# Noesis

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EDITORIAL

Ronald K. Hoeflin
P. O. Box 7430
New York, NY 10116

New Member: Keith Raniere has recently qualified for membership in the Titan and Mega Societies. His address is 3 Flintlock Lane, Clifton Park, NY 12065, and his phone number is (518) 371-4279. His letter accepting membership reads as follows:

Dear Mr. Hoeflin,

I was very pleased o receive your letter and would enjoy being a member of both the Titan and the Mega societies. . . .

I am anxious to know more of the societies, their history, and their members (past and present). I would also welcome the opportunity to meet with you to learn how I might further participate in the societies. I am frequently in NYC.

Here is a biographical sketch:

--Born in Brooklyn, NY 8/26/60

--Raised in Suffern, NY (a suburb of Manhattan)

--Eastern Coast Judo Champion, 1972

--Ski instructor, 1974

--Play 7 musical instruments; I am an opera tenor

--Founder of Life Learning Institute (current)

--Cofounder of Investment Services International (current)
(Earned 180%/year interest on invested monies, 1982-1987)

--Currently a Director of Computer Education for New York State

--First triple major to graduate from Rensselaer Polytechnic Institute (degrees in mathematics, physics, biology; minor in philosophy, psychology)

If there is any other information that you consider standard to a Titan/Mega biography (intellectual milestones, etc.), please contact me. I look forward to hearing from you. Keith Raniere

/Editor's note: I did meet in late December here in Manhattan./

Article from "Los Angeles Magazine": I received an article in early January from Los Angeles Magazine titled "Brains," concerning four high scorers on my Mega Test who reside in the Los Angeles area, including Titan Society member Chris Cole.

Puzzles: On the last page of this issue are three cryptograms submitted by Chris Cole. A solution to the first puzzle is given at the bottom of the page (p. 12).

# Brains

## They're the smartest people in L.A., the top 1 percent, with IQs of at least 164—so why aren't they rich and glamorous?

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## BY CATHERINE SEIPP

They don't live on the Westside, they aren't multimillionaires, and they don't live particularly glamorous lives. But they do have IQs of at least 164 and are way beyond Mensa, the well-known high-IQ group limited to the top 2 percent of the population that scores higher than 132 on a Stanford-Binet intelligence test.

There are several high-IQ groups more exclusive than Mensa. Intertel is limited to one in 100 people and requires an IQ of at least 136; the Triple Nine Society to one in 1,000, or those with an IQ of at least 148; and the International Society for Philosophical Enquiry to one in 2,500, or those with IQs of 150 or above. Then there's a big jump to the ultra-high-IQ groups. The Prometheus Society is limited to one in 30,000 people (164 and above), the Titan Society to one in 100,000 (173 and above) and the Mega Society to one in a million (176 and above). These organizations aren't very large: The Prometheus Society has just over 50 members, the Mega Society a couple of dozen and the Titan Society, which is just getting started, only 14. Mensa, on the other hand, has 75,000 members.

Estimated IQs are just that, estimates, since scores often change from test to test. Standard intelligence tests like the Stanford-Binet or the Wechsler are better at detecting differences at the low end of the scale than at the high end.

However, a couple of years ago, Ronald Hoeflin, a New York ex-librarian with a serious interest in psychometrics, devised the Mega test, which the *Guinness Book of World Records* calls the hardest IQ test in the world. It's untimed and unsupervised and encourages the use of reference aids. The extremely gifted are distinguished from the merely bright, Hoeflin reasons, in that they have the patience and concentration to work on a problem over a long period of time.

Because the Mega test is so grueling, a high IQ on it may be harder to achieve than a high IQ measured by a standard test. So in finding four examples of the smartest people in Los Angeles, we used two criteria: They had to be eligible for the Prometheus, Titan or Mega societies; and they had to be eligible by virtue of their high Mega test scores.

