ACS | Southern California Local Section

SCALACS

A Publication of the Southern California Section of the American Chemical Society

VOLUME LXXXI/No. 6 OCTOBER 2026

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You are invited to 2 Upcoming Virtual Seminars:

Surface Chemistry of Supplementary Cementitious Materials: A Key Lever in Cement Decarbonization

Presented by

Professor Franco Zunino, University of California, Berkeley

October 22, 2026 • 3:00 to 4:00 pm (PST)

See **Page 2** for registration.

Using DNA Library Barcodes as Flashlights in a Black Box

Presented by

Professor Valeria Tohver Milam,

Georgia Institute of Technology

November 19, 2026 • 3:00 to 4:00 pm (PST)

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Summary Report on Prof. Jillian Blatti's Presentation: Beyond the Double Helix: The Chemistry of Nucleic Acids and the Amazing World of DNA Nanotechnology

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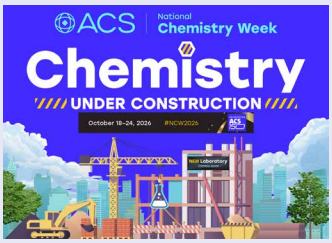

National Chemistry Week "Chemistry Under Construction" October 18 - 24

Sign up for ACS Program-in-a-Box

See **Back Cover** for registration.

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Volume LXXXI OCTOBER 2026 Number 6

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CHAIR'S MESSAGE

Dear SCALACS Members,

October is a month filled with chemistry! We have National Chemistry Week coming up in mid-October, with the theme of "Chemistry Under Construction." October 23 is the official Mole Day! I'm going to share a song I use for teaching stoichiometry conversions to my students (sung to the tune of "If You're Happy and You Know It, Clap Your Hands"):

Grams to moles, grams to moles, use molar mass,
Mole to moles, moles to moles, use the reaction coefficients,
Mole to grams, moles to grams, use molar mass again,
And that's how you do stoichiometry!

On that note, I hope you all have a happy, happy October of chemistry!

Sincerely,
Edye Udell
Chair, SCALACS
Science Teacher, Westridge School
(EUdell@westridge.org)

SCALACS SEEKING CANDIDATES FOR ELECTION!

SCALACS is actively seeking candidates to fill leadership positions in the Executive Committee—Member-at-Large, Chair-Elect, and Councilors.

The Member-at-Large role is a 3-year term starting **January 1, 2027,** and involves attending monthly Executive Committee meetings (most held remotely), participating in one of our committees (initially as a helper and later as a leader), and, in the third year, joining our Executive Committee to help set and approve the budget for the following year. The Chair-Elect will assist in overseeing the organization's activities and prepare to assume the role of Chair in the future, while Councilors will represent SCALACS at local and national levels, contributing to the strategic direction and governance of the organization.

For details on our committees, visit SCALACS Committees webpage, http://scalacs.org/?page_id=4.

We feel it is very important to engage all interested members in Southern California Section leadership. If you're interested in participating in your Section's governance or know of someone who is, please email us by **October 15, 2026,** office@scalacs.org. We look forward to hearing from you.

In celebration of the National Chemistry Week, SCALACS Presents This Virtual Seminar

Title: Surface Chemistry of Supplementary Cementitious Materials: A Key Lever in Cement Decarbonization on October 22, 2026 from 3:00 to 4:00 pm (PST)

Professor Franco Zunino
Assistant Professor, Dept. Civil & Environmental Engineering, University of California, Berkeley

Register here: https://bit.ly/4dRY5t3

Abstract

Replacing a portion of Portland cement with locally sourced supplementary cementitious materials (SCMs) is the most effective strategy to mitigate CO2 emissions and simultaneously reduce our reliance on imported minerals within the construction sector. However, predicting the chemical reactivity of these complex materials remains an elusive challenge. Traditional bulk and uniparameter metrics, such as metakaolin content or specific surface area, frequently fail to explain significant discrepancies in reactivity between seemingly identical materials.

