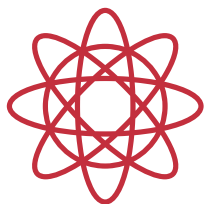


FOCUSING THE LENS:

SCIENCE FACULTY AT CHC



CHC FACULTY ARE COMMITTED TO NEW WAYS OF THINKING, HIGH QUALITY RESEARCH, AND ACADEMIC EXCELLENCE. THEIR STORIES OF HOPE, SCIENTIFIC PROGRESS, AND POSITIVE STUDENT OUTCOMES ARE BROUGHT TO LIFE ON THE FOLLOWING PAGES.



DR. KENNETH SOPRANO

MAKING A DIFFERENCE AT MORE THAN JUST THE MOLECULAR LEVEL



It may have taken Dr. Kenneth J. Soprano 40 years to realize his vision of teaching at a small liberal arts college, much like the one he attended as an undergrad, but that doesn't make his achievement any less rewarding. If anything, being able to bring decades of world-class

research and teaching experience with him to help students at CHC achieve their goals makes it even sweeter.

"I went to a small, Jesuit, liberal arts college in Massachusetts," said Dr. Soprano, "and I wanted to teach biology at a college like Holy Cross. But sometimes you find yourself taking a different path."

NOW THAT HE IS AT CHC, STUDENTS ARE REAPING THE BENEFITS.

Dr. Soprano's different path emerged in the process of choosing a postdoctoral fellowship. "I happened to go to a meeting and heard a talk about tumor viruses given by a scientist who was one of the top cancer researchers in the world. I took a chance and wrote him and, much to my amazement, he invited me for an interview."

Dr. Soprano got the job as a postdoc in the Fels Research Institute and Department of Pathology at Temple University School of Medicine under the direction of Renato Baserga, M.D., and the rest, as they say, is history.

"I was in one of the top tumor virology and cancer labs in the world. The stature of a place like that completely changes your career track. I wound up doing state-of-the-art research and eventually was offered a faculty position at a medical school."

For 30 years, Dr. Soprano conducted NIH-funded research and taught medical and graduate students at Temple Medical School, eventually serving as Acting Provost for Research and then Vice President for Research and Graduate Studies at Temple University. When a change in university administration signaled a move

away from a research orientation, Dr. Soprano decided to look elsewhere for provost-level positions, and wound up at Chestnut Hill College as Vice President of Academic Affairs and Dean of Faculty, a position he held until 2012.

"Now I'm the biology professor at a small, liberal arts college as I originally planned. It just took me 40 years to get there!"

Now that he is at CHC, students are reaping the benefits. His wife, Dianne Soprano, Ph.D., is Associate Dean for Graduate Studies and the M.D./Ph.D. Program at Temple Medical School, and those connections, along with the College's long-standing relationship with Fox Chase Cancer Center (FCCC), a National Cancer Institute-designated Comprehensive Cancer Center research facility and hospital, serve the College's science majors extraordinarily well.

"We do a 400-level cancer therapeutics course with Fox Chase postdocs coming in to teach a few lectures. Our students pick a cancer they want to study and they research it, write about the nature of the cancer, who gets it and how they are currently treated. Their task is to use the information presented in lecture about the latest therapeutics to design possible new, more effective treatments for this cancer. They present their ideas to the class and the Fox Chase scientists in a final presentation and paper.

"They're amazed by the postdocs who come in and lecture to them about the research they are doing at Fox Chase. Our students realize that these postdocs are not that much older than they are, so these postdocs act as role models. They show our students what they could do."

Dr. Soprano also runs the Senior Seminars for science majors. The diversity of what the students can investigate is what he sees as one of the great advantages. "This is the capstone course for the major and it is research based," he said. "Some students report on actual bench research, often done at the College. A few biology majors go to FCCC for a summer internship and, in some cases, will stay on there and continue to do research during the academic year. Others work with Dr. Bob Meyer who runs a summer internship program where he mentors environmental science majors doing ecological research at the storm water basin in Whitmarsh Township.

