

Meet...

Phil Baran

ORGANIC CHEMIST, *La Jolla, California*



BORN IN

Denville, New Jersey

JOB SITE

Scripps Research Institute

ALTERNATE CAREER

If you told me I can't do organic chemistry, I'd go into the Air Force and try to be an astronaut.

OUTSIDE THE LAB

I spend time with my family, and I go to the gym each day.

FAVORITE TV SHOW

The Sopranos and *Curb Your Enthusiasm*

What He's Doing

To hear Phil Baran talk about his vocation, synthetic chemistry lets you be a scientist, artist, inventor, architect... would-be astronomer?

"Whenever you sit outside and look at the night sky with 10,000 stars and galaxies, that gives you a feeling of wonder, doesn't it?" asks Baran. "It's the same kind of feeling we try to evoke in the work we pursue."

That work is building complex chemical compounds from scratch in the lab. Baran takes biologically active molecules found in trace amounts in nature and figures out how to make them in large quantities, quickly. It's like reconstructing a set of Taj Mahals with Lego® bricks.

When he's done, he hands his molecules over to biologists, who study how they work. The biologists might then circle back to chemists like Baran to try to adapt those molecules into medicines for patients.

"That means we get to focus on the chemistry we love to do, and then when we're done, we let others focus on what they love to do," he says.

Baran loves the challenge of recreating what nature provides. There's a lot of what he calls "innovation space"—room for a chemist to be an inventor. Ingenuity and patience are must-haves, since it often takes 20 or 30 iterations and three to five years to go from an initial blueprint to the final compound.

It's a process that has led to many small-molecule drugs on the market. No wonder Baran says chemists who train in labs like his help improve human health.

"Organic synthesis allows you to be an artist and a scientist at the same time"

His Findings

Baran led a team that earned global accolades by reconstructing palau'amine, a molecule found in Pacific Ocean sponges that has an incredibly complicated and delicate structure. Along the way, the team invented a method to precisely attach hydroxyl groups to molecules. Now he's looking into how to make a lot of palau'amine. It will, to his delight, require yet more invention.

"There's so much to discover and to learn in organic synthesis," says Baran. "The only thing that saddens me greatly is that the time on Earth is limited. There's not enough time to solve all the problems you want to solve."

Meet more interesting chemists at <http://www.nigms.nih.gov/ChemHealthWeb>.