This talk proposes a fundamental paradigm shift away from traditional bulk properties toward surface chemistry, lattice defects, and atomic configurations. By utilizing synthetic clay minerals and innovative 29Si isotopic labeling, our research group has achieved a 40x signal enhancement in solid-state NMR (ssNMR) experiments. This breakthrough enables precise, unprecedented tracking of metakaolin dissolution and early-age hydration kinetics in cementitious systems. Furthermore, we incorporate cutting-edge 4D-STEM (Four-Dimensional Scanning Transmission Electron Microscopy) and zone axis orientation mapping to track the amorphization of aluminosilicate lattices upon calcination. Together, these advanced tools provide the detailed structural insights required to develop accurate models and robust predictive frameworks for next-generation cements.

Speaker's Biography

Prof. Franco Zunino is an Assistant Professor in the Department of Civil and Environmental Engineering at the University of California, Berkeley. His research centers on addressing the global sustainability challenges of construction materials, with a primary focus on low-carbon cements, supplementary cementitious materials (SCMs), and early-age cement hydration chemistry. His Science of Cementitious Materials (SCiM) Lab specializes in bridging fundamental material science with civil engineering applications by leveraging advanced, multi-scale characterization tools, including solid-state NMR (ssNMR) with isotopic labeling, thermodynamic modeling, and advanced electron microscopy techniques like 4D-STEM, to explore material characteristics from atomic surfaces to structural performance.

Professor Zunino's research has received widespread international recognition. He is a recipient of the 2026 National Science Foundation (NSF) CAREER Award, which follows a Swiss National Science Foundation (SNSF) Starting Grant in 2024 and an SNSF Ambizione grant in 2022. His honors also include the 2023 RILEM Colonnetti Medal, the 2022 American Concrete Institute (ACI) Wason Medal for Most Meritorious Paper, and the global Nanocem 2020 Prize for the best doctoral thesis in cement and concrete science. He is also actively engaged in professional service and standardization leadership. He currently serves as Chair of the ACI 240.0A subcommittee on calcined clays, secretary of the ACI 231 committee on early-age properties of concrete, and chair of Workgroup 5 within the ASTM C09.24 subcommittee on reactivity. Additionally, he is a member of the RILEM Educational Activities Committee (EAC) and serves on the Editorial Boards of Construction and Building Materials, RILEM Technical Letters and as an Associate Editor in the ASCE Journal of Materials in Civil Engineering.

SCALACS Presents This Virtual Seminar under the LSAC-IPG Grant.

Title: Using DNA Library Barcodes as Flashlights in a Black Box on November 19, 2026 from 3:00 to 4:00 pm (PST)

Professor Valeria Tohver Milam
Associate Professor, School of Materials Science & Engineering
Georgia Institute of Technology, Atlanta, Georgia

Register here: https://bit.ly/4hv7A2g

Abstract

As a recognition-based macromolecular material, DNA presents advantageous composition-structure-property relationships. Single-strand DNA sequences known as aptamers can, in principle, achieve target binding specificity and affinity comparable to antibodies; however, their discovery remains slow and labor-intensive. The traditional aptamer discovery or screening platform called Systematic Evolution of Ligands by Exponential Enrichment (SELEX) typically relies on employing a random sequence library to undergo repeated cycles of target binding; harsh elution conditions to dissociate oligonucleotide-target complexes; and oligonucleotide amplification to continuously enrich the candidate population with "winners" from prior screening cycles. To address limitations in evolution-based aptamer screening, the Milam group developed an alternative, competition-driven aptamer screening platform called Competition-Enhanced Ligand Selection (CompELS) using designer, barcoded libraries and gentler enzyme-based DNA elution. To elucidate key parameters governing aptamer selection outcomes during the multiround, "black box" screening process itself, the effects of evolution-based vs. competition-driven screening strategies and library design were evaluated in separate parallel aptamer selection studies using a model protein target called mCherry. These results successfully demonstrated a streamlined aptamer selection methodology that accelerates aptamer discovery by integrating CompELS, rational library design, and enzymatic elution.

