

## **Paul G. Allen School History and Growth**

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What is today the University of Washington's Paul G. Allen School of Computer Science & Engineering was established by the University of Washington Board of Regents as the Computer Science Group – an interdisciplinary program authorized to grant graduate degrees and reporting to the Dean of the Graduate School – in March 1967. Jerre Noe was hired from Stanford Research Institute (now SRI International) in 1968 to lead the group (and to lead its growth into a full-fledged academic department with an undergraduate program). As of 2025-26 the Allen School has 93 FTE faculty members, but in 1970 there were 7:

Jean-Loup Baer (hired as a new UCLA graduate in 1969; retired in 2003)

David Dekker (moved to the Computer Science Group from UW's Department of Mathematics; retired in 1981; passed away in 2004)

Hellmut Golde (moved to the Computer Science Group from UW's Department of Electrical Engineering; retired in 1992; passed away in 2019)

Ted Kehl (moved to the Computer Science Group from UW's Department of Physiology & Biophysics; retired in 1997; passed away in 2019)

Jerre Noe (hired away from Stanford Research Institute (now SRI International) in 1968; retired in 1988; passed away in 2005)

Bob Ritchie (moved to the Computer Science Group from UW's Department of Mathematics; departed for Xerox PARC in 1983; passed away in 2019)

Joe Traub (hired away from Bell Laboratories in 1970; departed to become the Head of Carnegie Mellon's Computer Science Department in 1971; passed away in 2015)

Additional faculty were formally associated with the Computer Science Group in 1970 but appointed elsewhere: John Cramer (Physics), George Diehr (Business), Robert Gillespie (Computer Center), Allen Goldstein (Mathematics), Alistair Holden (Electrical Engineering), Earl Hunt (Psychology), David Johnson (Electrical Engineering), Laurel Lewis (Electrical Engineering), Ron Pyke (Mathematics), Terry Rockafellar (Mathematics), and Jonathan Stanfield (Librarianship).

Today, when Artificial Intelligence is so prevalent, it's worth noting that three of the first four Ph.D. dissertations awarded by the Computer Science Group were in AI: to John Quinlan in 1968 for "An Experience Gathering Problem Solving System," to Chris Napjus in 1969 for "Declarer: A Learning Bridge-Playing Program which Generalizes and Infers," and to Larry Menninga in 1970 for "A Syntax-Directed Approach to the Recognition and Description of Visual Images."

What follows is a brief history of the Allen School, omitting some minor perturbations for the sake of clarity and brevity:

1967-68: Established as the Computer Science Group, an interdisciplinary program authorized to grant graduate degrees and reporting to the Graduate School. Housed, for the most part, in Roberts Hall.

1968-69: Jerre Noe recruited from Stanford Research Institute (now SRI International) as first chair.

