Information About David Garvin Moursund

Introduction

Dr. David Garvin Moursund, Professor Emeritus of the University of Oregon, passed away on September 1, 2021, in Florence, Oregon, after a relatively short battle with stage 4 lung cancer. He was 84 years old. Dr. Moursund was the 1979 founder of the International Society for Technology in Education (ISTE) and mathematician, computer scientist, teacher, author, mentor, and friend to so many.For information please see IAE Newsletter Issue #313, "A Tribute to David Moursund".

Moursund established the first American doctoral program in the field of Computers in Education, and was the major professor or co-major professor for 76 doctoral students in that program. He was also major professor for six doctoral students in mathematics, three at Michigan State University and three at the University of Oregon.

Moursund has presented hundreds of professional talks and workshops. He has authored or coauthored more than 70 academic books. He has published extensively.

Moursund's professional career includes founding the International Society for Technology in Education (ISTE) in 1979 (originally the International Council for Computers in Education), serving as ISTE's executive officer for 19 years, and establishing ISTE's flagship publication, *Learning and Leading with Technology* (now published as *Empowered Learner*).

In 2007, Moursund founded Information Age Education to provide free online educational technology materials via its *IAE-pedia, IAE Newsletter, IAE Blog,* and books.

Information Age Education is now fully integrated into the 501(c)(3) non-profit corporation, Advancement of Globally Appropriate Technology and Education (AGATE) established in 2016.

The Agate website at features Spanish translations of some of the IAE publications. This includes the second edition of Moursund's newest book, *The Fourth R,* now also available as *La Cuarta 4.* A number of the *IAE Newsletters* also are available in Spanish.

Education

Ph.D. (Mathematics, specializing in Numerical Analysis), University of Wisconsin-Madison, 1963.

M.S. (Mathematics), University of Wisconsin-Madison, 1960.

B.A. (Mathematics, minor in Physics), University of Oregon, 1958.

High School diploma, Eugene High School, 1954. (Grade 12 at Eugene High School; Grades 10-11 at University High School; grades 7-9 at Roosevelt Junior High School; grades 1-6 at Condon Elementary School; all in Eugene, Oregon.)

Professional Career

University

Emeritus Professor, University of Oregon, 2002 to present.

Professor of Education, University of Oregon, 1982-2002.

Professor of Computer & Information Science, University of Oregon, 1976-1986.

Associate Professor, Department of Computer Science, University of Oregon, 1969-1976. (Department Chair, 1969-1975.)

Associate Professor, Department of Mathematics, University of Oregon, 1967-1969.

Associate Professor, Department of Mathematics and College of Engineering (Computer Center), Michigan State University, 1966-1967.

Assistant Professor, Department of Mathematics and College of Engineering (Computer Center), Michigan State University, 1963-66.

Instructor, Department of Mathematics, University of Wisconsin-Madison, January, 1963-June, 1963.

Major professor or co-major professor for 82 doctoral students. The first three were at Michigan State University and 79 at the University of Oregon. See students' names and dissertation titles at https://www.genealogy.math.ndsu.nodak.edu/id.php?id=8415.

International Society for Technology in Education (ISTE)

Editor-in Chief of ISTE Publications and Executive Officer for Research and Development, International Society for Technology in Education (ISTE), July, 1998 to March, 2001. Retired from ISTE March, 2001.

Editor-in-Chief of ISTE Publications and Chief Executive Officer, ISTE, 1989-1998.

Editor-in-Chief of ICCE Publications and Chief Executive Officer, International Council for Computers in Education (ICCE), 1979-1989. (Name of professional organization changed to International Society for Technology in Education in 1989.)

ISTE, the International Society for Technology in Education

David Moursund was one of 47 educators who met in Eugene, Oregon, on November 5, 1971, to found the Oregon Council for Computers in Education (OCCE). In May of 1974, Moursund published the first issue of the *Oregon Computing Teacher* magazine for OCCE members and other subscribers. This publication was

funded by a five-year, multi-million dollar statewide math education grant from the National Science Foundation. Moursund was in charge of the computer component of that grant.

ISTE evolved from the Oregon Council for Computers in Education through a contribution from Robert Albrecht. In 1979, Albrecht offered Moursund his *Calculators/Computers Magazine.* This contribution included some not-yet-pubilshed articles and connections with a number of advertisers in the magazine. This created a need for the *Oregon Computing Teacher* to go commercial, and thus led Moursund in 1979 to expand OCCE to become the International Council for Computers in Education (ICCE). The *Oregon Computing Teacher* became *The Computing Teacher* with its first issue published in May, 1979.

Moursund was Chief Executive Officer of the newly created ICCE and editor of *The Computing Teacher* when ICCE decided to hold its first conference in 1979 in collaboration with the newly established National Education Computing Conference (NECC). NECC was an outgrowth of the Computer Conference on the Undergraduate Curriculum (that is, the undergraduate *college* curriculum) that had been held for the previous nine years under National Science Foundation sponsorship. ICCE's initial goal was to broaden the scope of this conference to include precollege educators. After many years, the precollege orientation had grown to be the dominant part of the conference, with ISTE playing a greater and greater leadership role, and it eventually became the ISTE Conference.

The title of *The Computing Teacher* was changed in 1995 to *Learning and Leading with Technology* and Moursund served as Editor-in-Chief from its inception until his retirement from ISTE in 2001. During this time span, most issues of the journal contained an editorial or editor's message written by Moursund, with occasional guest editorials. Most editorials focused on timely but ongoing topics, identifying a problem and providing ideas on possible solutions to the problem. Over the ensuing years, *Learning and Leading with Technology* has evolved into ISTE's flagship journal, *Empowered Learner.*

ISTE today has individual members and/or affiliates in more than 130 countries worldwide and its annual conferences each attract more than 20,000 attendees.