Speaker's Biography

Valeria Tohver Milam received her B.S. in Materials Science and Engineering with Honors from the University of Florida. She specialized in metallurgy and also received a minor in Portuguese. For her doctoral studies at the University of Illinois, Urbana-Champaign, she explored the phase behavior, structure and properties of nanoparticle-microsphere suspensions and reported a novel colloidal stabilization mechanism called nanoparticle "haloing." Her postdoctoral work at the University of Pennsylvania focused on DNA-mediated colloidal assembly. She joined the faculty at the Georgia Institute of Technology in July 2004 as an assistant professor in the School of Materials Science & Engineering and was promoted to associate professor in July 2011. At Georgia Tech her research efforts have focused on oligonucleotides as enabling macromolecular materials and probes in isothermal colloidal assembly-disassembly schemes and high throughput oligonucleotide detection. Her more recent efforts explore DNA as biomimetic ligands that bind in a specific and strong, yet noncovalent manner to nonnucleotide targets. Her honors include a Georgia Cancer Coalition Distinguished Scholar Award, CETL/BP Teaching Award, AFRL Summer Faculty Fellowship, 3M Nontenured Faculty Award, NSF CAREER Award, MSE Faculty Fellowship, and NSF Mid-Career Advancement Award.

Summary Report by Krishna Kallury on the Seminar presented by

Prof. Jillian Blatti, Pasadena City College

Venue: **Glendale High School**

Date: **September 8, 2026 from 11am to 12 noon**

Title: **Beyond the Double Helix: The Chemistry of Nucleic Acids and the Amazing World of DNA Nanotechnology**

Krishna's Introduction

DNA nanotechnology is the design and manufacture of artificial nucleic acid structures for technological uses. In this field, nucleic acids are used as non-biological engineering materials for nanotechnology rather than as the carriers of genetic information in living cells. Researchers in the field have created static structures such as two- and three-dimensional crystal lattices, nanotubes, polyhedra, and arbitrary shapes, and functional devices such as molecular machines and DNA computers. The field is beginning to be used as a tool to solve basic science problems in structural biology and biophysics, including applications in X-ray crystallography and nuclear magnetic resonance spectroscopy of proteins to determine structures. Potential applications in molecular scale electronics and nanomedicine are also being investigated.

Summary of the Seminar

At the outset, Mr. Edward Tahmassian, Science Teacher, Glendale High School, introduced the speaker to the predominantly student audience.

Jillian started her presentation by referring to the periodic table. The most abundant element is hydrogen, whose orbital structure was characterized by atomic force microscopy (AFM). In the universe, AFM shows the "Eagle Nebula" consists of molecular hydrogen and dust. Besides hydrogen, the other elements of importance to DNA are carbon, nitrogen, phosphorus, oxygen and sulfur. The basic components of DNA are the nucleobases (Guanine G, Cytidine C, Adenine A and Thymidine T), the sugar moity Ribose and the phosphate group attached to the sugar. G binds to C through three hydrogen bonds, while A binds to T through two such bonds. These are all noncovalent hydrogen bond interactions and form the DNA double helix structure, as first reported by Watson and Crick. Sulfur is not a normal building block of standard DNA, but it plays a fascinating and specialized role through natural backbone modifications and protein interactions. Several other structural forms and modifications of the basic DNA molecule have been reported for a plethora of applications. Atomic Force Microscopy (AFM) is the best surface structure scanning analytical technique for studying these modifications at a single molecular level.

Atomic Force Microscopy (AFM)

AFM is a powerful imaging technique that allows for structural characterization of single biomolecules with nanoscale resolution. AFM has a unique capability to image biological molecules in their native states under physiological conditions without the need for labeling or averaging. DNA has been extensively imaged with AFM from early single-molecule studies of conformational diversity in plasmids, to recent examinations of intramolecular variation between groove depths within an individual DNA molecule. The ability to image dynamic biological interactions in situ has also allowed for the interaction of various proteins and therapeutic ligands with DNA to be evaluated—providing insights into structural assembly, flexibility, and movement. Innovations and optimization in AFM imaging have advanced our understanding of DNA structure, mechanics, and interactions. These include studies of the secondary and tertiary structure of DNA, including how these are affected by its interactions with proteins. The broader role of AFM as a tool in translational cancer research is also explored through its use in imaging DNA with key chemotherapeutic ligands, including those currently employed in clinical practice.