- 1970-71: Hellmut Golde writes to Lakeside School student Paul Allen instructing him to “turn in your keys and terminate your activities in the [Computer Science Laboratory] immediately,” alleging grievous transgressions such as “you removed the acoustic coupler from Dr. Hunt’s office without authorization and without leaving at least a note” (<http://lazowska.cs.washington.edu/GoldeLtr.pdf>). The letter had been lost to the ages until Mr. Allen read from it at the dedication of the Paul G. Allen School in 2017.
- 1974-75: Had reached 9 FTE faculty: 5 transferred from other UW units, and 4 hired externally. (Throughout, “FTE” refers to “faculty who have been hired” (although some may be on leave, or may have been hired but are yet to arrive), not “authorized strength.”) Departmental status conferred as the Department of Computer Science, an inter-college unit reporting to both the College of Arts & Sciences and the College of Engineering, in anticipation of the introduction of a Bachelor’s program the following fall.
- 1975-76: Had reached 11 faculty FTE. Received 4 additional faculty positions for introducing a Bachelor’s program in Computer Science that would award 40 annual degrees. Relocated to Sieg Hall. Department relocates to Sieg Hall.
- 1979-80: Had reached 13 faculty FTE. Provost moves the department to the College of Arts & Sciences (eliminating the reporting relationship to the College of Engineering).
- 1980-81: The Eden Project, led by Jerre Noe, receives the first award in the National Science Foundation’s Coordinated Experimental Research Program, whose goal was to elevate the computer systems research capabilities of American universities in response to the departure of top faculty to Xerox PARC and similar industry labs – a \$5M 5-year award accompanied by the first ARPANET connection in the Pacific Northwest.
- 1982-83: Had reached 16 faculty FTE. Graduate program ranked #9 nationally for faculty quality and #10 nationally for effectiveness of graduate program by the National Academies.
- 1983-84: Had reached 19 faculty FTE. Received 7 additional faculty positions for growing the Bachelor’s program in Computer Science to 80 annual degrees.
- 1988-89: Had reached 24 faculty FTE. Provost moves the department to the College of Engineering as the Department of Computer Science & Engineering. Received 1.83 FTE of partial appointments of EE faculty, plus 6 new faculty positions for introducing a Bachelor’s program in Computer Engineering that would award 40 annual degrees. (This was an explicit legislative budget line.)
- 1996-97: Had reached 30.83 faculty FTE. Received 5 additional faculty positions for introducing a Professional Masters Program that would award 40 annual degrees. (This was an explicit legislative budget line.) Also received a special position for a senior recruitment.
- 1999-00: Had reached 34.67 faculty FTE. Received 6 additional faculty positions for growing our Bachelor’s programs by 40 annual degrees (for a total of 160 annual Bachelor’s degrees). Also received 3 additional faculty positions for research initiatives. (UW chose to fund the Bachelor’s expansion out of general institutional enrollment funds rather than a high-demand initiative which was available that year, although startup funds were obtained through an explicit legislative budget line to the HEC Board. The 3 research-related positions were explicit legislative budget lines.)

- 2002-03: Had reached 41.17 faculty FTE. Provost converts Professional Master's Program from state-funded to self-sustaining.
- 2003-04: On October 9, 2003, we dedicated and relocated to the Paul G. Allen Center for Computer Science & Engineering. We had grown to the point where Sieg Hall, which had housed us since 1975, was providing only 30% of the space per FTE of our peers. We were also crippled by a lack of laboratory space, as the field was becoming far more laboratory-intensive. The Allen Center – UW's first largely-privately-funded building – was designed to put us at 80% of peer-average space at the size we had been in 2001.
- 2007-08: Had reached 48.17 faculty FTE. Legislature provides high-demand funding to UW. Originally, the Provost planned to allocate none of this to CSE. After much tussle, with some funds coming from the Dean of Engineering, CSE received 7 new faculty positions to grow the Bachelor's program from 160 to 184 annual degrees (50% of what we had requested), add a 5<sup>th</sup>-year Masters program producing 10 annual degrees, and add 20 FTE Ph.D. students producing an additional 4 Masters and 3 Ph.D. degrees annually.
- 2008-09: Had reached 50.67 faculty FTE. 1 position received from the Dean of Engineering for the ExCEL (Experimental Computer Engineering Laboratory) collaborative initiative with Electrical Engineering.
- 2009-10: Budget cuts rescind all of the 2007-08 funds, and more. All enrollment increases are rolled back with the exception of the 5<sup>th</sup>-year Masters program, which we elect to continue at a nominal level (although un-funded) in fairness to our students.

