

## Philip S. Lukeman

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### Current Employment

Assistant Professor of Chemistry 8/07-current

*Research focus:* Covalent chemistry to control Nucleic Acid Nanotechnology.

*Teaching:* Organic Chemistry Sequence : Lecture and Lab.

*Mentoring new researchers:* Supervision of 3 undergraduate students.

### Awards

Mentor Recognition Awards. Siemens Westinghouse Corporation, 5/03 and 1/05.

### Employment History

New York University, Chemistry Department  
Clinical Assistant Professor of Chemistry 9/04-8/07  
Postdoctoral Researcher. Advisor: Professor N. Seeman. 9/99-8/04

*Research focus:* Organic and biophysical chemistry to control materials synthesis at the nanometer scale using Nucleic Acid Nanotechnology.

*Teaching:* Lectured Freshman through Senior level courses including Organic, Supramolecular and General Chemistry. Guest lectured Biochemistry.

*Mentoring new researchers:* Supervised and published with a group of 3-4 high school and undergraduate students. HS student published in Chemical Communications and won 2003 Grand Prize at the Intel Science/Engineering fair.

### Education

Cambridge University, UK.  
Chemistry Department / Sidney Sussex College 10/95-7/99

Ph.D. in Supramolecular Chemistry. Advisor: Professor J.K.M. Sanders  
Thesis: 'Controlling Dynamic Combinatorial Libraries'.

*Research Focus:* Combinatorial synthesis under thermodynamic control to probe molecular interactions.

Leicester University, UK / Colorado State University 10/91-5/94

B.Sc. (Honors) 1st class in Chemistry.

## Philip S. Lukeman

### **Publications** (\* Undergraduate Student co-author, † High School Student co-author)

Lukeman PS, Stevenson ML\*, Seeman NC, 'Morphology Change of Calcium Carbonate in the Presence of Polynucleotides', *Crystal Growth & Design*, *in press*, publication due mid-March 2008

Lukeman PS, Seeman NC, 'Nucleic Acid Nanostructures', *Reports on Progress in Physics*, 2005, 68, 237-270

Lukeman PS, Mittal AC†, Seeman NC, 'Two dimensional PNA/DNA arrays', *Chemical Communications*, 2004, 15, 1694-1695

Zhu L, Lukeman PS, Canary JW, Seeman NC, 'Nylon/DNA: Single-stranded DNA with a covalently stitched nylon lining', *Journal of the American Chemical Society* 2003, 125, 10178-10179

Lukeman PS, Sanders JKM, 'Macrolactone-based dynamic combinatorial libraries of cholate monomers bearing recognition functionality', *Tetrahedron Letters*, 2000, 41, 10171-10174

Rowan SJ, Lukeman PS, Reynolds D\*, Sanders JKM, 'Engineering diversity into dynamic combinatorial libraries by use of a flexible building block', *New Journal of Chemistry*, 1998, 22, 1015-1018

### **Publications in preparation/review** (\* Undergraduate Student co-author)

Zheng J, Micheel C, Alivisatos AP, Constantinou EP, Lukeman PS, Seeman NC, 'Metallic Nanoparticles Indicate the Robustness of DNA Motifs', *Angewandte Chemie*

Ding L, Liu Y, Sha R, Lukeman PS, Canary JW and Seeman NC, 'Thermodynamic Stability of Nylon-DNA/DNA Duplexes', *ChemBioChem*

### **Patent**

Zhu L, Canary J, Lukeman PS, Seeman NC, 'Nucleic Acid-Nylon Ladder Polymers', #10/855,893, Filed 05/29/03.

### **Selected Invited Presentations**

10/07 Columbia University, NY. Department of Medicine. 'DNA Nano: Self-assembling structures - scaffolding science'

12/05 Vassar College, NY. 'DNA Nanoscience: Tyro's tinkertoy trials triumph'

4/04 New York Academy of Sciences, NY. 'This Festoon of Fiber Redux: Single Stranded DNA with a Covalently Stitched Nylon Lining'