Jillian's Briefing on Her Ph.D. Work

The ability to manipulate algal fatty acid

biosynthesis would be a significant stride towards developing algae as a biodiesel feedstock. In fatty acid biosynthesis within an algal chloroplast, an acyl carrier protein (ACP) tethers the growing fatty acid as it undergoes iterative cycles of elongation, and a thioesterase (TE) domain catalyzes the release of a mature fatty acid from the ACP. As plant TEs specific for certain chain length fatty acids have altered the fatty acid profile of transgenic plants and bacteria, this has emerged as a promising strategy to modify algal fatty acid content to fashion an optimized biodiesel feedstock. The work outlined in her thesis aimed to investigate intermolecular interactions in algal fatty acid biosynthesis to facilitate engineering. A novel strategy was employed in which a chemical probe inspired by the enzymatic activity of the algal TE was synthesized, attached to the algal ACP chemoenzymatically, and used to trap algal ACP-TE interactions in vitro. No protein-protein interactions were detected between plant TEs and the algal ACP in vitro, and thus plant TEs did not elicit the desired phenotype when engineered into the algal chloroplast. Using protein-protein interactions as a means to control product identity may shift the paradigm towards rationally designed engineering approaches to optimize algae as a bioenergy source (see Figure 1 below).

Frances Arnold's Pioneering Research

Jillian then briefly mentioned about the pioneering work of Nobel Laureate Prof. Frances Arnold of CalTech. With one ingenious idea and years of subsequent work, Frances Arnold turned bioengineering upside down. Recognizing that nature was "the best bioengineer in history," she figured out how to let evolution be her partner in the lab. She pioneered the use of directed evolution to design new enzymes, with applications as broad as they are essential, from pharmaceuticals to renewable fuels.

DNA Origami

Jillian then described how DNA Origami could be used for artwork, a topic exciting to the student communities. In 2006, Caltech's Paul Rothemund, Research Professor of bioengineering, computing and mathematical sciences, and computation and neural systems, developed a method to fold a long strand of DNA into a prescribed shape. The technique, dubbed DNA origami, enabled scientists to create self-assembling DNA structures that could carry any specified pattern, such as a 100-nanometer-wide smiley face.

Scientists at the California Institute of Technology (Caltech) have created what is possibly the world's smallest Mona Lisa, using a mosaic of individual tiles of folded strands of DNA that, when viewed under atomic force microscopy (AFM), appears unmistakably as the enigmatic face of Leonardo da Vinci's famous painting (Figure 2). The technique, developed by researchers in the laboratory of assistant professor of bioengineering Lulu Qian, Ph.D., builds on the original DNA origami technology developed by Caltech's Paul Rothemund, Ph.D., but allows the construction of much larger mosaics, or arrays. The Caltech researchers project that the method could one day enable scientists