*At this point we are funded for – and producing – roughly 260 annual degrees: 160 Bachelor's degrees, 80 Masters degrees (45 from the Professional Masters Program and 35 from Ph.D. students), and 20 Ph.D. degrees. Given the 2009-10 rollback of the 2007-08 enrollment funding, it is fair to say that our most recent enrollment growth had been funded in 1999-00.*

- 2011-12: Rising national stature is highlighted and amplified in a New York Times feature article (<https://www.nytimes.com/2012/07/08/technology/u-of-washington-a-northwest-pipeline-to-silicon-valley.html>).
- 2012-13: At 50.67 faculty FTE. After 12 years, we are finally funded for additional growth – to approximately 315 annual degrees (nominally 200 Bachelors, 90 Masters, and 25 Doctoral) – in this case through a legislative directive to UW to use internal funds to support additional enrollments in Engineering programs. (This is sometimes referred to as Proviso 1, even though it did not involve new funds. The Legislature became aware that UW had spent a previous legislative appropriation, intended for Engineering programs, in other ways, and directed UW to “make Engineering whole.”) (Proviso 1 total: \$2M)
- 2013-14: At 52.67 faculty FTE. Growth funded to approximately 395 annual degrees (nominally 250 Bachelors, 118 Masters, and 27 Doctoral). (This is referred to as Proviso 2, funded effective 7/1/13.) (Proviso 2 total: \$2.9M)

*In 2014 – following Proviso 2 – we began discussions with Reps. Drew Hansen and Chad Magendanz. At this time we were granting roughly 310 annual degrees (building toward our funded level of 395). Drew and Chad undertook to grow us to double our current degree count (that is, to  $2 \times 310 = 620$ ), by funding the 225 additional annual degrees that would be required (above the currently funded 395). \$8 million/year was established as the cost of this. The plan*

*was to implement this growth over two biennia, adding \$2 million to our annual budget each year.*

- 2015-16: At 60 faculty FTE. Proviso 3 is funded (effective 7/1/15). Half of the total two-biennium growth was funded over the two years of the biennium: to 450 annual degrees (nominally 298 Bachelors, 124 Masters, and 28 Doctoral) in 2015-16 and to 505 annual degrees (nominally 345 Bachelors, 130 Masters, and 30 Doctoral) in 2016-17. (Proviso 3 total: \$4M/year.)
- 2016-17: On March 9, 2017 – in our 50th anniversary year – the University of Washington Board of Regents votes to create the Paul G. Allen School of Computer Science & Engineering, elevating the status of CSE within the university and linking us in perpetuity with the internationally renowned investor, philanthropist, and computing pioneer. An MOU signed by Paul and UW President Ana Mari Cauce states that “it is the intent of the University and this gift that the Allen School be given, to the greatest extent possible, the prominence – visibility, support, privileges – in accord with its size, national prominence and new status or afforded to any of the University's other Schools and Colleges.” At the ceremony, Paul read from a letter that Hellmut Golde had sent him in 1971, ordering him and his friend Bill Gates to turn in their keys to the Computer Science Laboratory as a consequence of some minor transgressions.
- 2017-18: At 67.67 faculty FTE. Proviso 4 (effective 7/1/17). However, instead of allocating the planned \$2 million in the first year of the biennium and \$4 million in the second year (completing the \$8 million annual budget increment to double our degree production), the biennial budget allocated only \$1 million in each year, and used broad language. The Dean of Engineering gave us \$0.5 million annually from Proviso funds, and \$0.5 million in ABB funds, allocating the other \$0.5 million in Proviso funds to other Engineering units. We have no idea what the point of this was, but any rate, there was a clear commitment to *not* count the ABB funds as “an ABB allocation” since these funds were a replacement for Proviso funds that the Legislature had intended for us. Growth funded to approximately 534 annual degrees (nominally 370 Bachelors, 133 Masters, and 31 Doctoral).
- 2018-19: At 75.33 faculty FTE. Proviso 5 provides an additional \$3 million/year in the supplemental budget (effective 7/1/18), completing our growth to approximately 620 annual degrees (nominally 450 Bachelors, 135 Masters, 35 Doctoral). On February 28, 2019, the Bill & Melinda Gates Center for Computer Science & Engineering is dedicated, doubling our space; like the Allen Center, it was largely privately funded. Among the key components of the Gates Center, beyond additional labs and offices, were vastly improved facilities for our burgeoning undergraduate program, and a large number of spaces for small-group interaction. (Proviso 4 and 5 total: \$4M/year.)
- 2019-21: Proviso 6 was funded to grow programs in the College of Engineering. UW’s justification for this funding included Allen School student demand and employer demand, but the College of Engineering chose to allocate none of the funds to the Allen School. Made no sense in terms of student demand or employer demand: the Allen School’s student demand relative to capacity is far, far greater than the rest of the College of Engineering, and the workforce gap in computing (the gap between jobs available and degrees granted) is far greater than in the rest of Engineering.

