apparatus consultant, for AIP, surveying apparatus at universities in London, Manchester, Paris, Padua, Freiburg, Kiel, Giessen and Copenhagen.
- 1964-5 Member, AP Physics Board, College Entrance Exam Board
- 1965-6 Honorary Research Associate, Harvard University
- 1966 Co-chairman of Harvard Project Physics, Cambridge, MA (laboratory development)
- 1966-7 Co-chairman, AAPT Apparatus Committee for Educational Institutions
- 1966 AAPT Distinguished Service Citation
- 1967 Founding member of Illinois State Physics Project
- 1970 Director of Apparatus Exhibits, International Congress of Education of Teachers of Physics in Secondary Schools, Eger, Hungary
- 1971, 72, 73 Outstanding Educator of America (a published list in volumes)
- 1974 Robert A. Millikan Lecture Award from American Association of Physics Teachers
- 1975 University of Northern Iowa Alumnus Achievement Award

### Harald C. Jensen Sayings

“Start with the phenomenon.”

“If you can't show it, don't teach it.”

“Talk about something that is happening and hardly ever about abstract symbols.”

“Physics teachers are like baseball players because both get paid for something that each would be doing without pay.”

“Phenomenological is when the student has acted as both a student and a teacher.”

“Let the phenomena do the teaching.”

“See, now I have your attention and can teach you something.”

“Teach the phenomena.”

“Tell me and I'll forget. Show me and I may remember. Involve me and I'll surely learn.”

“I like to see that Mental Smile when understanding dawns.”

“Look carefully at Nature.”

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Harald C. Jensen, "A Modified Barlow's Wheel," American Journal of Physics, Vol 21, No 12, p 692 (December, 1953)

Harald C. Jensen and Robert Cashman, "Distribution of Trapping Levels in Cadmium Selenide," Physical Review Journal, Vol 96, p797, (November, 1954)

Harald C. Jensen, "Velocity of Sound in Metals," American Journal of Physics, Vol 23, p.246 (April 1955)

Harald C. Jensen, "An  $s=r\theta$  Demonstration," American Journal of Physics, Vol 23, p 299 (May 1955)

Harald C. Jensen, "Production of Chladni Figures on a Vibrating Plate Using Continuous Excitation," American Journal of Physics, Vol 23, No 8, pp 503-5 (1955)

Harald C. Jensen, "New Demonstrations of the Hysteresis Loop in Iron," American Journal of Physics, Vol 25, No 5, p 384 (May 1957)

Harald C. Jensen, "A Cartesian Diver," School Science and Mathematics, Vol 57, No 5, pp 387-8 (May 1957)

C.R. Kannewurf and Harald C. Jensen, "Coupled Oscillations," American Journal of Physics, Vol 25, No 7, pp 442-445, (July 1957)

Harald C. Jensen, "AAPT Summer Meeting," Physics Today, Vol 10, No 8, p 46 (August 1957)

Harald C. Jensen, "Theory for Simple Machines," American Journal of Physics, Vol 25, No 9, pp 599-602. (September 1957)

Harald C. Jensen, "Proceedings of the American Association of Physics Teachers Schenectady Meeting June 20-22, 1957," American Journal of Physics, Vol 26, No 1, p 48 (January 1958)

Harald C. Jensen, "Storage Battery Connections," American Journal of Physics, Vol 26, No 5, p 342 (May 1958)

Harald C. Jensen, "Pulse Sources," American Journal of Physics, Vol 27, No 4, p281 (April 1959)

Harald C. Jensen, "An Adjustable Single Slit," American Journal of Physics, Vol 33, No 3, p245 (March 1965) (Letter to Editors)

Harald Jensen, G. Schwartz, Alan Barde (Harvard Project Physics) "A Variable Frequency Switch (audio amplifier substitute)", American Journal of Physics, Vol 34, No. 10, pg xv, (October 1, 1966) (Apparatus Notes)

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Harald C. Jensen, "Notes: Illinois State Physics Project: Have enrollments increased?" The Physics Teacher, Vol 9, p 96 (Feb 1971)

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<sup>2</sup>Spring Term Commencement Program, Graduation of Second Section, Class of 1930. Iowa State Teachers College. Conferred June 2, 1930. Page 14.