IAE and AGATE

In July, 2007, Moursund created Information Age Education (IAE) as a nonprofit corporation in the state of Oregon. In 2016, He created the 501(c)(3) nonprofit corporation Advancement of Globally Appropriate Technology and Education (AGATE) that now owns IAE. The goal of these two companies is to help to improve teaching and learning by people of all ages and throughout the world. By June, 2019, their online publications have had more than 16 million hits.

Article about Moursund's Retirement from ISTE

ISTE honored me upon my retirement from ISTE in March, 2001. The following article is reprinted with permission from ISTE® (International Society for Technology in Education), © 2001, www.iste.org. All rights reserved.

Educational Technology Pioneer Retires from ISTE

After more than thirty-five years of service and groundbreaking leadership in the field of educational technology, former ISTE Editor and Executive Officer, Dr. Dave Moursund has retired from ISTE. In the following article, past students and colleagues share their candid reflections on Dave's career, unique personality, and his vision for a revolution in education.

Revolutionary Vision

Dr. Moursund has organized and run many IT-oriented training programs for teachers. This began with National Science Foundation programs run in the summers of 1966 and 1967 at Michigan State University. During 1966–67 he was the lead author of a book that integrated routine computer use into a mathematics course. His 1967 book, *Elementary Theory and Application of Numerical Analysis* (McGraw-Hill) is still in print through Dover. Dr. Moursund joined the University of Oregon faculty in 1967, with a joint appointment in the Computer Center and the Department of Mathematics. As the first Chair of the UO Computer Information and Science Department (1969–1975), Dr. Moursund helped to initiate the first Ph.D. degree program and second Master's degree program in the field of Computers in Education in the United States in 1971 and 1970, respectively.

> “Dave had an incredible impact on our field, he was raising questions, important questions, before most anybody. He is certainly the one who influenced me the most,” says Dr. Neal Strudler, College of Education, University of Nevada, Las Vegas, a past employee of ISTE and one of Dr. Moursund's former doctoral students.

Exceptional Scholar

Dr. Moursund received his doctorate in mathematics from the University of Wisconsin-Madison in 1963. He has since authored or co-authored more than 60 books and several hundred articles in the field of computers in education. In addition to positions at the UO, other academic highlights include work as Assistant Professor (1963–66) and Associate Professor (1966–67) in the Department of Mathematics and College of Engineering (Computer Center) at Michigan State University.

“He's one of those that I would call an 'old-timer',” says Dr. Gary Bitter, ISTE's first elected president (1990–91). “Dave was one of the original people who had a great deal of understanding for the philosophy of the role of technology in computer education and a talent for getting people together to support the movement. He's been a truly great friend and colleague. I certainly admire and respect all that he's done.”

Powerful Leader

Dr. Moursund founded the International Council for Computers in Education (ICCE) in 1979 and served as executive officer of the organization from 1979 to 1989. During his time with ICCE, he started the publication *Oregon Computing Teacher* that later became *The Computing Teacher,* predecessor of the current *Learning & Leading with Technology.* After ICCE merged with IACE, the International Association for Computing in Education, to become the International Society for Technology in Education (ISTE) in 1989, he served as executive officer of ISTE from 1989–98.

David Brittain, Partner, MGT of America, Inc., and an ISTE past president, highlights Dr. Moursund's leadership contributions and especially appreciates all that Dr. Moursund has done for ISTE: “It is with mixed feelings that I learned that Dave Moursund is retiring. Very few if any members of our educational technology industry have had the impact on teaching and learning that Dave has had. Dave's vision for the use of technology in education, which he has shared through his publications and presentations, has enabled many of us to see better ways of helping teachers become more comfortable and proficient with technology. He is one of those few individuals about whom it can be truthfully said that he has made a significant difference in the lives of teachers and students across the country.”

Lasting Legacy

Dr. Bonnie Marks, ISTE past president and Director of Technology for the San Francisco Bay Area Region of the California Technology Assistance Project, shares her reflections: “Few people have influenced the field of educational technology more than Dave Moursund. His leadership in ISTE and its predecessor, ICCE, has touched tens of thousands of educators. In his work with the University of Oregon he mentored doctoral students who have gone on to leadership positions in school technology throughout the nation.” Dr. Moursund has served on the dissertation committees of more than 75 doctoral students.

Current Projects

"Retiring from ISTE has allowed me to increase my commitment to the Teacher Education program at the University of Oregon," said Dr. Moursund. He is now working full time in a combination of teaching, consulting, writing, and PT3 (Preparing Tomorrow's Teachers to use Technology) grant activities.

Awards and Honors

2019. *Founder's Award.* Honored by the International Society for Technology in Education (ISTE) at its 40th anniversary conference as the founder of ISTE in 1979.

2018. *Platinum Disk.* Computer Using Educators (CUE) of California award for outstanding leadership in Educational Technology.

2002. *Lifetime Achievement Award.* Society for Information Technology and Teacher Education (SITTE).

2002. Member of the Advisory Committee for eTIP Cases, a three-year Preparing Tomorrow's Teachers to Use Technology (PTTT) Catalyst Grant.

2001. *Educational Technology Pioneer Retires from ISTE.* International Society for Technology in Education (ISTE).

2001. *Top 25 Education Technology Advocates Award.* DA/District Administration: K-12 Education Leadership, Curriculum, Technology, & Trends.

1999. *NECC Pioneer.* National Educational Computing Conference (NECC).

1999. *Top 30 Most Significant People in Educational Technology. eSchool News.*

1998. *Paul Pair Award for Lifetime Commitment to Teaching & Learning with Technology and a Dedication to Educators Around the World.* International Society for Technology in Education (ISTE).

1998. *100 Most Influential* List selected by *Homework Central* editorial board.

1998. *Making It Happen Award.* Also known as the *"Pink Jacket"* award, a corporate/media award given to leaders in the field of Instructional Technology in Education.

1998. *ISTE Staff Appreciation Award.* International Society for Technology in Education.

