

## Steven Nowick Bids Farewell to the CS Department

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<https://www.addtoany.com/share?url=https%3A%2F%2Fwww.cs.columbia.edu%2F2019%2F12678%2F&title=Steven%20Nowick%20Bids%20Farewell%20&find-the-covid-19-resource-guide-here-https://news.columbia.edu/news/update-covid-19-university-guidance>

After 26 years in the computer science department, professor Steven Nowick (<http://www.cs.columbia.edu/~nowick/>) is retiring. Friends, colleagues, and those dear to him recently gathered to celebrate his teaching and academic career — one that has pushed the asynchronous community to be more widely noticed and accepted. Nowick walks away with a body of work that is as diverse and nuanced as the next chapter of his life — composing music.

Many probably do not know that he has a B.A. from Yale University in music and an M.A. in music composition from Columbia University, where his master's thesis was symphony. The better part of his 20s was spent on a music career, during which time he studied privately with composer David Diamond, and in France with the legendary music teacher Nadia Boulanger.



Left to right : Grant Chorley, Steven Nowick, David Conte (chair of composition, San Francisco Conservatory), Fred Blum, Joel Feigin (former music professor, UC Santa Barbara) at the Conservatoire Americaine, Fontainebleau, France (1975).

However, he decided to shift gears and retrain in computer science (CS) when he hit 30 years old. After two years of brushing up on CS concepts, including a class taught by Steven Feiner (<http://www.cs.columbia.edu/~feiner/>) that first introduced him to digital hardware, he applied and was accepted to the PhD program at Stanford University in 1986.

While at Stanford, his interest in asynchronous systems was cemented when he started to work on research with professor David Dill (<https://engineering.stanford.edu/people/david-dill>). In 1993, he found himself back at Columbia as an assistant professor. In his first year, he recognized the need for a Computer Engineering program in the engineering school, and worked with two colleagues from computer science and electrical engineering departments to establish the degree that was later expanded to include a masters program. In his second year at Columbia, he co-founded the IEEE ASYNC symposium (<http://asynsymposium.org/async/Welcome.html>), the premier international forum for researchers to present their latest findings in the area of asynchronous digital design, which is still thriving after 25 years.

“Computer engineering is entirely to Steve’s credit that it grew to what it is today,” said Kathy McKeown (<http://www.cs.columbia.edu/~kathy/>), the Henry and Gertrude Rothschild Professor of Computer Science, who looked through her emails all the way back to the time when she was the department chair in the late 90s for her tribute to Nowick. “It is also because of his persistence and dedication as head of the strategic planning committee, that our faculty has grown.”

**Find the COVID-19 Resource Guide here**  
<https://news.columbia.edu/news/update-covid-19-university-guidance>.

### Computer Science at Columbia University

The computer science department advances the role of computing in our lives through research and prepares the next generation of computer scientists with its academic programs. Find out more about the department here ([/about](#)).

### Upcoming Events

- |               |   |
|---------------|---|
| <b>OCT 23</b> | <b>Next-Generation Domain-Specific Accelerators: From Hardware to System</b><br><b>Monday 2:30 pm</b><br>CS conference room (CSB453)<br>Sophia Shao, UC Berkeley                                      |
| <b>OCT 25</b> | <b>Enabling the Era of Immersive Computing</b><br>Distinguished Lecture Series<br><b>Wednesday 11:40 am</b><br>CSB 451 CS Auditorium<br>Sarita Adve, University of Illinois at Urbana-Champaign       |
| <b>OCT 27</b> | <b>Flipping a coin in the brain &amp; other cognitive primitives via assemblies of neurons</b><br>Theory Lunch<br><b>Friday 12:30 pm</b><br>CS conference room (CSB453)<br>Max Dabaggia, Georgia Tech |
| <b>NOV 01</b> | <b>Distinguished Lecture - Heng Ji</b><br>Distinguished Lecture Series<br><b>Wednesday 11:40 am</b><br>CSB 451 CS Auditorium<br>Heng Ji, University of Illinois at Urbana-Champaign                   |

[View All >>](https://www.cs.columbia.edu/calendar/)

Also at the party, Zvi Galil (<https://www.cc.gatech.edu/people/zvi-galil>), former computer science professor and dean of the School of Engineering and Applied Sciences, shared, “In the good old days we couldn’t even hire one faculty, now they can hire five in a year.” At the time in the late 90s there were less than 20 faculty, currently there are 59 faculty. Said another colleague, Shree Nayar (<http://www.cs.columbia.edu/~nayar/>), “Thank you for all that you’ve done for the department, we would not look the same if not for you.”