<sup>3</sup>Iowa State Teachers College. *Old Gold 1930*. [www.scholarworks.uni.edu/uni\\_yearbookS/95](http://www.scholarworks.uni.edu/uni_yearbookS/95). Page 58.

<sup>4</sup>Ibid.

<sup>5</sup>Greg Smith, "Harald Jensen Video." July 5, 1991. Minute 46.

<sup>6</sup>Harald C. Jensen. "A Retired Teacher Reminisces." The Millikan Lecture, 1974 Meeting of AAPT at Appalachian State University, June 1974. Page 3.

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<sup>9</sup>Jack Williams. "Harald Christen Jensen; was known as a mentor for physics teachers." *San Diego Union-Tribune* Obituary. December 1, 1994. Page B10.

<sup>10</sup>Harald C. Jensen. "A Retired Teacher Reminisces." The Millikan Lecture, 1974 Meeting of AAPT at Appalachian State University, June 1974. Page 9.

<sup>11</sup>"History of the Whizzer Motor Bike." [whizzermotorbike.com/History.html](http://whizzermotorbike.com/History.html) Pages 1-2.

<sup>12</sup>J. Chris Jensen, personal email to Barb Sesterhenn. June 8, 2021

<sup>13</sup>CJ Gregg Spenser. "Crisis in Education. The Effects of the Cold War on the American Education System." Young Historians Conference, 2016. Pages 1-2.

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<sup>15</sup>Harald C. Jensen. "A Cartesian Diver." *School Science and Math*. Vol 57, Issue J, May 1957. Pages 387-388.

<sup>16</sup>Harald C. Jensen and Robert J. Cashman. Distribution of Trapping Levels in Cadmium Selenide." *Physical Review Journal*. Vol 96, November 1954. Page 798.

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<sup>18</sup>Jacques Cattell. *American Men of Science: A Biographical Dictionary*. Science Press. Lancaster, PA. 8<sup>th</sup> Edition. 1949.

<sup>19</sup>Roy Coleman, personal email to Barb Sesterhenn. April 11, 2021.

<sup>20</sup>Earl Zwicker. "The Chicago Area ISPP Group. *The Physics Teacher*. Vol 17, December 1979. Page 580.

<sup>21</sup>Harald C. Jensen. "A Retired Teacher Reminisces." The Millikan Lecture, 1974 Meeting of AAPT at Appalachian State University, June 1974. Pages 9-10.

<sup>22</sup>Fritjof E. Christenser. "Toward improved Apparatus and Better Experiments." *The Physics Teacher*. December 1974. Page 566.

<sup>23</sup>Earl Zwicker. "The Chicago Area ISPP Group." *The Physics Teacher*. Vol 17. December 1979. Page 581.



- <sup>24</sup>Hearings of HR8664 and HR15271. "Statement of Prof. Harald C. Jensen, Chairman, Committee on Apparatus for Educational Institutions, American Association of Physics Teachers.." July 1966. Pages 215-217.
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- <sup>40</sup>Ibid. Page 580.
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- <sup>52</sup>William Butler Yeats. [www.brainyquote.com/quotes/william\\_butler\\_yeats\\_101244](http://www.brainyquote.com/quotes/william_butler_yeats_101244).
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- <sup>59</sup>Jonathan Kiell. Personal telephone interview with Barb Sesterhenn. March 4, 2022
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- <sup>63</sup>Harald Jensen. Personal letter to Pete Insley. Undated. Quoted in *ISPP Reminder*. August 1991. Page 1.
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- <sup>71</sup>Barbara Mahany. "Teachers get booster shot of education." *Chicago Tribune*. 1983. (supplement, no page)
- <sup>72</sup>Jack Williams. "Harald Christen Jensen was known as mentor for physics teachers." *San Diego Union Tribune*. December 1, 1994. Page B-10.
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Appendix: Grading Sheets and Lake Forest College Bulletins/Course Catalogs  
 Final Grading Sheets