## SOLOMON W. GOLOMB

Golomb, vice provost for research and professor of mathematics and electrical engineering at USC, solved his first puzzle when he was in the fifth grade. "I intercepted a note a girl to the right of me was passing to the girl to the left of me and decoded it in about 20 minutes. I was surprised at how easy it was." Golomb still remembers the schoolgirlish message: "Since when is Sidney so interesting?"

He's been a puzzle wizard ever since. Golomb, 54, has found serious mathematical applications for everything from explaining the genetic code to developing space communications. Some of his research, in fact, was adapted by NASA to track deep-space vehicles. But laymen know him better as a leader in the brain-breaking world of recreational mathematics. Golomb's Penominoes, a geometric tile game, has been delighting puzzle fans for 20 years; it was featured in the recent *Puzzles Old and New* exhibition at the Craft and Folk Art Museum, now on a yearlong tour of North America.

Hardly the stereotype of the maladjusted brainy loner, Golomb, who lives in La Cañada, has been married for 30 years and has two daughters. His intelligence is quick, piercing and competitive. At a mathematics conference he attended a few months ago, a lecturer announced that the solution to a certain mechanical puzzle would take 4 million moves. "If I did one move per second," the lecturer said, "it would take five years." Golomb immediately spoke up from the audience. "Four million seconds," he quickly calculated, "is only 46 days." He does this sort of thing a lot. In school, classmates nicknamed him "Einstein" for instantly figuring out in biology class that 24 pairs of

human chromosomes mean there are 16,777,216 possible egg or sperm cells. "It's obvious," he explained to his astounded teacher.

If Golomb's classmates considered him odd, he didn't know it. But then, he comes from a family in which brilliance was taken for granted. Golomb's father was a rabbi and mathematics professor; his mother did graduate work at Johns Hopkins University; and his older sister, now a university professor in Israel, graduated from high school at age 15. Golomb was born and raised in Baltimore, studied at Johns Hopkins and Harvard and came to Southern California in the '50s to work at the Jet Propulsion Laboratory.

Although he was the first person who scored high enough to qualify for Mega, Golomb winces at the thought of joining a high-IQ group. "I think doing well on IQ tests doesn't mean much more than the ability to do well on IQ tests," he says.

## CHRIS COLE

Cole, 33, has an IQ of 173, according to the Mega test, which means that if you put him in a random group of 100,000 people, he'd be the smartest. He's also handsome and successful. *And* he played football at Sunny Hills High School in Fullerton. Who says life is fair?

A successful entrepreneur by the age of 25, he started two high-tech companies while doing graduate work in theoretical physics at Caltech. One business merged with a corporation that's now one of the top-four artificial-intelligence companies in the world. Cole remains president of the other, the Irvine-based software firm Peregrine Systems.

He joined the 14-member Titan Society because its entrance requirements measure the sort of intelligence he respects: the ability to dissect a problem over a long period of time. "It's like a graduate seminar at Caltech," he says, "but if anyone at Caltech knew I was a member of the Titan Society they'd probably run a hundred miles in the other direction." Why? Because Caltech professors are constantly badgered by eccentric members of Mensa or other high-IQ groups who think they've disproved the theory of relativity or finally created a perpetual-motion machine.

These hapless folks are referred to as CPs when they're within earshot, crackpots when they're not. "They're always whining about average people not understanding them, which is strange, because you'd think if they have that much intelligence they could make themselves understood.

"The human brain is not very well engineered," he also says. "There's a tremendous amount of redundancy, of pure silliness, that no engineer would ever do.

For example, most people think that DNA is crammed with information. But most of DNA is just noise, white space on the page. There are plants that have more information in their DNA than humans."

The son of an engineer, Cole was born and raised in Southern California, lives in Corona del Mar and married his college sweetheart. He's such a big fan of Disneyland that as a teenager he worked there as a busboy, and he went to see the new Star Tours ride as soon as it opened. "George Lucas . . . you want to talk about genius, he's a genius," Cole says eagerly. "I think he's brought back some of what Walt had. I was very worried about Disneyland after Walt died."