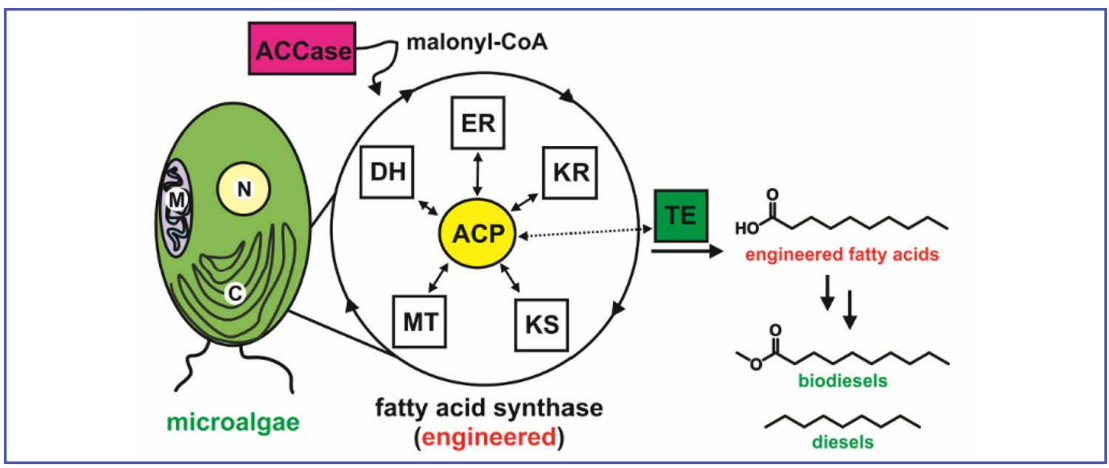


Figure 1: 3 Engineering algal fatty acid biosynthesis

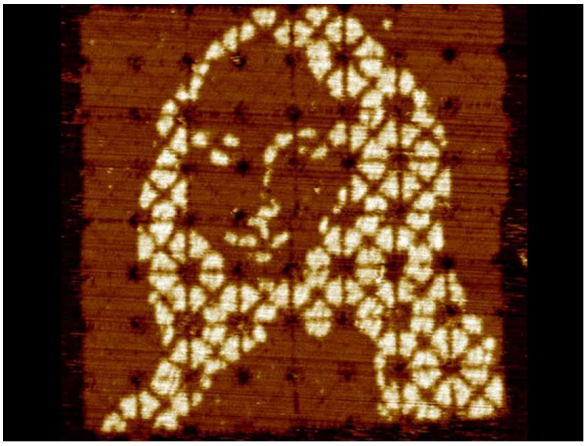


Figure 2: Mono Lisa generated through DNA Origami

to build complex components in DNA robots, localized DNA circuits, and nanostructures to help study molecular interactions in chemical and biological systems.

Nanostars of Pasadena City College's Synthetic Biology Research Program

A group of students and their professor are working together in an undergraduate research program in DNA nanotechnology funded by the National Science Foundation. They are the Nanostars of this program, students who work together on projects regarding using the tools of biology to build materials of the future.

"Our goals are synthetic biology," says Dr. Jillian Blatti, the Principal Investigator of the program. "My role is education and workforce development, to provide a training program for undergraduate students to learn the skills of synthetic biology. We have authentic research projects that my collaborators and I design."

Blatti and her collaborators—Elisa Franco at UCLA, Deborah Fygenson at UCSB and Paul Rothemund at Caltech—design open-ended explorations in the training program, allowing their students to make discoveries.

Over the summer the group has worked together on various experiments, some being uploaded to their YouTube channel. Their synthetic biology research techniques got them involved in a bootcamp at Franco's Dynamic Nucleic Acid Systems lab at the UCLA Samueli School of Engineering, where they got one week experience in UCLA's bioengineering lab and learned from graduate students, postdocs and professors. There, the Nanostars learned techniques in synthetic biology, setting up biochemical reactions and designing experiments forming DNA condensates, quantifying DNA and measuring enzyme activity.

The "PCC Nanostars" undergraduate research program designs multi-armed branched DNA structures—known as DNA nanostars—to engineer advanced materials and simulate microscopic cellular behavior.

The Core Technology: How DNA/RNA Nanostars Work (see Figure 3)

- Programmable Multi-Armed Architecture: Researchers design short strands of DNA or RNA that fold into multi-armed shapes (usually 3 or 4 arms).
- Self-Assembly via "Sticky Ends": At the tip of each arm are specific, complementary sequences (sometimes called "kissing loops" in RNA chemistry). Because base-pairing rules (A-T/U and G-C) are entirely predictable, scientists can program exactly

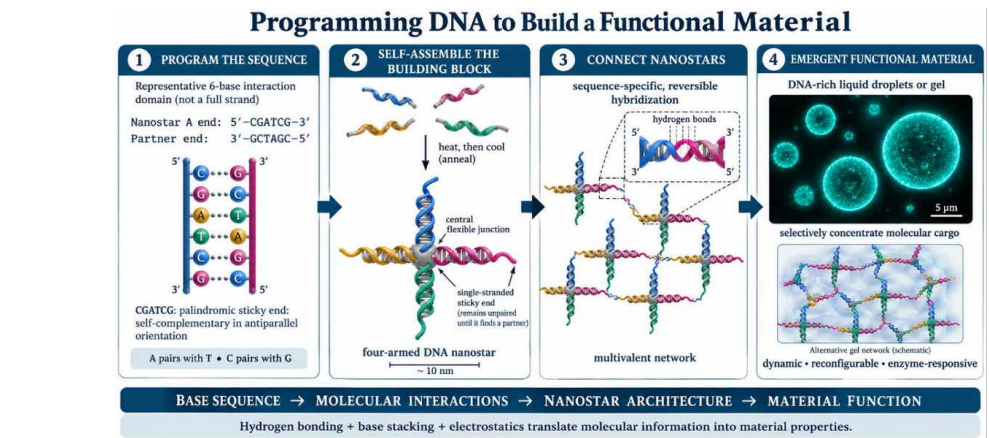


Figure 3: Functional Materials from through DNA Nanotechnology

how and when these nanostars link together.