“Some of our students are able to secure NSF-REUs, Research Experiences for Undergraduates, which provide funding not just for research, but also a stipend and travel expenses. We’ve been very successful in getting some of our students accepted at research laboratories across the country. We also have literature-based studies, often focusing on topics of personal interest to our students. For example, some of our student-athletes may be interested in researching the scientific literature on strength conditioning dietary supplements. Another student may be interested in looking at cholesterol levels in arteriosclerosis because someone in their family has heart disease. I think it is important that students have many options available, but this means that I really do need to be a ‘jack of all trades’ while guiding and mentoring them.”

Students in Senior Seminar have 15 weeks to complete their research, put together a scientific poster and participate in the College-wide Senior Seminar presentation day, give a formal presentation to the department, and write a journal-type article about their work. “These are the ways scientists communicate with other scientists,” said Dr. Soprano, “and our students have to learn all three. Communication is critical. Modern science is very collaborative. They have to be able to write about their work and report on it.

“They have to work hard,” said Dr. Soprano. “Senior Seminar is not as structured as standard courses, so it takes a lot of motivation and self-discipline. But this is what prepares them for the next stage in their career where they won’t have their hands held, and they carry this experience with them. It goes on their CV, and talking about their research will always be an interesting topic of discussion during their interviews.”


In 2020, in addition to the time and energy he devoted to his students, Dr. Soprano served as chair of the Health and Safety subcommittee for the college’s COVID-19 Task Force. As he put it dryly, “It was a busy summer.”

The challenge, according to Dr. Soprano, was that “this virus violates every rule, and it’s mind-boggling when you think about it. My role was to evaluate some of the studies reported in the press. I would find the original journal articles, read them and make a critical judgement—is it anecdotal or is it scientifically valid? I was joined by a number of other members of the college

community including a nurse practitioner who is head of the College’s health service, who has a great deal of hands-on experience. We also had a member of the Board who is a physician working with us. We had a good team of people.”

Having a good team of accomplished scientists with vast experience working collaboratively for the benefit of the students is one of the hallmarks of Chestnut Hill College’s science programs. As Dr. Soprano noted, “Our students have regular access to their professors here in a way that just doesn’t happen at larger institutions. The personal follow-up, the individualized attention, the fact that we can provide our students with real hands-on research experiences means they are absolutely better prepared when they move on to jobs, professional school or graduate school. We are proud that they succeed when they get to a Vanderbilt or a Yale or a Penn, all places where we have placed our students.

“The vast majority of courses at big universities by necessity are taught by TAs, who frequently learn the lecture material at the same time as the students. In contrast, when I’m teaching molecular biology, I’m coming from the perspective of someone who was in on the ground floor of recombinant DNA research. I can talk about all those methodologies from first-hand experience, some of the frustrations that were encountered in developing them, and talk about safety in terms of cloning. Our science faculty bring so much outside experience to the classroom and lab, and not many small college science professors have that kind of pedigree.”

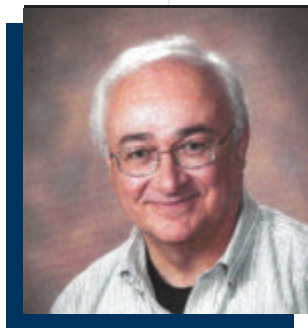
Dr. Soprano has another kind of lived experience that can benefit his students even beyond academics. “I was a first-generation college student,” he said, “and a high percentage of CHC students are first-generation. There were things my parents didn’t know and thus couldn’t help me, so I get it. Fortunately, there are so many ‘checks and balances’ here for students no matter what their background. There’s no question that we’re successful in providing the kind of support our students need. I love watching them grow and mature as scientists over the course of their time here. Many of them just need encouragement. They need to build their self-confidence, and they need to be told that they can do this. And once they believe that, anything is possible.” 





PASSING THE TORCH

FROM ONE NATURALIST TO THE NEXT



As the newly appointed head “naturalist,” on campus, Hilton Oyamaguchi, Ph.D., will lead the Environmental Sciences department in the wake of Robert Meyer, Ph.D.’s retirement. After an accomplished 38 years at Chestnut Hill College, Dr. Meyer has praised Dr. Oyamaguchi’s innovative spirit as an important asset in carrying the Environmental Sciences torch through the next decade and beyond.

“I’m a good data collector, [but] Hilton is a great collator and analyst,” says Dr. Meyer of his successor. “He’s really skilled at building a story out of the raw material and that’s one of the reasons I’m so glad Hilton is following me.”