1990. *Distinguished Alumni Achievement Award.* University of Oregon College of Arts and Sciences.

1988. *President's Award.* Northwest Council for Computer Education (NCCE).

1982. *Recognition of Service Award.* Association for Computing Machinery (ACM) for work as Chairman of Subcommittee on Elementary and Secondary Education, 1978-1982. Signed by David H. Brandin, President and Adele Goldberg, Secretary. I had started working with the ACM Subcommittee on Secondary Education several years earlier. At that time, there was no Subcommittee on Elementary Education. My work led to the expansion of the Secondary Education Committee into the Elementary and Secondary Committee, and I was its first chair.

> During my time on the committee, I took a leadership role in putting together two reports titled *ACM Topics: Computer Education for Elementary and Secondary Schools.* The January, 1981, publication was 92 pages in length and the January, 1983 publication was 111 pages in length.

1953. *Essay and Speech Award.* Independent Order of Odd Fellows (IOOF). Award was a one-month, all expenses paid, summer trip by bus from Eugene, Oregon, across Canada, to New York to visit the United Nations headquarters, to Washington D.C., and back to Eugene. Traveled with other high school sophomore and junior winners from Oregon, Washington, and British Columbia.

Undergraduate University Honors

1958. *Woodrow Wilson Fellowship, Wisconsin Alumni Fellowship,* and *National Science Foundation Fellowship* (each a three-year grant) for graduate studies. Accepted the NSF Fellowship scholarship and attended the University of Wisconsin-Madison for both master's degree and doctorate in mathematics.

1958. *Distinguished ROTC (Military) Award.* University of Oregon.

1958. *DeCou Prize for Outstanding Mathematics Major.* University of Oregon.

1958. Elected to *"Senior Six", University of Oregon Phi Beta Kappa.* Graduated second in the 1958 class (based on GPA) at the University of Oregon.

1956. *Crown Zellerbach Scholarship* for junior and senior years, awarded to the most outstanding University of Oregon student who has completed two years of Chemistry.

1956. *Outstanding Student in Freshman Physics, Freshman Chemistry, and Freshman Mathematics.* University of Oregon Freshman book prizes (3 awards).

Responses to Reader-posed Questions

Q. Why do you write books and make them available free under a Creative Commons License?

A. There are two parts to this answer. First, I don't like the hassle of dealing with commercial publishers, such as writing to meet their perceived needs. Second, I believe that writing free books is a way to help contribute to the world and to help pay back for all of the good things that the world has done for me. I have a very nice retirement from the University of Oregon and I don't need book royalty income to support my life style. It gives me considerable satisfaction to be able to write what I want to write and to share my writing freely with the world.

Q. You write a lot. Do you enjoy doing this?

A. Writing gives me considerable pleasure. The writing process requires that I read a great deal, communicate with many people, and think a lot. The publication process is quite similar to teaching—except that I don't have to grade papers and assign grades to students. Thus, I can continue to be a teacher and not have to do the one part of teaching that I don't like doing.

Q. I understand that you have "face blindness." How has this affected you?

A. Face blindness is a layman's term for *prosopagnosia.* About two-percent of people suffer from this problem. In essence, it means they have great difficulty in recognizing people by their faces.

For myself, I was not aware of this problem until I read a 7/17/2006 *Time* magazine article. It then became apparent why I often couldn't pick out a friend's face in a crowd and explained some difficulties I had in working with students and colleagues, even in small groups. Of course, I can recognize many of the people I know well from their voices, mannerisms, clothing, context, and so on.

Nowadays I am able to be open about this problem, so people often help me when I don't seem to recognize who they are. Of course, I also suffer from two problem that many older people encounter—not

being able to quickly remember names of people that I do know, and becoming more "creaky." A double whammy. Ces't la vie.

Some Personal and Professional Background

I was born in Eugene, Oregon, on November 3, 1936, the second of four children born to Andrew F. and Lulu V. Moursund. My father and mother met while they were graduate students at Brown University in Providence, Rhode Island. Both my father and mother had some precollege teaching experience and then taught mathematics at the University of Oregon for many years. My father served as the head of the University of Oregon Mathematics Department for more than 30 years, beginning in 1939.

I grew up in a nice middle-class neighborhood located about a mile from the edge of the University of Oregon campus. Two schools, Condon Elementary School and Roosevelt Junior High School, were within easy walking distance. Several nearby neighbors were university faculty, a couple were doctors, and a couple were precollege teachers.

The neighborhood area had once been a fruit orchard, and quite a few of the fruit trees were still there. There were nearby vacant lots that made for great places to play. There were quite a few kids in the neighborhood, so it was always easy to find a group to play with. Kick the can, hide and seek, kite flying, and sports were standard neighborhood outdoor activities. Typically we played outdoors after school and in the evenings without adult supervision.

Early on, I displayed considerable talent in math, and my home environment strongly encouraged my progress in this area. By the time I was in the ninth grade, I had set my educational and vocational sights on becoming a math professor. After the ninth grade, I took one or more courses each summer at the University of Oregon until I graduated from high school and became a full time University of Oregon student.

My undergraduate work was completed during 1954-1958 at the University of Oregon. At the time I graduated in June, 1958, the University of Oregon did not yet have a computer. I spent six months at Aberdeen Proving Grounds, Maryland, via the ROTC program, but did not encounter any computer technology there. After I returned home, I visited Oregon State University and got a chance to play a little bit with their ALWAC computer (See picture.) That was my first encounter with a computer. Quoting from the linked website:

> Alwac III-E was a first generation computer (1950-1960) used in the academia and the military. These were characterized by the use of vacuum tubes as their switching technology. The most popular memory technique was the rotating drum, an electromechanical device, which was slow, but its reliability and low cost made it suitable for small-scale machines like IBM 650 and Alwac III-E.

> These machines became outdated because of the introduction of the transistor and the ferrite core memory in the late 1950's.