*In 2021 – following the failure to grow the Allen School in Proviso 6 – Rep. Drew Hansen requested a multi-biennium plan for additional growth. We provided a plan to grow by 400 annual degrees over 4 biennia, with a focus on students from traditionally underrepresented groups.*

2021-22: At 85.5 faculty FTE. We had hoped to be funded to grow by 100 annual degrees during the 2021-23 biennium, but received only half of this via Proviso 7 in the regular session (effective 7/1/21): we received an additional \$2 million/year to grow to 670 annual degrees (nominally 500 Bachelors, 135 Masters, and 35 Doctoral).

2022-23: Proviso 8 is funded (effective 7/1/22): an additional \$2M/year to grow by the full 100 annual degrees, to 720 annual degrees (nominally 550 Bachelors, 135 Masters, 35 Doctoral). (Masters and Doctoral degrees will grow, but our overriding goal is to address Bachelors demand.) (Proviso 7 and 8 total: \$4M/year.)

*Unrelated to enrollment: we received a 1-year temporary appropriation of \$455K to support the Allen School Scholars program for the 2022-23 year.*

2023-25: With the support of the University of Washington, we were funded via Proviso 9 to add 100 annual degrees, to 820 annual degrees (nominally 630 Bachelors, 150 Masters, 40 Doctoral). (Proviso 9 total: \$4M/year - \$2M/year added 7/1/23 and \$2M/year added 7/1/24.)

*Unrelated to enrollment: we received a 2-year temporary appropriation of \$125K/year to support the Allen School Scholars program in 2023-24 and 2024-25. Then, in the 2024 supplemental session, we received \$330K in permanent funding for 2024-25 and \$455K ongoing to support the program.*

2025-27: At 93 faculty FTE (74 tenure-track, 19 teaching-track). With the support of the University of Washington we requested proviso funds to add 100 annual degrees, to 920 annual degrees (nominally 710 Bachelors, 165 Masters, 45 Doctoral). This funding was not awarded. Further, UW reduced our budget by \$1.518M, the equivalent of 38 annual degrees (30 Bachelors, 3 5<sup>th</sup>-year Masters, 5 full-time graduate (2.25 Ph.D. and 2.75 Masters). We did not, however, decrease enrollment in response; in the 2025-26 academic year we will award more than 850 degrees.

### **Proviso-related enrollment increase summary**

July 2012, Proviso 1: \$2M annually to grow from 260 to 315 annual degrees. An internal reallocation of funds at the direction of the legislature, but referred to as Proviso 1 even though there were no new legislative funds.

July 2013, Proviso 2: \$2.9M annually to grow from 315 to 395 annual degrees.

July 2015, Proviso 3a: \$2M annually to grow from 395 to 450 annual degrees.

July 2016, Proviso 3b: \$2M annually to grow from 450 to 505 annual degrees.

July 2017, Proviso 4: \$500K annually from the Legislature, complemented by \$500K non-proviso from the College, to grow from 505 to 534 annual degrees.

July 2018, Proviso 5: \$3M annually to grow from 534 to 620 annual degrees.

July 2021, Proviso 7: \$2M annually to grow from 620 to 670 annual degrees.

July 2022, Proviso 8: \$2M annually to grow from 670 to 720 annual degrees.

July 2023: Proviso 9a, \$2M annually to grow from 720 to 770 annual degrees.

July 2024: Proviso 9b: \$2M annually to grow from 770 to 820 annual degrees. *Separately, we received \$330K in permanent funds in July 2024 to support Allen School Scholars; this will bump to \$455K annually in July 2025.*