This is high praise coming from Dr. Meyer who has been at the top of his field for more than three decades and whose legacy includes the massive amount of data he and his students have collected from the Whitemarsh Township stormwater basin over the years.

Dr. Meyer continues, “There are so many new resources available now, and Hilton is familiar with and fluent in working with the databases that are part of the global information system. I still reach for a book before a computer, but students respond to technology. Hilton has brought not only new ideas but the ability to navigate the latest advances, and that is a tremendous asset and advantage for our students.”

One of the freshest ideas Dr. Oyamaguchi has introduced to students is iNaturalist, a joint initiative of the California Academy of Sciences and the National Geographic Society. Findings by users of the app are shared with scientific data repositories such as the Global Biodiversity Information Facility to help scientists find and use the data.

“iNaturalist is social media for nerds,” says Dr. Oyamaguchi. “It’s a new and improved way for students, citizen scientists,

and professional academics to explore nature and identify species. I was bringing the guide book with me into the field and students were taking pictures of what they were finding, so I thought, let’s catch up. iNaturalist is a great way to use technology and for students to feel connected to the global scientific community.”

“OUR STUDENTS KNOW THAT OTHER PEOPLE AROUND THE WORLD ARE LOOKING AT THAT PICTURE. IT’S AN INTERESTING AND COLLABORATIVE WAY TO ADD TO SCIENTIFIC KNOWLEDGE.”

With the iNaturalist app, students can see others collecting data, and when they have completed their own remote lab, they see their dots appear on the iNaturalist map. “That’s really important for them and it helps them to be engaged,” says Dr. Oyamaguchi. “Our students know that other people around the world are looking at that picture. It’s an interesting and collaborative way to add to scientific knowledge.”

As wonderful as the technological advances are, however, both professors acknowledge that the challenge is still to encourage their students to develop as active learners. “We have to adjust the education to this generation,” says Dr. Oyamaguchi. “They may be able to find any information at all online, but they still have to learn how to filter it. We have to teach them how to use technology as critical thinkers and learners.”

A teaching principle often used by Dr. Meyer that will continue under Dr. Oyamaguchi’s leadership is giving students the chance to learn from mistakes and adapting methodologies to help them master content. Oyamaguchi explains further, “with the online mode we’ve had to adapt because of the pandemic, especially with certain virtual labs, students can make several attempts and repeating the lab multiple times is fine. I’m new to being an educator, but I know that this generation is different because the world is different. Things are changing really fast and you have to adjust to that.”

Another Dr. Meyer tradition that Dr. Oyamaguchi will continue is sending students to the Schuylkill Watershed

Congress held every spring in Montgomery County. It attracts a wide variety of groups from grassroots environmentalists to academics to representatives from the Environmental Protection Agency and Pennsylvania's Department of Environmental Protection. It's an invaluable learning experience and the College's students get to present their research there.

"What's really cool," says Dr. Oyamaguchi, "is what we have right in our backyard here at CHC. I grew up in Brazil and went camping in the rainforests, but right here, we have Valley Forge National Park, the watershed basin, fossil hunting—all these amazing natural resources are available to us, and I love getting to share my passion for nature with our students."

"It's tremendously rewarding," Dr. Meyer adds. "It's written right into the mission of CHC, Care for the Earth, and that's what we're educating our students to do, and

we're giving them the tools to do it. It's amazing when that happens, and that's when I feel as though I've accomplished something really special. That's my idea of a truly lasting legacy."

"IT'S WRITTEN RIGHT INTO THE MISSION OF CHC, CARE FOR THE EARTH, AND THAT'S WHAT WE'RE EDUCATING OUR STUDENTS TO DO, AND WE'RE GIVING THEM THE TOOLS TO DO IT."

Thank you, Dr. Meyer, for leaving us with your lasting legacy. And Dr. Oyamaguchi, we look forward with excitement as your leadership continues to make its mark in the coming years! 🍷



FROM IMMUNOLOGY TO PROFESSORSHIP

THE IMPORTANCE OF RESEARCH AND FINDING YOUR PATH



For Dr. Joseph Kulkosky, Chair of the Biology Department, and Dr. Hannah Venit, Assistant Professor of Biology, it's all about the students—engaging them, supporting them, and positioning them for success, which in the science world usually means landing an internship in a research lab.