I had my first formal teaching experience during the spring of 1959. I taught one of the many sections of Math 10 (a remedial course, roughly equivalent to first year high school algebra) in the Math Department at the University of Oregon. My students had the highest average on the uniform final exam used in a half-dozen sections of the course.

When I arrived at the University of Wisconsin-Madison in the summer of 1959 to begin my graduate work, they were using an IBM 650 computer in their computer courses. I audited an IBM 650 assembler language programming course for the first half of the term, doing all of the assignments and taking the midterm exam. I think I made a perfect score on this midterm. The course seemed both interesting and relatively easy for me. However, I was carrying a full load of math courses and spending a lot of time with a newly acquired girlfriend, so did not continue in the course. That 1/2 of a course constitutes the totality of my formal coursework directly about computers during my entire undergraduate and graduate education.

Later, during my time at the University of Wisconsin, the university acquired Control Data Corporation hardware and FORTRAN, and I taught myself to program in FORTRAN. At the University of Wisconsin, I finished a doctorate in Mathematics in January, 1963 (specializing in Numerical Analysis, focusing on the use of computers to help solve math problems). The Math Department generously provided me with a job as an Instructor until the end of the academic year.

I first became involved with Information and Communication Technology (ICT) in education in the summer of 1963, when I helped to teach some high school talented and gifted students about uses of computers in math. By that time, quite a few people had made computers available to precollege students. FORTRAN (developed during 1954-1957, and first made widely available on 15 April, 1957) was in wide use. With access to a key-punch machine, students could write and edit their programs and have them run on a nearby college or business computer.

Starting in early 1963, I applied for jobs at a number of different universities, and received offers from about half of them. I accepted a position as an Assistant Professor at Michigan State University (MSU) that began in the fall of 1963. I held a joint appointment between the Math Department and the Computing Center in the College of Engineering. The BASIC programming language was still under development and not yet widely available. My recollection is that in 1965, while I was teaching at Michigan State University, I first gained access to the programming language BASIC. The MSU Computing Center had a Teletype terminal that accessed a computer in Chicago, and so I became acquainted with time-shared BASIC.

During my four years at Michigan State University, I did quite a lot of FORTRAN programming, developing programs that tied in with my research. I initiated a numerical analysis book-writing project with two of my colleagues, and used FORTRAN throughout the book. When the third author became ill, the book ended up with only myself and Charles Duris as authors. *Elementary Theory and Application of Numerical Analysis* was published by McGraw-Hill in 1967, and later translated into Japanese.

While I was at MSU, I began to teach precollege teachers who were attending summer institutes. In the summer of 1965, I taught in an institute run by other faculty. In the summers of 1966 and 1967, I was the project director of the MSU National Science Foundation summer institutes. In each of these two summers,

all of the participants took a FORTRAN programming course, a numerical analysis course, and an overview (review of) calculus course.

By the time I left MSU at the end of the summer of 1967, I was thoroughly hooked on being a teacher of teachers. I found this to be far more personally rewarding than any of the other courses I was teaching. Also, three of my students had completed their doctorates in Mathematics, and I had been promoted to Associate Professor with tenure. When I began work as an Associate Professor at the University of Oregon (UO) in fall 1967, I was already focused on my ultimate career as an educator and writer in the field of computers in education.

The remainder of my professional career was at the University of Oregon. In 1967-69, I was an Associate Professor with a joint appointment between the Mathematics Department and the Computing Center. In 1969, I became the first Chairman of the newly established Computer Science Department and served in that position for six years. While still affiliated with the Department of Mathematics, I was the major professor of three students who completed their doctorates in Mathematics.

During that time, I established the second Master's degree program in the field of Computers in Education in the U.S. (Illinois Institute of Technology had the first). In 1971, I established the country's (the world's, I think) first doctoral program in Computers in Education. Under this new program, the College of Education admitted its first doctoral candidate in the field of Computers in Education in 1971. (He became the second of my students to complete this degree.) As this program grew, I was given a courtesy appointment (no money involved) in the College of Education to facilitate my being the major professor of these students.

I started publication of the *Oregon Computing Teacher* journal in 1974, and this became *The Computing Teacher* when I established the International Council for Computers in Education (ICCE) in 1979, now the International Society for Technology in Education (ISTE). *The Computing Teacher* later became *Learning and Leading with Technology* and that now has evolved into ISTE's flagship journal, *Empowered Learner.* (See more information in the ISTE section earlier in this document.)

My recollection is that I left the Computer Science Department and became a full time Professor in the College of Education in 1986. (My Computers in Education doctorate program was conducted through the College of Education, so I had already been working with the College of Education for many years.) I remained there until my retirement in 2002, and continued working there one-third time until my "complete" retirement in 2007. I was major professor or co-major professor for 76 students who received their doctorates in the field of Computers in Education.

Since my retirement from the University of Oregon, I have continued my active involvement in the fields of math education, computers in education, and brain science. In 2007, I established Information Age Education (IAE) as a non-profit organization, and I publish extensively on the IAE websites. As of June, 2019, the IAE websites have had approximately 16 million page views. (See more information in the IAE and AGATE section earlier in this document.)

Grants and Contracts

Multiyear contract. Moursund founded the International Council for Computers in Education (ICCE) in 1979. In 1989, this professional society changed its name to International Society for Technology in Education (ISTE). Moursund headed this organization from its beginning until 2009, and continued employment with the organization until 2011. During most of this time he received 1/3 of his University of Oregon salary from the organization.

NSF grant: Teacher Professional Continuum: Strategic Integration of Science and Mathematics. $1.8 million from Fall 2005 to Summer 2010. Jill Baxter, PI; Dean Livelybrooks and David Moursund, co-PIs.

The UO College of Education was the recipient for a $48,000 equipment and training grant from the University of Oregon, May 2004 to June 2005. Moursund wrote the proposal and was co-PI for this grant funded from UO Educational Technology student fees.