- o Biomolecular Condensates: When a mass of nanostars bind together, they undergo liquid-liquid phase separation. This forms microscopic droplets or "condensates". These function like artificial organelles or localized bioreactors, trapping specific molecules and focusing chemical reactions inside cell-like compartments.
- o Nanoscale Bioreactors: These synthetic DNA/RNA droplets act like primitive, artificial cellular organelles. By altering the DNA sequence length (e.g., using 15, 20, or 25 base pairs per arm) or valence, scientists can precisely tune how porous or dense the droplets are.

1. Localized Chemical Reactions: The core breakthrough is using these condensates to trap and compartmentalize biochemical reactions. For instance, PCC researchers fused DNA nanostars with specialized structures called G-quadruplexes. These structures bind to hemin (an iron co-factor) to create a DNAzyme capable of catalyzing oxidation-reduction (redox) reactions inside a single droplet layer.

2. Hybrid In Silico Modeling

A crucial component of this chemistry involves bridging laboratory work with computational chemistry. The PCC team collaborates with graduate labs to run coarse-grained molecular dynamics simulations using a software tool called oxDNA. This lets researchers generate 3D visual models to accurately predict the mechanical properties and behaviors of the synthetic structures before synthesizing them in vitro.

Materials Science: Metallic Gold Nanostars (Rice, NIST, PNNL)

In traditional chemistry and physics labs, a "nanostar" is a virus-sized nanoparticle made of solid gold or silver that features a spherical core surrounded by multiple sharp, symmetrical points.

- o The Chemistry: Labs synthesize these using bottom-up chemical reduction. For example, the Pacific Northwest National Laboratory (PNNL) uses programmable synthetic proteins called peptoids to precisely guide gold atoms into perfect five-fold twinned star shapes. Other labs use a "silver seed-mediated growth method" or dimethylamine (DMA) to force symmetric spikes to grow out of a gold nucleus.
- o How It Works (The "Lightning Rod" Effect): When light hits a gold nanostar, it triggers a phenomenon called Surface Plasmon Resonance (SPR). The electromagnetic field becomes concentrated and intensely magnified at the sharp tips of the nanostar, creating what scientists call "hot spots".

Applications:

Ultra-Sensitive Chemical Sensors: Originally pioneered at Rice University's Laboratory for Nanophotonics, these stars are used in SERS (Surface-Enhanced Raman Scattering). If a chemical molecule lands near a nanostar tip, its optical signature is magnified by millions of times, allowing detectors to identify single molecules.

Medical Diagnostics and Cancer Tracking: Because cancer blood vessels are highly porous, gold nanostars can easily slip through and accumulate inside cancer cells. When scanned with infrared lasers, the nanostar tips light up brilliantly, allowing doctors to spot tiny, early-stage tumors or track target microRNA biomarkers.

How DNA is converted into proteins (see Figure 4)

Jillian then described in detail about protein synthesis using DNA nanotechnology. She mentioned about how ailments like diabetes, cancer, rheumatoid arthritis and hemophilia are treated with protein-based medications. A variety of protein-based medications are in the

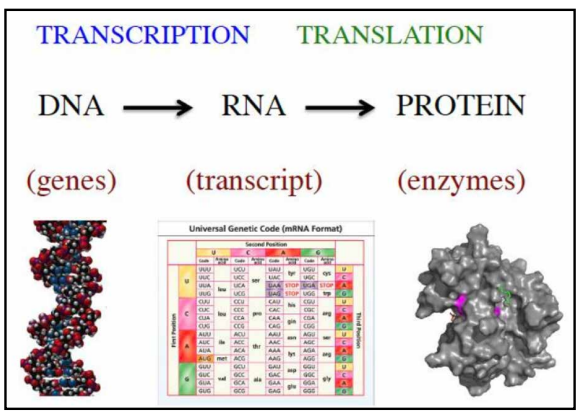


Figure 4: Conversion of DNA into Proteins by Transcription & Translation

market for treating these and other ailments. However, they are very expensive. Proteins are generated in the body from DNA genes through a process of transcription and translation. It involves the conversion of DNA genes in the cells into messenger RNA which then goes to the protein through the translation by coding. Nanotechnology enables the synthesis of proteins much cheaper.