Through the years, Nowick has taught and mentored hundreds of students. “He is an amazing academic father,” said Montek Singh (<https://www.cs.unc.edu/~montek/>), a former PhD student who is now a tenured associate professor at the University of North Carolina at Chapel Hill. Singh shared how when they were working on MOUSETRAP (<https://ieeexplore.ieee.org/document/4231890>): High-Speed Transition-Signaling Asynchronous Pipelines, they brainstormed for days working out every little detail. And then they brainstormed even more to come up with the name, which is actually an acronym – Minimum Overhead Ultra-high-Speed Transition-signaling Asynchronous Pipeline. Continued Singh, “I can only hope to be half as good to my PhD students as he is.”



Left to right : Michael Theobald (PhD student), George Faldamis (MS student), Cheoljoo Jeong (PhD student), Melinda Agyekum (PhD student), Steven Nowick, Martha Helfer (Nowick's wife), Cheng-Hong Li (MS student), Montek Singh (PhD student)

The party was also attended by a number of his other former graduate students, post-docs, and outside colleagues, including former PhD student Michael Theobald, a research scientist in formal verification at D.E. Shaw Research, who served as “master of ceremonies.” His asynchronous colleagues Ivan Sutherland (the *Turing Award* winning inventor of interactive computer graphics and virtual reality) and Marly Roncken flew out from Oregon, and computer science professor Rajit Manohar came down from Yale.

“Steve is a highly ambitious person with a lot of passion, a tremendous persistence and a lot of perseverance,” said Jeannette Wing (<https://datascience.columbia.edu/director-jeannette-wing>), the Avaneessians Director of the Data Science Institute and computer science professor. In 2016, Nowick established a working group at the Data Science Institute, and in 2018 worked with Wing to turn it into a center – The Center for Computing Systems for Data-Driven Science (<https://datascience.columbia.edu/computing-systems>). He has gathered 45 faculty from across the university to explore the design and application of large-scale computing systems for data-driven scientific discovery. It is multi-disciplinary and brings together diverse researchers at Columbia in three areas: computing systems, data science and machine learning, and large-scale computational application areas in science, engineering and medicine. Qiang Du

## In the News

### MIT Technology Review

**The Computer Scientist Who Hunts for Costly Bugs in Crypto Code**  
(<https://www.cs.columbia.edu/2023/the-computer-scientist-who-hunts-for-costly-bugs-in-crypto-code/?redirect=0c99d322ac4a621f0cb1bf31ffea64b>)



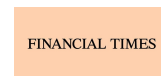
**This Self-Aware Robot Taught Itself How to Control Its Own Body**  
(<https://www.cs.columbia.edu/2022/this-self-aware-robot-taught-itself-how-to-control-its-own-body/?redirect=2275dd724f7cd014090b808bf9f6c3>)



**Columbia Awarded \$185 Million in Patent Infringement Lawsuit**  
(<https://www.cs.columbia.edu/2022/columbia-awarded-185-million-in-patent-infringement-lawsuit/?redirect=00ff51e39830d7b7a1521ed64b517>)



**Mathematicians Transcend Geometric Theory of Motion**  
(<https://www.cs.columbia.edu/2021/mathematicians-transcend-geometric-theory-of-motion/?redirect=5673fa940ca6c0bede69f18e48107>)



**Auto-scans of phones would violate data privacy, say security experts**  
(<https://www.cs.columbia.edu/2021/auto-scans-of-phones-would-violate-data-privacy-say-security-experts/?redirect=2ed01b3c9d786fd4c2557ead92be0>)

## Press Mentions

(<https://datascience.columbia.edu/qiang-du>), a professor from Applied Physics and Applied Mathematics, and associate computer science professor Martha Kim (<https://datascience.columbia.edu/martha-kim-0>) are now co-chairs of the center.

As chair of the working group, in 2017, he organized an on-campus inaugural symposium



Left to right : Columbia Executive Vice President for Research Michael Purdy, Steven Nowick, and professor Sebastian Will, physics department

(<https://engineering.columbia.edu/news/frontiers-in-computing-symposium-2017>), attracting 150 participants, which included leading speakers from IBM, D.E. Shaw Research and NASA Goddard. In 2019, as his final major act as center chair, he co-organized the NY Scientific Data Summit (<https://www.bnl.gov/nysds19/>) jointly with nearby Brookhaven National Laboratory, to showcase regional research on data-driven science, and to forge closer bonds between the two institutions.

Of course, asynchronous research and activities to advance the field were happening simultaneously with all these other activities. Nowick has been one of the leaders in the revival of clockless, or asynchronous, digital hardware systems. While most digital systems today are synchronous, built using a central clock, increasingly the challenge of assembling large, complex and heterogeneous systems – with dozens to millions of processors and memory units – is becoming unworkable under centralized control. The vision of asynchronous systems has seen a resurgence in the last twenty years, and Nowick has been at the forefront. Such systems, assembled with “Lego-like” hardware building blocks, which are plugged together and communicate locally, promise to overcome some of the extreme barriers faced in the microelectronics industry, providing low energy, ease of assembly, high performance, and reliable operation.