RETURN TO REGISTRAR'S OFFICE - 8/15/42 - SEMESTER REPORT LAKE FOREST COLLEGE		RETURN TO REGISTRAR'S OFFICE - 8/15/42 - SEMESTER REPORT LAKE FOREST COLLEGE	
Semester Summer Session Year 1941-42		Semester Summer Session Year 1941-42	
Department Physics Course No. 3.9 Credit		Department Physics Course No. 3.15 Credit 3 hrs.	
Descriptive Title of Course Electrical Measurements		Descriptive Title of Course Navigation & Meteorology	
Instructor Mr. Harold Jensen		Instructor Mr. Harold Jensen	
NAME OF STUDENT	FINAL GRADE	NAME OF STUDENT	FINAL GRADE
1 Aishton, Richard (3hrs)	B+	1 Braun, Ger	B+
2 Callison, Earl (3hrs)	C	2 Holub, Aisle	C
3 Fordney, Mary (3 hrs.)	C+	3 McCall, Stewart	C+
4 Holub, Aisle (3hrs)	C	4 Rhine, Robert	Drop
5 Rohde, Kenneth (2hrs)	A+	5 Riechers, Robert	A
6 Soderquist, Wallace (3hrs)	H-	6 Rosen, Raymond	B
7 Stanton, Arthur (3 hrs)	Drop	7 Salvo, Len	C
8 John, Robert (3 hrs)	A-	8 Schreck, Raymond	A-
9		9 Snow, Selma	D-
10 Physics 310, Electrical Measurements		10 Soderquist, Wallace	A-
11 John, Robert, (3hrs)	H	11 Wilson, Harry	C-
12 Rosen, Raymond (3hrs)	C+	12 Youngs, William	C
13		13	
14		14 Physics 31, General Physics, 4 hrs.	
15		15 Strahel, Raymond	Drop
16		16 Steiner, Beth	C+
17		17	
18		18	
19		19	
20		20	
21		21	
22		22	
23		23	
24		24	
25		25	
26		26	
27		27	
28		28	
29		29	
30		30	

*All 5-9 students except John completed hrs. of work and are graded on that basis.*

Figure 15: Grading Sheets Summer, 1942

Lake Forest College Course Catalog:

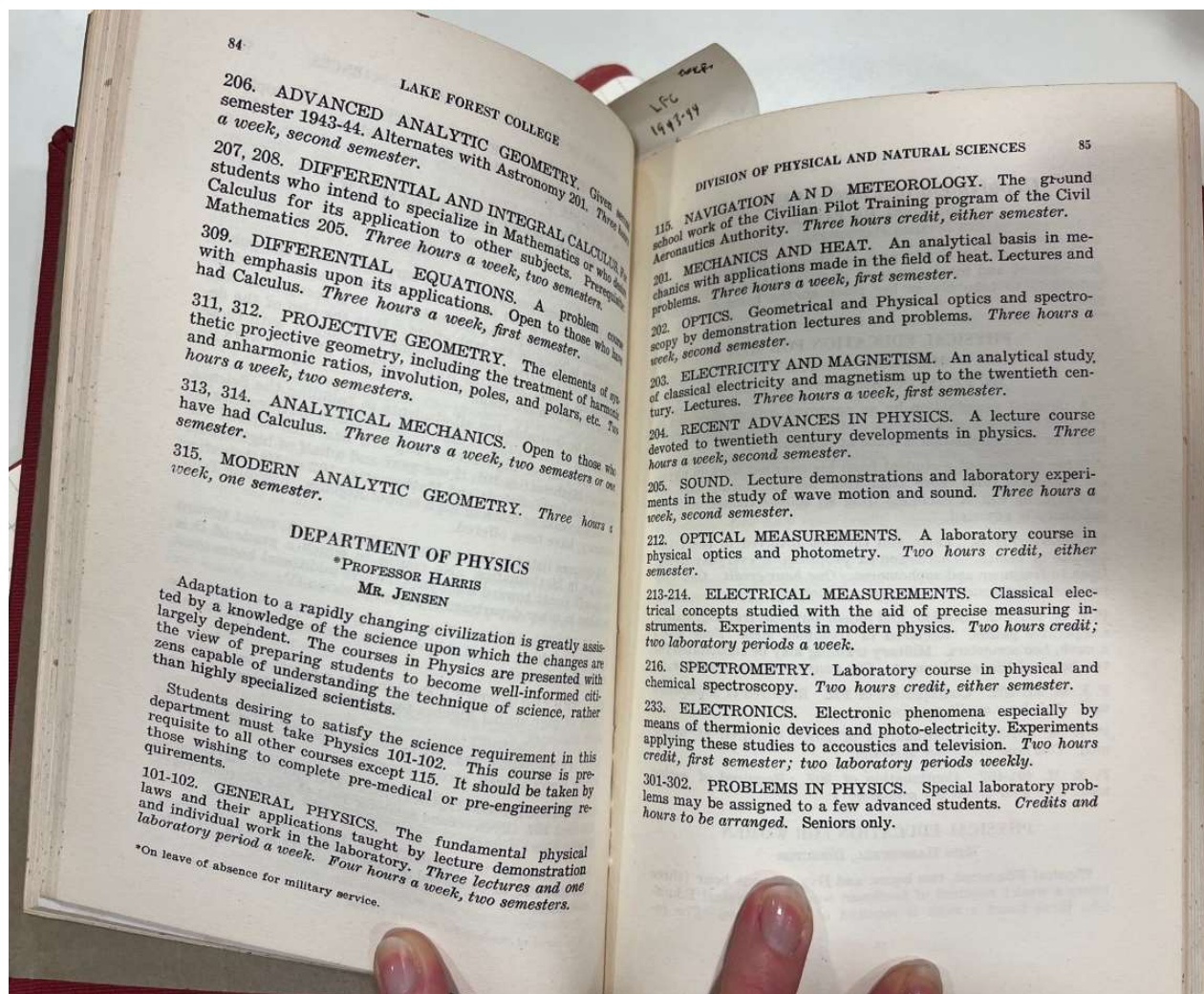


Figure 16: LFC Bulletin/Course Catalog, 1943-4



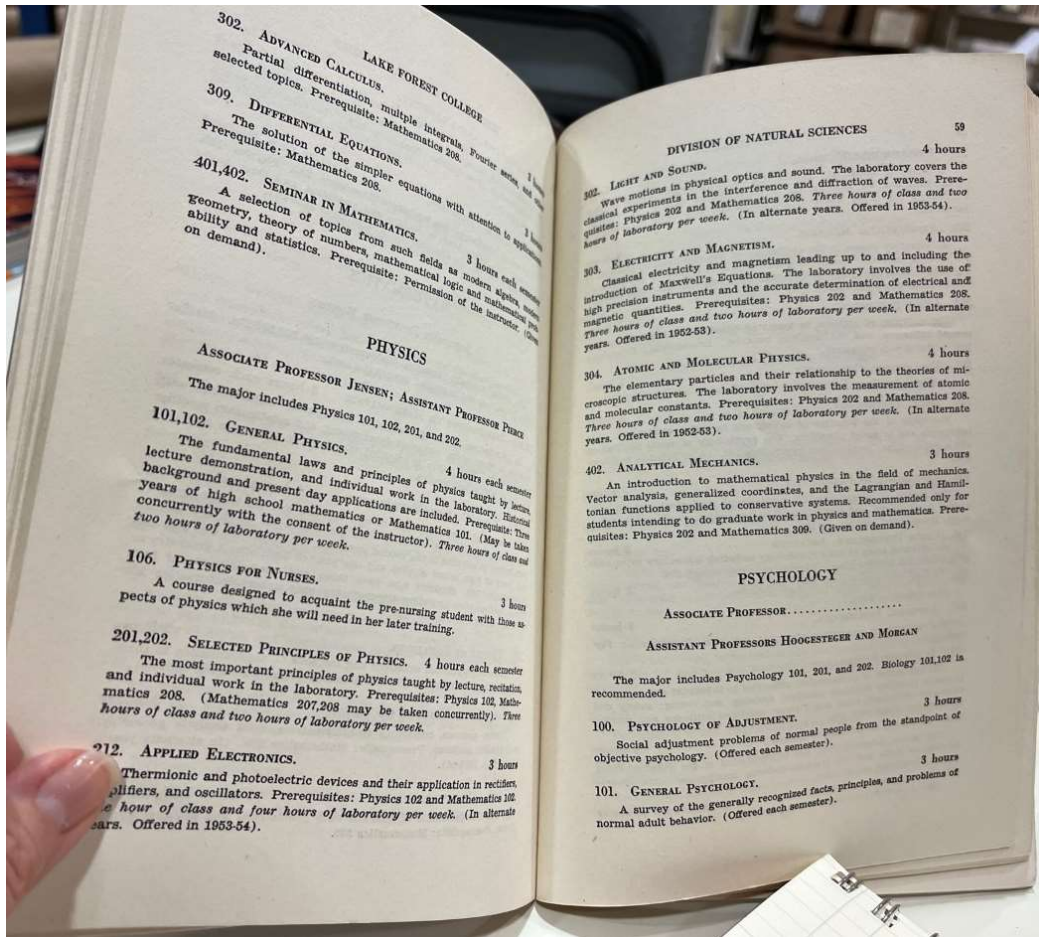