Making functional materials with DNA nanotechnology uses the predictable, programmable rules of Watson-Crick base pairing (adenine with thymine, guanine with cytosine) to program synthetic DNA strands to self-assemble into precise 2D and 3D nanoscale shapes.

Core Assembly Techniques

- DNA Origami: A long single-stranded "scaffold" DNA is folded into custom shapes using hundreds of short "staple" strands.
- Tile-Based Assembly: Small, rigid branched DNA motifs (like Holliday junctions) connect via sticky ends to form extended lattices or periodic arrays.
- Hierarchical Growth: Modular building blocks or seeds are scaled up to form microscale structures, crystals, and large frameworks.

Key Applications in Functional Materials

- Nanoelectronics and Photonics: DNA-directed assembly positions metallic, semiconducting, and carbon components to manufacture switchable thin films, photonic crystals, and nanoscale superconductive layouts.

3. Biocatalysis and Diagnostics: Coupling enzymes or DNAzymes onto programmable frameworks controls spatial proximity and stoichiometry, enhancing multi-enzyme cascade efficiency and colorimetric or fluorescent biosensing.

4. DNA nanotechnology has emerged as a promising strategy for designing drug delivery systems that are safe, non-immunogenic, biodegradable, non-toxic, and biocompatible. When employed as drug carriers, DNA nanostructures offer several advantages, including precise programmability, scalable synthesis under optimized conditions, high structural consistency, and customizable control over size, shape, and functionality. Their programmability arises from predictable Watson-Crick base pairing, enabling the rational design of complex nanostructures with superior precision compared to conventional synthetic nanoparticles or polymeric carriers. While large-scale DNA synthesis can be costly, advancements in enzymatic synthesis and high-throughput oligonucleotide production have demonstrated cost-reduction potential relative to certain polymeric or lipid-based nanocarriers. DNA nanostructures can enhance therapeutic efficacy, minimize cytotoxicity in healthy tissues, and improve the bioavailability of poorly soluble drugs. By conjugating them with functional elements—such as polymers, peptides, lipids, proteins, inorganic nanoparticles, and targeting ligands—via diverse bioconjugation strategies, their stability can be improved, circulation time extended, and targeted drug delivery efficiency optimized. Furthermore, smart DNA nanostructures equipped with targeting moieties or stimuli-responsive elements enable precise drug release, minimizing premature leakage and off-target effects. These advanced nanocarriers facilitate drug accumulation at target sites, enhance cellular uptake, bypass efflux mechanisms, and mitigate adverse reactions. By refining drug dispersion and release kinetics, they accelerate therapeutic action and improve overall treatment outcomes.

Jillian concluded her presentation by summarizing the new curriculum for her students in chemistry as well as their biology counterparts that includes climate remediation and nanotechnological advances.

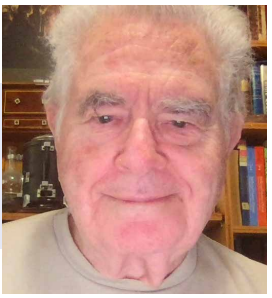
Additional Reading Materials:

1. *Omar Saleh et al Proc. Natl. Acad. Sci. 2026, 123 (7), 1*
2. *Yuqi Huang et al RSCAdv. 2025, 15, 6208*
3. *Wyss Institute (Harvard Univ) Bulletin (William Shih and Wesley Wong)*
4. *Supriya Pande et al Fuel, 2024, 367, 131 547*
5. *Haniyun Zhu et al ACS Nano Letters 2026 (https://doi.org/10.1021/acs.nanolett.6c02181)*
6. *Muhannad Atelah et al Analytical Chemistry 2026 (https://doi.org/10.1021/acs.analchem.6c02297)*

THIS MONTH IN CHEMICAL HISTORY

BY

HAROLD GOLDWHITE
California State University, Los Angeles
hgoldwh@calstatela.edu



On re-reading one of my favorite recent works of chemical history, "The Matter Factory" A History of the Chemistry Laboratory, by Peter J.T. Morris (Reaktion Books, London, 2015) I encountered a concept that I think is worth a column – namely The Chemical Museum. Do not confuse this idea with chemical displays in museums of science for instance the Deutsches Museum in Munich or the Science Museum in London. The Chemistry Museum of the nineteenth and early twentieth centuries was the name given to collections of chemical compounds and sometimes apparatus attached to Departments of Chemistry and used in various ways in the activities of the department.