The UO College of Education was the recipient and Moursund was the PI for a three-year Preparing Tomorrows Teachers to use Technology (PTTT) Implementation Grant from the US Department of Education, beginning June 2000. After a one-year extension, this project ended 31 May, 2004.

The UO College of Education was the recipient and Moursund was the PI for a one-year PTTT Capacity Building Grant from the U.S. Department of Education, beginning September, 1999.

ISTE was the recipient and Moursund was the PI for contracts to serve as the outside evaluator for three different three-year PTTT Implementation Grants beginning in September, 1999.

ISTE was the recipient and Moursund was the PI for an April, 1999, contract with the South Dakota Board of Regents to do on-site and document review of proposals by two SD Universities to create master's degree programs in the field of information technology in education.

Technology Innovation Challenge Grant, Phoenix Union High School in Arizona. ISTE was the recipient and Moursund was the PI for a five-year evaluation contract beginning September, 1998.

Energy Scheming FIPSE Grant. Moursund was the outside evaluator for a 1997-2000 project in the School of Architecture, University of Oregon.

ISTE was the recipient and Moursund was the PI for a Milken study of Colleges of Education. This one-year project that ended in Fall 1998 looked at IT in preservice education in the Schools, Colleges, and Departments of Education in the United States. Access the 60-page final report at David Moursund & Talbot Bielefeldt (1999), Will New Teachers Be Prepared to Teach in a Digital Age? Retrieved 9/1/2018 from https://files.eric.ed.gov/fulltext/ED428072.pdf.

The Road Ahead. ISTE was the recipient and Moursund was the PI for this 1995-1998 research and evaluation project that involved activities at 22 school sites throughout the country. The $200,000 a year three-year project was funded by Bill Gates using royalties from his book, *The Road Ahead*.

Grant from National Foundation for Improvement of Education (NFIE). ISTE was the recipient and Moursund was the PI. This work produced six single-topic booklets of about 20 pages each published by NFIE.

Intel Project. The Journey Inside: The Computer. ISTE was the recipient and Moursund was the PI for this $600,000 project that began in 1994 and ended in 1999. It developed materials to help students at grades 4-9 levels to learn about computer hardware. (A one-year extension of this project ended in 2000; it studied some of the project's impact on preservice teacher education.)

Moursund was PI for NSF Project TEI-8550588 Leadership Development for Computer-Integrated Instruction in Pre-College Education (15 September 1985 to 28 February 1989). The total amount of this three-year grant with a small extension grant was $344,200.

Moursund was a member of the Apple Education Foundation Board (1979-1984). The Apple Education Foundation was established in 1979 to support and develop new methods of learning through the use of small computers.

Moursund was the computer component director (1971-1976, with variable FTE, ranging up to .5) for a NSF Systemic Initiative in Math Education in Oregon. One of the outcomes was the initiation of the *Oregon Computing Teacher* journal. Over the years this became *The Computing Teacher,* then *Learning and Leading with Technology,* and now *Empowered Learner,* ISTE's flagship publication.

Moursund was awarded NSF funding for designing and running NSF summer institutes for precollege teachers, 1966-1970. The first two were at Michigan State University and the subsequent ones were at the University of Oregon.

In 1965, Moursund received a small grant from the Mathematics Department at Michigan State University (funded by the Ford Foundation) to conduct research on various methods for teaching freshman mathematics at MSU.

My Father Andrew Moursund and My Friend Gene Maier

On March 3, 2018, as I was going through some of my old archives, I came across a document written by my friend Gene Maier. It was about my father Andrew Moursund and Gene's interactions with him. I have included Gene's document here for two reasons. First, it provided some insights into my father, and thus into a strong force in my upbringing. Second, it includes the time span when the State of Oregon received a five-year multi-million dollar National Science Foundation grant for a statewide K-12 math education project.

My father played the leadership role in writing the proposal, and Gene Maier served as Director of the project. I had already had many years of NSF funding to do teacher education projects, and so I was put in charge of the computers-in-education component of the project. My recollection is that I was .33 FTE on this grant for six years.

The computers-in-education component of the project sponsored a number of teacher education activities. In addition, it funded my work in starting publication of the *Oregon Computing Teacher* journal in 1974, when I helped to organize the Oregon Council for Computers in Education (OCCE). When the grant ended, the Math Learning Center was created as a 501(c)(3) non-profit to continue some of the project work. Gene Maier was President of the Board of the Math Learning Center, and I was a founding member of its Board of Directors. As of 3/8/2018 I am still on the Board of Directors.

The *Oregon Computing Teacher* became *The Computing Teacher* in 1979 when I established the non-profit corporation, the International Council for Teachers in Education (ICCE). So, from a historical point of view, the work of my father Andrew Moursund and my friend Gene Maier led to the establishment of the International Council of Teachers in Education that continued to grow, and was renamed the International

Society for Technology in Education (ISTE) in 1979. *The Computing Teacher* became *Learning and Leading with Technology* that now has evolved into ISTE's flagship journal, *Empowered Learner.*

Gene Maier's Recollections of Andrew Moursund

I began my freshman year at the University of Oregon in the fall 1946. Fresh out of high school, I had enrolled in the School of Architecture. However, a few weeks into my freshman design class, I decided I had the talent to be a structural engineer, but I questioned my design capabilities and decided to switch majors to mathematics, a subject I enjoyed and which throughout high school and so far in my college algebra class, presented no difficulties. So I went to the math department office to inform them of my decision and get assigned an advisor in my newly chosen field of study. The math department chair, a rather portly fellow, looked at me through the bottoms of his bifocals and asked me, rather brusquely, why I thought I could be a math major. I told him I was averaging very close to 100 in my college algebra quizzes and he asked me if I had had the course before, and I admitted that I had much of the material in high school. With no additional comment he signed the required form, naming himself as my academic advisor. And thus began an association with Andrew Moursund that spanned more than a quarter of a century.