But other than Disneyland, the Star Wars trilogy and "typical TV shows like *Cheers* and *Nova*," Cole's mind tends to move in abstract directions. "I guess I gave up at a very early age relying on the outside world as a source of stimulation," he says simply. He usually expects to be bored, for instance, by social small talk.

"I always assumed that's how everyone was."

## SANDRA BRUESCH

Bruesch, a math teacher at Whitney High School in Cerritos, is an avid member of every high-IQ group she's qualified for over the years, including the Prometheus Society, which is limited to people with IQs of at least 164. Her pride in this is understandable when you consider the obstacles she's overcome.

"I really come from a poverty-stricken background," says Bruesch, who was born in Milwaukee but spent her childhood moving around the country with her family. "I basically didn't go to school till the fifth grade. I got six weeks in the fourth grade; that was the longest. When I was in high school, I had atrocious grammar, but I had several teachers working on me in tandem. To me, school was a treat. It beat the heck out of picking cotton."

Bruesch did indeed pick cotton as a child in the San Joaquin Valley, helping her mother, an orphan with an eighth-grade education, and her stepfather, who eventually found work as a machinist. Once the family settled in Southern California, Bruesch spent her afternoons and weekends baby-sitting her younger brother and sister so her parents could work the swing shift. Since Bruesch's parents were grateful to be working, it was hard for them to understand their daughter's passion for learning. "Sometimes it was very difficult," Bruesch recalls. "My mother just always wanted me to have a job." An important influence was her German teacher, who introduced her to Beethoven concerts and other cultural events. Bruesch went to high school in Covina and La Puente and graduated from Whittier College with a degree in German and mathematics;

her master's thesis from Claremont was based on the untranslated work of German mathematicians.

At 43, Bruesch is the sort of cheerful, jolly-hockey-sticks woman who can face an entire room of adolescents and make them believe that yes, *math is fun.* Since arriving at Whitney eight years ago, where she's chairperson of the math department, she's started 12 new courses, giving this magnet school a reputation for excellence in math and science. She's also a "mentor teacher" in a UC Irvine program and participated in the NASA Teacher in Space Program.

Now divorced, Bruesch sometimes goes to Mensa meetings, but more often she finds herself spending spare evenings grading papers or writing letters of recommendation for college-bound students. "I don't know how to describe myself," she says softly. "When I was 14 I decided to be a math teacher. It seemed that was something smart people did. I have always wanted to be a bright person. And there's something to be said for that."

## H. HERBERT TAYLOR

"Let's get one thing straight," says Taylor, a research professor at USC specializing in coded communications and combinatorial geometry. "I'm kind of slow-witted." He's not joking.

Taylor, 59, got the highest score on the Mega test, giving him an IQ of 177. Yet he has an almost painfully laconic, Gary Cooper–like manner about him. His years in school were a struggle with bad grades. He got his PhD just six years ago, under the encouragement of Solomon Golomb, whom he'd known since the '60s at the Jet Propulsion Laboratory.

"I flunked psychology," Taylor recalls. "I just couldn't get it. I went in for literature, and I tried to read Plato. But that's just an experience in sleeping while you're awake, as far as I'm concerned."

Taylor has a rare kind of intelligence: the ability to remain absorbed in a problem long after most people have given up in frustration or simply become bored. He slogged away at the Mega test, for instance, for three months. But this quality can also cause problems in his day-to-day life.

Tall and slightly stooped, with an open, boyish face, Taylor concentrates so intensely on the subject at hand that distractions are simply tuned out. At lunch, he suddenly looks up in surprise and asks, "Where's my beef?" 20 minutes after he'd allowed the waiter to take it away. He'd been busy demonstrating his collection of rattle backs, small oblong tops that mysteriously "rattle back" to spin in the opposite direction. "Of course the real question is, What would it do on a frictionless surface?"

As a young man, he became completely absorbed in go, a Japanese game based on mathematic principles, and he became one of the three best non-Oriental players in the world. But his career and personal life suffered, and he gave it up in the '60s.