Figure 17: LFC Bulletin/Course Catalog 1952-4

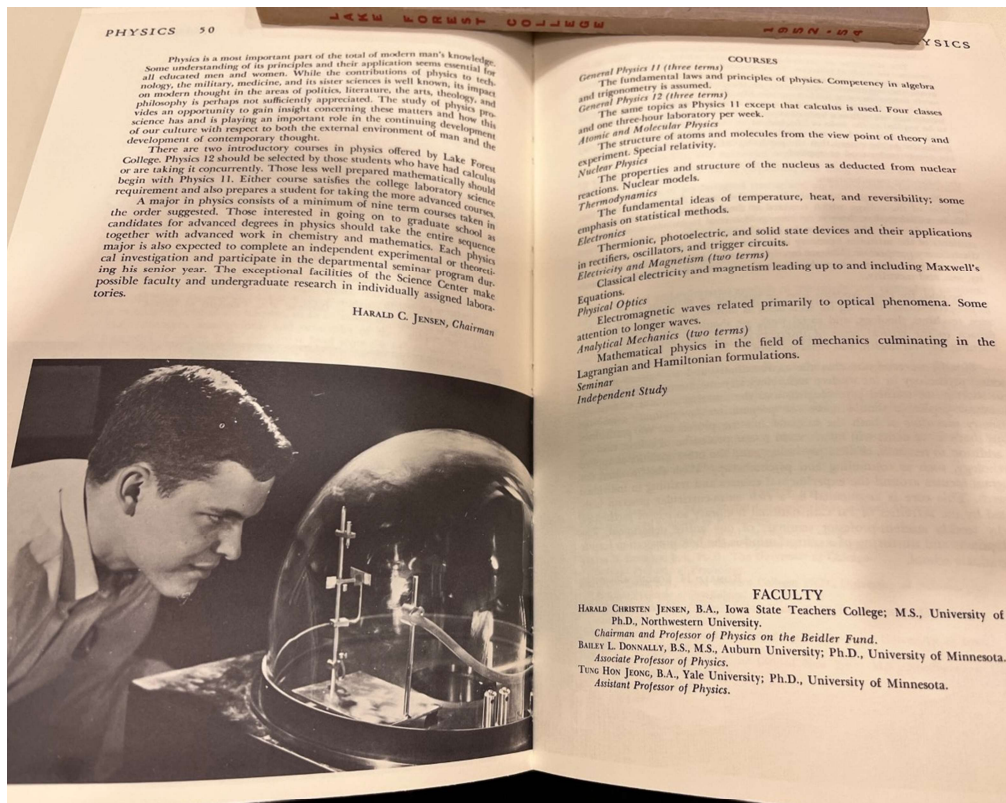