Recent asynchronous advances include “brain-inspired” (i.e. neuromorphic) chips from IBM (TrueNorth) and Intel (Loihi). Nowick has collaborated closely with AMD Research, migrating his asynchronous on-chip networks into the company’s advanced technology, and experimentally demonstrating significant benefits in power, performance and area, over their synchronous commercial designs. He and his students have also introduced an influential set of computer-aided design (CAD) software tools, optimization algorithms and analysis techniques, for asynchronous circuits and systems. In addition, he has worked closely over the years with IBM Research, Boeing and NASA on asynchronous design projects.

Nowick is an IEEE Fellow (2009), a recipient of an Alfred P. Sloan Research Fellowship (1995), received NSF CAREER (1995) and RIA (1993) awards, and he is also a Senior Member of the ACM. He received Best Paper Awards at the IEEE International Conference on Computer Design (1991, 2012) and the IEEE Async Symposium (2000). He also acted as program chair at various workshops and conferences, as well as served on leading journal editorial boards, such as IEEE Design & Test Magazine, IEEE Transactions on Computer-Aided Design, IEEE Transactions on VLSI Systems, and ACM Journal on Emerging Technologies in Computer Systems, and served as a guest editor for

## TIME

How The Morning Show Rewrites the Notorious 2014 Sony Hack  
(<https://www.cs.columbia.edu/2023/how-the-morning-show-rewrites-the-notorious-2014-sony-hack/>)  
Suman Jana

## The Washington Post

Your Résumé Isn't the Only Thing Popular Job Sites Evaluate  
(<https://www.cs.columbia.edu/2023/your-resume-isnt-the-only-thing-popular-job-sites-evaluate/>)  
redirect=01cb778274fb38a72826afd84056at

## SCIENTIFIC AMERICAN

Yes, AI Models Can Get Worse over Time  
(<https://www.cs.columbia.edu/2023/yes-ai-models-can-get-worse-over-time/>)  
Kathleen McKeown, Vishal Misra

## FOX NEWS

Here's how AI is being used to unlock secrets still hidden in the human brain  
(<https://www.cs.columbia.edu/2023/heres-how-ai-is-being-used-to-unlock-secrets-still-hidden-in-the-human-brain/>)  
Richard Zemel

## Gothamist

Does AI in NYC need restrictions? Officials hold closed-door meeting to discuss  
(<https://www.cs.columbia.edu/2023/does-ai-in-nyc-need-restrictions-officials-hold-closed-door-meeting-to-discuss/>)  
Jeannette Wing

a special issue of the Proceedings of the IEEE. He holds 13 issued US patents, and his research has been supported by over 20 grants and gifts. In recognition of his teaching, he also received the SEAS Alumni Distinguished Faculty Teaching Award in 2011.

But the pull of music has become stronger in recent years.

“In the back of my mind I always knew I would return to it and I should do it now while I can still do it well, rather than when I’m in my 80s or 90s,” said Nowick.

He plays the piano and his focus will be classical composition. He has written music for string quartet, orchestra, choir, piano, cello, two flutes, and for voice and piano. He is writing new compositions and looks forward to his music being performed.

“Music will be his act two,” said Montek Singh. “So in a sense he’s come full circle.”

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### Apply

Columbia Undergraduate Admissions (SEAS)  
(<http://undergrad.admissions.columbia.edu/learn/academiclife/undergrad>)

M.S./Ph.D. Application  
(<https://apply.engineering.columbia.edu/apply/>)

MS Express Application for Current Undergrads  
(<http://gradengineering.columbia.edu/ms-express-application-columbia-university-undergraduates>)

CS@CU MS Bridge Program in Computer Science  
(<https://www.cs.columbia.edu/ms-bridge/>)

(<https://www.columbia.edu>)

### Links

Map  
([https://www.cs.columbia.edu/wp-content/uploads/2022/07/morningsidemap\\_2015aug-7.pdf](https://www.cs.columbia.edu/wp-content/uploads/2022/07/morningsidemap_2015aug-7.pdf))

School of Engineering And Applied Science  
(<http://engineering.columbia.edu/>)

Data Science Institute  
(<http://datascience.columbia.edu/>)

CRF  
(<http://www.cs.columbia.edu/crf>)

MICE  
(<https://mice.cs.columbia.edu>)

ASCENT Program  
(<https://www.cs.columbia.edu/ascent/>)

Copyright FAQ  
(<https://www.cs.columbia.edu/resources/copyright/>)

CS Advising  
(<https://www.cs.columbia.edu/academic-advising/>)

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