"I never thought I was clever or smart," says Taylor, who grew up in Massachusetts. "In fact, I went into playing go because I used to get teased about being so dumb." He remains influenced by what his mentor at Berkeley, a mathematics professor specializing in topology, thought of IQ tests.

"Intelligence is a substance," he says."We all have the same amount. But it comes in different shapes in different people. Some people have a sphere. That's nice. Some might have a pancake shape, or long and narrow. Or like a bush—all branched out. Now, when you take an IQ test, all you get is a two-dimensional cross section of something that's really three dimensional."

Taylor, who lives in South Pasadena, seems a contented man. He's a proud grandfather, and his second marriage has lasted 25 years. His interests are varied and unusual. "Since 1958, I've been involved with something called Subud," he says. "It's not a religion, but it has the same objective as a religion. After I'd been in it a year and a half, I had a dream that made me realize I needed a different name." So he changed his name to Herbert, from Scott. His first initial stands for a Moslem name; Taylor converted to Islam in the early '70s.

During the Rubik's Cube mania a few years ago, he coauthored a book on the game and coached a young Vietnamese refugee, Minh Tai, to a Rubik's Cube world championship in 1980. (To prepare Minh Tai for competing in front of a crowd, Taylor made him practice unscrambling the cube in shopping malls.) ■

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# THREE CRYPTOGRAMS

Chris Cole
P. O. Box 9545
Newport Beach, CA 92658

When I was a graduate student at Caltech, Professor Feynman showed me three samples of code that he had been challenged with by a fellow scientist at Los Alamos and which he had not been able to crack. I also was unable to crack them. I now post them for the Society to give it a try.

1. Easier

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MEOTAIHSIBRTEWDGLGKNLANEA
INOEEPEYSTNPEUODEHRONLTIR
OSOHEOTNPHGAAETOHSZOTTENT
KEPADLYPHEODOWCFORRRNLCUE
EEEOPGMRLHNNDFTOENEALKEHH
EATTHNMESCNSHIRAETDAHLHEM
TETRFSWEDOEOENEGFHETAEDGH
RLNNGOAAEOCMTURRSLTDIDORE
HNHEHNAYVTIERHEENECTRNVIO
UOEHOTRNWSAYIFSNSHOEMRTRR
EUAUUHOHOOHCDCHTEEISEVRLS
KLIHIIAPCHRHSIHPSNWTOIISI
SHHNWEMTIEYAFELNRENLEERYI
PHBEROTEVPHNTYATIERTIHEEA
WTWVHTASETHHSDNGEIEAYNHHH
NNHTW
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2. Harder

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XUKEXWSLZJUAXUNKIGWFSOZRAWURO
RKXAOSLHROBXBTKCMUWDVPTFBLMKE
FVWMUXTVTWUIDDJVZKBRMCWOIWYDX
MLUFPVSHAGSVWUFWORCWUIDUJCNVT
TBERTUNOJUZHVTWKORSVRZSVVFSQX
OCMUWPYTRLGBMCYPOJCLRIYTVFCCM
UWUFPOXCNMCIWMSKPXEDLYIQKDJWI
WCJUMVRCJUMVRKXWURKPSEEIWZVXU
LEIOETOOFWKBIUXPXUGOWLFPWUSCH
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3. New Message

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WURVFXGJYTHEIZXSQXOBGSV
RUDOOJXATBKTARVIXPYTMYA
BMVUFXPXKUJVPLSOVTGNGOS
IGLWURPKFCVGELLRNNGLPYT
FVTPXAJOSCWRODORWNWSICL
FKEMOTGJYCRRAOJVNTODVMN
SQIVICRBICRUDCSKXYPDMDR
OJUZICRVFWXIFPXIVVIEPYT
DOIAVRBOOXWRAKPSZXTZKVR
OSWCRCFVEESOLWKTOBXAUXV
B
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I posted this puzzle to the USENET special interest group called "sci.crypt". Jack C. Morrison of JPL solved the first cipher. It's a pretty standard transposition: split the text into 5-column pieces, then read from lower right upward. What results are the opening lines of Chaucer's Canterbury Tales in Middle English.