Figure 18: LFC Bulletin/Course Catalog 1963

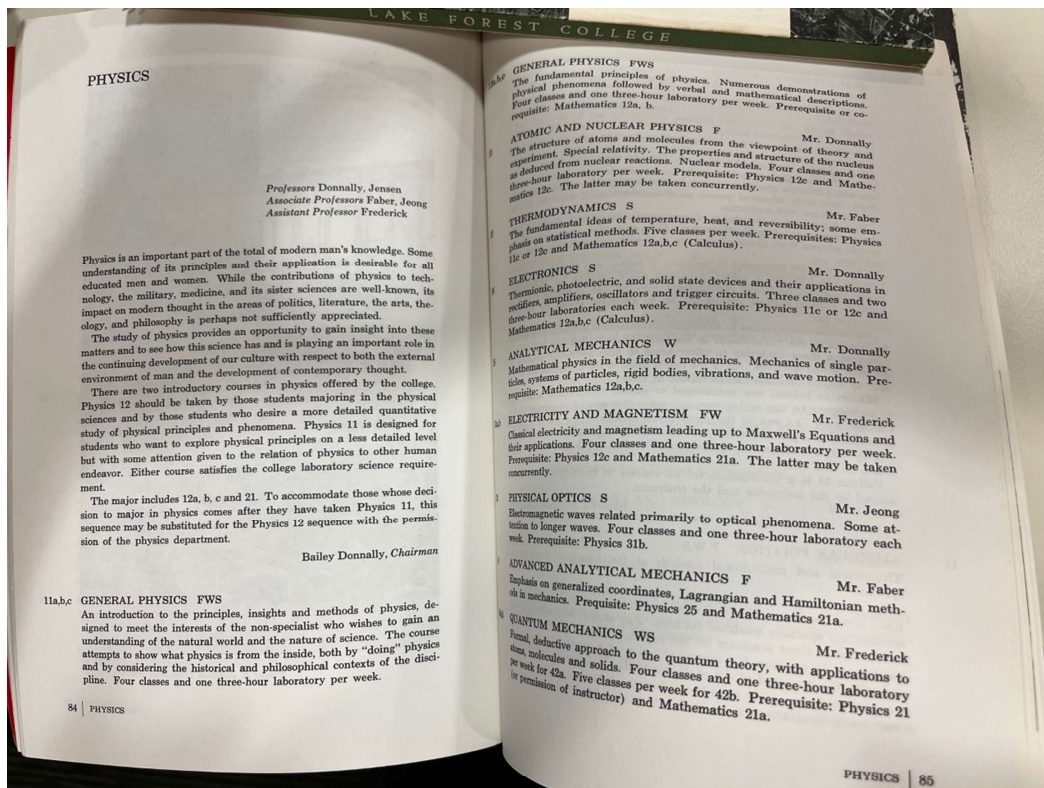


Figure 19: LFC Bulletin 1972-4

