1986 was an eventful year:
- The UN designated it the International Year of Peace.
- Atomic force microscopy was first described.
- The Chernobyl nuclear power plant exploded.
- Argentina beat West Germany in the FIFA World Cup in Mexico City.
- The Mets beat the Red Sox in 7 games in the World Series.
- March 28: The world changed forever with Lady Gaga's birth.
- Herschbach, Lee, and Polanyi won the Nobel Prize in chemistry for studying the dynamics of chemical elementary processes.
- At least three current Baran labbers were born.

- 5505 pages.
- 1344 articles, communications, and notes.

Authors with the most papers:
1. Brown HC (25)
2. Clardy J (11)
3. Faulkner DJ (8)
4. Marshall JA (8)
5. Paquette LA (7)

Important Papers:
1. Trost, 2370. Description of determining the absolute configuration of secondary alcohols using mandelate esters. 652 citations.
2. Sharpless, 1922. Sharpless lets us know that we need molecular sieves if we want our asymmetric epoxidations to actually be catalytic in Ti and tartrate. 418 citations.
Also: Molander introduced a lot of the reactivity of Sml2. 1135, 1778, 2596, 5259.

Best Title Award:
"Total synthesis of a slightly unnatural product. Confirmation of the stereostructure of the archebacterial C40 diol by synthesis of a stereoisomer." Heathcock, 4322.
Year in Review: Journal of Organic Chemistry 1986

**Synthesis of Compactin**

Keck, 2487

1. THPO $\rightarrow$ 3 steps
2. nBuLi, TsCl; PPh$_3$
3. 1. LAH, 2. I$_2$

"vinylallene"

1. MeO
2. TBSCI
3. O$_3$

"vinylallene" $\rightarrow$ 74%

1:1 mix of diastereomers

1. Me
2. aq. HCl
3. Ag$_2$CO$_3$, celite

(+)-compactin

**Selective Peracid Epoxidation**

Rebek, 1649

"Rebek peracid"

Cyclooctenes

$mCPBA$

Towards Ingenol?

Rigby, 3298

1. Me$_2$CuLi; H$_2$O$ightarrow$ 48%
2. NaH, toluene reflux

1. TMSCl, Nal
2. PDC

56%
Convergent Vitamin A Synthesis

1. nBuLi, then EtOCHCH2, H+
2. OEt

95:5 all trans : any cis vitamin A

Diels-Alder Reactions of Heterocyclic Azadienes

1. AcOH
2. MnO2
3. NaOMe

9 steps

Baeyer-Villiger Alternative

1. cat. TsOH
2. H2O2

MeO

83% yield
38°C
cyclohexane

Boger, 3834

Nathan Wilde
Baran Lab GM
May 2013

Year in Review: Journal of Organic Chemistry 1986

Otera, 3834

Boger, 3250

Boger, 5436

Boger, 3250
Minisci Reaction: Polar Effects

Minisci, 476

Explanation: Subsequent H abstraction is faster in H_2O. This might be because of HSAB theory applying to radicals.

Towards Chlorotricholide

"Epimerization of the C-7 center was delayed ... For the sake of convergency, we felt that inversion of this center be completed as early as possible."

Towards Lycorine

Boeckman, 3740
Formal Synthesis of Asperdiol

Marshall, 858

Synthesis of 1,3-Bishomopentaprismane

Marchand, 1897

Pyridone Synthesis

Ogliaruso, 1544

Mechanism

Taylor, 101

Discovered during functionalizations of 2-nitrosopyridine
They had another route that involved a resolution and separation of diastereomers. They commented: "While on an analytic scale resolution was straightforward, preparative HPLC was at best synthetic lunacy."

"MeCu" is premixed MeLi with CuI. No mechanistic explanation is offered.
Lolium Alkaloid Synthesis

"These alkaloids have not yielded to the thrusts of several synthetic attempts, although the skeleton has been assembled."

Phosphonosilylation/Wittig

Chiral Directed Lithiation

One-Pot Diolefination

Tufariello, 3556

Kozikowski, 3400

Gawley, 3076

Minami, 3572
**Deoxygenation**

This reagent was originally used to isomerize olefins through their respective epoxides. Cis-cyclooctene to trans-cyclooctene. Fuchs, JOC 1973, 1178.

**1,2-dehyroisoquinoline Synthesis**

"Furthermore, the possibilities of dihydropyridines as practical reducing agents in organic synthesis seem to be somewhat low because of their poor reactivity and their instability is a disadvantage to their use."

**Polymer-Supported LAH Reduction**

23 citations. Sorensen used it in a synthesis of fumagillol; he called this an "under-utilized method." ACIE 1999, 971.
Towards Ikarugamycin

1. LDA, TMSCl
2. O₂, then DMS
3. MeOH, H⁺

Boeckman, 5486

1. H⁺
2. tBuOK,

(Diagram of chemical synthesis steps leading to Ikarugamycin)