I had my first two terms of sophomore calculus from Andrew. I don't know if I excelled in my understanding of calculus, but I did excel at test-taking. On one of Andrew's test, I scored in the 90's, when the class average was something like 48. From that time on, it seemed as the saying goes, that Andrew took me under his wing.

I also had Andrew in advanced calculus in my senior year and real analysis as a first year graduate student. In our advanced calculus class, 60 billion became known as Moursund's Constant. In any discussion about what happened to a function as the variable approached infinity, Andrew might ask us what happened to the function for various values of the variable, more often than not, culminating the discussion by asking us what happened when the variable was 60 billion. One might say, for all practical purposes, that Moursund's Constant is the upper limit of all arbitrarily large numbers. I also remember the day in advanced calculus when Andrew was lecturing to us, thumbs hooked in his pockets, head tilted back, scanning the class through the bottoms of his bifocals, when he interrupted whatever mathematical point he was making and blurted out, "Ashford, your pants are unzipped," much to the embarrassment of Tom Ashford—who turned a deep shade of red—and the tittering disquietude of the rest of us.

It was characteristic of Andrew to speak his mind. My fellow students and I collected Andrew's more piquant observations. We called them Moursundites. Besides the one mentioned in the previous paragraph, I remember others. My favorite involves George Swift, a fellow math major who also had Andrew for an advisor. During registration period one term, I went to Andrew's office to get his signature on my proposed schedule. George, who had the appointment before me, was still there. He had a speech class listed on his schedule and Andrew asked him why he wanted to take a speech class. George began an eloquent explanation of why he should. Andrew listened awhile before interrupting him. "You don't need a speech class," he said, "you're glib enough already." Then there was the time, a few years later, when I and a couple of other graduate students who were married, or about to be married, were talking in the hall when Andrew walked up to us and began telling us why graduate students shouldn't get married. Just then Ken Ghent walked by prompting Andrew to qualify his remarks, in a voice that I'm sure was loud enough for Ken

to hear, by stipulating. “Unless you marry money, like Ken did.” (Ken, who joined the math faculty in 1935, had married into a well-to-do Eugene lumber family.)

I received my B.A. degree in 1950, and was offered a graduate assistantship that enabled me to complete a M.A. the following year. For my Ph.D. studies, I had wanted to go the University of Washington to stay close to home and the love of my life, who was an undergraduate at Oregon. But at the urging of Will Dixon, who was a Princeton Ph.D. and professor in a couple of statistics courses I took, I applied and received an assistantship at Princeton. So I headed off for the East Coast where I spent a mathematically-rich but love-sick year. I inquired of Andrew about the possibility of returning to Oregon and he made a graduate assistantship available to me. So I returned to Oregon, got married and spent the next two years completing my Ph.D. during the first year of which my wife completed her bachelor’s degree.

After a brief foray into the lumber business, I joined the faculty of Pacific Lutheran University—at that time College—in 1955. My family and I frequently came to Eugene to visit friends and relatives and I would drop in at the math department. On one of these occasions, probably in 1960, Andrew broached the subject of my taking a position at Oregon to help administer the lower-division program. By this time I was an Associate Professor and chair of the math department at PLU, but the thought of returning to Oregon was compelling. I was reluctant, however, to make the change because I had been doing no research and was afraid that would preclude my chance of any advancement at Oregon. Andrew assured me that my promotion and tenure would be dependent on factors other than research. He put this in writing in a letter in which he offered an Associate Professorship with tenure, as I recall. at a salary that was 50% more than I was earning at PLU. I accepted and thus in 1961 I became an Associate Professor at Oregon with a nil publication record. We moved to Eugene and I began teaching in Fall Term. Near the end of September, Andrew walked into my office and gave me a form to fill out, telling me I needed to do that so he could pay me. It was a job application form.

A few years later Andrew walked into my office and told me I had been promoted to Professor—the stipulation in the letter had been honored. (After I joined the Oregon faculty, I did publish a few mathematical papers, but I never got deeply involved in research.)

I wasn’t at Oregon long before my role changed. I did oversee the freshman math sequence for a couple of years, but then my responsibilities shifted to the math program for secondary teachers. Coincidentally with my joining the faculty, the department had developed special courses for preservice secondary teachers and the National Science Foundation began funding mathematics institutes for inservice teachers. Andrew championed both of these movements. With the aid of supporters like Ivan Niven and Ken Ghent, Andrew saw to it that the program for teachers became an established and valued focus of the department. He also was instrumental in obtaining NSF grants to conduct summer inservice and academic year institutes. He involved me in both of these areas. I was assigned one of the courses for prospective teachers, designated as the advisor of all math majors who wanted to become teachers, and was named as the departmental representative to the University Teacher Education Committee. Andrew gave me a lot of latitude in carrying out my responsibilities. On occasion, I would assist one of my advises in preparing a petition to meet a requirement in some alternative manner that required the signature of the department chair. Andrew never countermanded a deal I worked out with a student. He would always sign whatever needed to be signed;

later he might tell me that I was too softhearted or express his reservations about my judgment, but as far as the student was concerned, he always backed my decisions. I always appreciated that about Andrew; if he gave me an assignment, he let me carry it out as best as I saw fit. And in other matters related to my role, he gave me lots of autonomy. A case in point are the deals I made with graduate students in the College of Education. From time to time, the College would send a graduate student to see me who wanted to learn more mathematics, and at the same time earn credits towards their degree. For most of these students there was no course in mathematics carrying graduate credit that they were prepared to take. So I would sign them up for a graduate level reading and conference course with me, then I would identify a course at the appropriate level and get the consent of the instructor to have my student attend their class as if they were a regularly enrolled student and report their grade to me. (I recall two elementary education doctoral students who took calculus this way.) Andrew never questioned any of these arrangements and may, indeed, have suggested the procedure—I don't recall its origins. A later departmental chair wanted to approve all such arrangements; I told him I didn't think he really wanted to do so and agreed to report any arrangement I made, which I did a couple of times and then forgot about it.