As early as 1803 the chemistry department of Trinity College, Dublin purchased cabinets to house the collections of Professor Robert Perceval, who was about to retire. Part of this collection was transferred to the new Chemistry building some 80 years later. The idea of a chemical museum that could house samples of compounds to be used as references for compounds produced in research or used as starting materials in industrial chemistry spread widely. In 1815 a teaching museum was set up at the mining school at Freiberg in Saxony. Museums were established at Prague in 1820 and at Edinburgh in 1823. By mid-century several more universities followed suit including Munich, King's College, London, Heidelberg, and Oslo. Between the 1860s and the 1890s "Every self-respecting chemical laboratory built in this period had a chemical museum, however small it may have been."

Wilhelm Hoffman was a great supporter of chemical museums. Here is his description of the Great Museum for the Scientific Collections of the Institution at Berlin: "…a magnificent hall , 19 meters long and 8 meters broad, the arched roof of which is supported by iron columns… The architecture of the hall suggests a division of the collection into three; minerals, rocks, and metallurgical products…; the chemical collection..; models, drawings, diagrams etc." The chemical museum of the ETH in Zurich was mostly dedicated to technical chemistry including raw materials, intermediate and final products, and the course of manufacture. The museum at Liverpool set up in 1878 was designed in part as a teaching tool. "The organic portion of the museum is being arranged on an effective educational plan, the fundamental hydro-carbons being placed on the lowest shelf, and each shelf above containing the derivatives… so that the homologous series is in horizontal lines and the analagous series in perpendicular lines."

The U.S.A. had many chemical museums. Chandler's museum at Columbia, set up in the mid-1860s, included historical artefacts such as Edison's light bulb, Priestley's gas-handling equipment, and Perkin's mauveine dye. The Museum of Materia Medica at the University of Michigan, established in 1856, contained over 500 samples of crude organic substances obtained from Paris. While these and many other museums are described in documents very few photographs exist.

After the decline of the chemical museum some departments of chemistry set up morgues to preserve the collections of compounds from the laboratories of retired faculty. Richard Laursen recalls the morgue at Harvard in the 1960s. "I remember visiting the Harvard chemical morgue once and finding a bottle with a label handwritten in French. I was told it had been part of a shipment of chemicals…that was shipped from France to New Orleans during the Civil War and had been captured by the Union Navy."

It is not clear why chemical museums slowly disappeared in the early 20th. Century. Perhaps they remained peripheral to the main tasks of the department – teaching and research. Perhaps the space allocated to them was gobbled up by the needs of these main tasks. By the mid 1950s most chemical museums had disappeared. Some of their collections were donated to historical science museums, but probably the majority ended up in tattered cardboard boxes, to end finally in the waste dump – a sad ending to a worthy institution.

2026 UPCOMING EVENTS

October 15	Last day to submit nominations for candidates to fill leadership positions in the Executive Committee
October 18 - 24	National Chemistry Week - Chemistry Under Construction
October 22	Surface Chemistry of Supplementary Cementitious Materials: A Key Lever in Cement Decarbonization - A virtual seminar by Professor Franco Zunino, Assistant Professor, Dept. Civil & Environmental Engineering, University of California, Berkeley
October 23	Mole Day
November 19	Using DNA Library Barcodes as Flashlights in a Black Box - A virtual seminar by Professor Valeria Tohver Milam, Associate Professor, Georgia Institute of Technology, Atlanta

Actual event dates and titles to be announced. Events are subject to change. For most up-to-date information, visit www.scalacs.org.

ACS | National Chemistry Week

October 18–24, 2026

Chemistry UNDER CONSTRUCTION

Celebrate National Chemistry Week and 150 Years of ACS with Program-in-a-Box

Get ready to celebrate National Chemistry Week on October 21, 2026 at 7:00 PM ET / 4:00 PM Pacific Time (PDT) with ACS Program-in-a-Box!

ACS' Program-in-a-Box is a 75-minute interactive livestream broadcast from ACS headquarters featuring technical presentations from experts, Q&A, "ChemClash" chemistry trivia, networking ice breakers, and prizes. While registration for a program box has closed, you are still welcome to register for the live event on this year's theme, "Chemistry Under Construction."

Register at: https://www.acs.org/acs-webinars/program-in-a-box.html

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