As far as the NSF institutes were concerned, Andrew and I had a good working relationship. Andrew prepared the proposals, arranged for the institute faculties and took care of all the budgetary matters. I did the initial screening of the applicants, served as the academic advisor of the participants, taught in the institutes, and arranged for the written and oral master's exams that most participants eventually took. Normally, on each grant proposal, Andrew was listed as Director and I as Associate Director.

Andrew was responsible for the establishment of the Oregon NSF Systems Project, partially through the role he played in making Oregon a hotbed of NSF institutes but more directly through his impatience with ineptness. NSF held frequent directors' meetings in Washington D.C., Sometimes Andrew would go, sometimes he would send me, and on some occasions, when we had multiple grants, we both would go. In one of these latter instances, when the morning session proved to be especially tiresome and the proposed afternoon session didn't look any more promising, Andrew suggested we skip it and instead visit the office of the Academic Year Institutes (AYI), which had been rumored to have some new things in the offing. When we reached the office and Andrew explained our purpose, we were ushered into Mike Frodyma's office. Mike headed the AYI program and Andrew knew him from his years of involvement in AYI institutes. Mike described the new "comprehensive" and "systems" programs his office was undertaking. They had funded an experimental systems project in Delaware and were seeking other sites for further experimentation and the conversation turned to whether Oregon might be such a site. Mike thought that a possibility because of the large number of NSF institute programs in the state as well as the cooperative spirit among the state's math educators. After a bit, Mike yelled into the adjoining room, "Ted, come here," and shortly Ted Reid, who was heading up the "systems" experiment, walked into the room. When Andrew and I indicted our receptiveness to the notion of an Oregon systems project, Mike suggested that Ted visit Oregon to assess the suitability of undertaking a statewide system's project. Andrew and I returned to Oregon and we agreed that I should contact Don Rasmussen, who was the state math specialist, and enlist his aid in arranging an itinerary for Ted's visit. Ted came and the Oregon System in Mathematics Education (OSME) was conceived. Andrew didn't take an active role in the development of OSME, but he freed me up from many of my Departmental duties so I could. Had he not instigated that visit to the AYI office and grasped the intentions of those in charge, it is unlikely that OSME would have happened.

Becoming a faculty member gave me the opportunity to expand my collection of Moursundites. I remember being in the departmental office when a student athlete came in bearing some kind of petition that required the department head's signature, perhaps a request for a late course withdrawal. Andrew asked the student what led to the petition and the student replied that his coach had suggested it. While signing the form, Andrew declared, "We ought to throw the coach in the mill race." It wasn't only students that were the recipients of Andrew's pronouncements. I was in Andrew's office one day when the Dean called to report a decision on some matter and heard Andrew very clearly describe his opinion of it. Secretly I thought that someone who had survived 30 years as a department chair had the right to tell a dean whatever he wanted. Another example of Andrew's directness occurred in a departmental meeting when a faculty member made a motion that Andrew thought was frivolous. He looked at the faculty member and calling him by name announced, "That's the goddamdest motion I ever heard, and furthermore, if it passes I won't live by it anyway." The matter was dropped.

When he was about to retire as department chair after holding the post 31 years, he again ventured into my small office in the southeast corner of the Deady Hall basement. This time he had a request. The space on the main floor of Deady that once housed the departmental office was available. It consisted of a large outer office and a small inner office that had once been Andrew's office. He wanted to move back into that office when he retired and wanted to know if I would move into the outer office. He thought we would be compatible office mates. I agreed and made the move. The arrangement was short-lived; Andrew died soon after he retired.

And so, my quarter-century relationship with Andrew ended. He had been my mentor, colleague and friend. Through the opportunities he created for me, the assignments he gave me, and the autonomy he granted me, Andrew, more than any other person, shaped my professional career.

Publications Retrieved from the Association for Computing Machinery

In the early part of my professional career, I was deeply involved with the ACM. This list of references was retrieved 11/1/2019 from the ACM site.

Many of the cited papers are available in PDF format from that site.

1. Published by ACM. Examination of Multiple Roots and Root Clusters of a Polynomial Using the Bernoulli Procedure David G. Moursund April 1965 Journal of the ACM (JACM): Volume 12 Issue 2, April 1965

2. Published by ACM. Site-based management: saving our schools David G. Moursund June 1995 Communications of the ACM: Volume 38 Issue 6, June 1995

3. Published by ACM. Optimal starting values for Newton-Raphson calculation of √x½ David G. Moursund July 1967 Communications of the ACM: Volume 10 Issue 7, July 1967

> The problem of obtaining starting values for the Newton-Raphson calculation of √ x on a digital computer is considered. It is shown that the conventionally used best uniform approximations to √ x do not provide optimal starting values. The problem of obtaining optimal starting values is stated, and several basic ...

4. Published by ACM. Computer science education for preservice elementary school teachers David Moursund October 1978 ACM SIGCUE Outlook: Volume 12 Issue 4, October 1978

5. Published by ACM. Chebyshev Solution of n+1 Linear Equations in n Unknowns David Moursund July 1965 Journal of the ACM (JACM): Volume 12 Issue 3, July 1965

> An algorithm is presented for finding a solution, and the value of a solution, to n + 1 linear equations in n unknowns. The arrangement of the computation makes it convenient for use in computing Chebyshev-type approximations by polynomials. The algorithm is particularly efficient if only the value of a ...

6. Published by ACM. Opinions on computer science courses for precollege level teachers David Moursund February 1978 SIGCSE '78: Papers of the SIGCSE/CSA technical symposium on Computer science education

> There is growing awareness that calculators could/should play an integral role in elementary school and secondary school education. But most current precollege level teachers have received little training about calculators and computers. Most teacher training institutions have given relatively little thought to these issues. This paper lists several possible courses ...
>
> Also published in:
>
> February 1978 ACM SIGCSE Bulletin - The papers of the SIGCSE/CSA technical symposium on computer science education: Volume 10 Issue 1, February 1978

7. Published by ACM. Calculators and the elementary school: an idea and some implications David Moursund October 1976 ACM '76: Proceedings of the 1976 annual conference

> Calculators are now cheap enough to provide ready access to all elementary school students. I propose that this be done. This paper examines some of the potential impacts upon the elementary school mathematics curriculum. It suggests a need for a decrease in emphasis upon pencil-and-paper aided computation and an increase ...

8. Published by ACM. Calculator metaphors, and goals for calculator education in elementary schools David Moursund February 1977 ACM SIGCSE Bulletin - Special issue seventh technical symposium on computer science education: Volume 9 Issue 1, Feb 1977

> Computers are not easy to understand. Even a computer scientist who devotes full time to the field cannot hope to fully comprehend the capabilities, limitations, applications, and implications of these machines. Joseph Weizenbaum, in his recent book Computer Power and Human Reason (1), suggests that most people “understand” computers via ...
>
> Also published in:
>
> February 1977 SIGCSE '77: Proceedings of the seventh SIGCSE technical symposium on Computer science education.

9. Published by ACM. Calculators and the computer science curriculum David Moursund June 1976 ACM SIGCSE Bulletin: Volume 8 Issue 2, June 1976

10. Published by ACM. Teacher certification in computer education David Moursund January 1975 ACM '75: Proceedings of the 1975 annual conference

> The instructional usage of computers at the secondary school level is well established, and is growing fairly rapidly. The article begins with a discussion of current computer availability and usage in Oregon. After projecting future growth, it discusses certification for the computer non-expert, for the computer teacher, and for the ...

11. Published by ACM. Computers in pre-college education: Oregon moves forward David Moursund January 1974 SIGCSE '74: Proceedings of the fourth SIGCSE technical symposium on Computer science education

> The computers in education field is making rapid progress. We can see this progress in the quality and number of data processing programs at the associates degree and data processing school levels, and in the bachelor's, master's, and doctorate programs at colleges and universities. We can also see large numbers ...
>
> Also published in:
>
> February 1974 ACM SIGCSE Bulletin - Proceedings of the 4th SIGCSE symposium on Computer science education: Volume 6 Issue 1, February 1974

12. Published by ACM. Computer science for elementary school teachers David Moursund, Mike Neill February 1976 SIGCSE '76: Proceedings of the ACM SIGCSE-SIGCUE technical symposium on Computer science and education

> The time line for significant changes in public education is long, and introduction of computers into education is not proving an exception to this. The circumstances that have contributed to relatively rapid progress in introducing computers in higher education do not exist at the pre-college level. This paper concentrates on ...
>
> Also published in:
>
> February 1976 ACM SIGCSE Bulletin - Proceedings of the SIGCSE-SIGCUE joint symposium on Computer science education: Volume 8 Issue 1, February 1976 February 1976 ACM SIGCUE Outlook - Proceedings of the SIGCSE-SIGCUE joint symposium on Computer science education: Volume 10 Issue SI, February 1976

13. Published by ACM. Computers in precollege education (Panel Discussion): What do teachers want or need? January 1979 SIGCSE '79: Proceedings of the tenth SIGCSE technical symposium on Computer science education.

> What are the major problems involving computers in precollege education? This question will be discussed by a panel of precollege teachers who are seriously interested in instructional uses of

computers. They will present their wants and needs. Topics to be covered include software, hardware, courseware, inservice training, administrative support, and ...

Also published in:

February 1979 ACM SIGCSE Bulletin - Proceedings of the 10th SIGCSE symposium on Computer science education: Volume 11 Issue 1, February 1979

14. Published by ACM. Computers in schools: past, present, and how we can change the future Doris K. Lidtke, David Moursund May 1993 Communications of the ACM - Special issue on technology in K–12 education: Volume 36 Issue 5, May 1993

15. Published by ACM. Computers in education: an historical perspective Karen Billings, David Moursund September 1988 ACM SIGCUE Outlook - Special issue on preservice education in educational computing: Volume 20 Issue 1, Sept. 1988

16. Published by ACM. An elementary school scenario David Moursund, Karen Billings September 1988 ACM SIGCUE Outlook - Special issue on preservice education in educational computing: Volume 20 Issue 1, Sept. 1988

17. Published by ACM. A summer master's degree program in computer education Peter Moulton, David Moursund January 1975 ACM SIGCUE Outlook: Volume 9 Issue SI, January 1975

The Computer Science Department has developed a summer master's degree program in Computer Science Education directed toward teachers in grades 7-14. In a first section this report describes the goals, design criteria and constraints which influenced the development of the program. A second section describes the resultant program and summarizes ...

18. Published by ACM. Preparing precollege teachers for the computer age Jean B. Rogers, David G. Moursund, Gerald L. Engel March 1984 Communications of the ACM: Volume 27 Issue 3, March 1984

19. Published by ACM. SIGCSE (Paper Session) David L. Cohn, Robert B. Kolstad, Stefan Feyock, Thomas Ford, David Moursund, D. R. Chand, R. Techo October 1976 ACM '76: Proceedings of the 1976 annual conference

This session is concerned with new ideas and experiences in computer science education. The session will focus on the following questions: (1) How effective a tool is computer programming for motivating minority junior high school students toward professional careers in engineering, computer science, and other related areas? (2) Can different ...

20. Published by ACM. Review of "Teacher Certification in Computer Education by Moursund, David (Univ. of Oregon, Eugene)". [in Proc. ACM 1975 Annual Conf. (Minneapolis, Minn., Oct. 1975), 74-76. 1976) December 1977 ACM SIGCPR Computer Personnel: Volume 7 Issue 3, Winter 1977