"Having real-world experience working in a research lab helps students discover if that's what they really want to do," explains Dr. Venit. "A research lab is very different from a classroom lab, and students see first-hand how science gets done and how it fits into a big picture. You don't know what you're in for until you get to do it, and internships pave the way for getting students into grad school." explains Dr. Venit. Both Dr. Kulkosky and Dr. Venit are familiar with this trajectory, as they both came to Chestnut Hill College with deep research backgrounds. Their work in labs is what helped open the door to their true callings, although the path was not always clear for either professor.

Dr. Kulkosky's passion for science didn't fully ignite until he was conducting research as a graduate student at the University of Pittsburgh under the mentorship of Dr. Mary Edmonds, esteemed for her fundamental studies on the structure of RNA, and a member of the prestigious National Academy of Sciences. Dr. Kulkosky eventually wound up involved in pioneering AIDS research after reading an article in the magazine *Science* when details of an unusual, lethal immunodeficiency syndrome were first emerging. It was a defining moment that would steer him to fascinating work at Cornell Medical School, Fox Chase Cancer Center, and Thomas Jefferson University.

"It was that article that led me into a series of incredible research opportunities that were so exciting and engaging," recounts Dr. Kulkosky. "All the scientists in the arena of AIDS research, whose work I knew well and often competed with, have re-emerged today during this pandemic—Anthony Fauci, Bill Haseltine, and a host of other infectious disease specialists appear regularly."

"HAVING REAL-WORLD EXPERIENCE WORKING IN A RESEARCH LAB HELPS STUDENTS DISCOVER IF THAT'S WHAT THEY REALLY WANT TO DO."

Dr. Kulkosky also finds it ironic that the same questions that arose at the beginning of the AIDS pandemic are being asked again today about COVID-19: Is this a government conspiracy? Is it targeted to subsets of society? How long does the virus persist on surfaces? Are we being told the truth?

He explains further, “It’s just amazing to be reliving a dynamic I thought I left far behind after savvy researchers developed amazing therapeutics to blunt HIV infection. I expect the same will happen with this pandemic, scientists will just keep doing their usual great work. This time, I hope the scientists get the honor they deserve when they discover the resolution to this pandemic. And that resolution will not come from any other segment of society than the scientists!

“Investigative research has always been thrilling, and, in some ways, my later-in-life love affair with science is a useful example for our students, a testimonial that sometimes a passion comes later and particularly with direct experience.”

Dr. Venit’s research experience focused on immunology, having worked as a Ph.D. candidate at the University of Pennsylvania on bacterial pathogenesis, and then as a research immunologist with Medical Diagnostic Laboratories. She had always been interested in a science-related career, even as a child. “When I was five, I either wanted to be a dentist like my father or a nurse like my grandmother.” A few years later when all things fish captured her attention, she decided she wanted to become a marine biologist (spoiler: she didn’t).

She did, however, earn a B.A. in biology at Boston University and then a Ph.D. in microbiology from the University of Pennsylvania. “I came to teaching at CHC by a circuitous route,” says the mother of two, who refers to herself jokingly as a “professional scientist and amateur carpool driver.”

After leaving her research position for a maternity leave that lasted longer than originally planned, Dr. Venit eventually found herself teaching nursing students at Penn State and traditional undergrads at St. Joseph’s University as an adjunct.

“After doing that for a while, I began to feel ready to commit to a full-time position, and Chestnut Hill College seemed like the right place,” she explains. “I came to interview and it felt so welcoming and flexible, and the mission of the College aligned with my views.”

The legacy of research by both professors has deeply impacted their students who themselves have investigated multiple topics in a variety of research labs at Fox Chase Cancer Center, including the effect of interferon on viral infectivity, nuclear proteins that modulate gene expression, neuronal cell deficits induced by measles, and the identification of genes linked with breast cancer. “Our students have been co-authors on research papers published in high-profile peer-reviewed journals,” says Dr. Kulkosky, “especially under the guidance of Dr. Richard Katz, who has been an exceptional mentor to our students.”

Dr. Kulkosky continues, “Students always comment that their internships bring to life what they’ve learned in the classroom. Hands-on experience with sophisticated laboratory equipment or personal contact with patients demonstrates the value of a real-time experience and makes a definite connection with their textbook learning. “The credential of conducting novel research and publishing their work has led to student acceptances into a number of prestigious graduate schools including Yale, University of Pennsylvania, Temple University and Vanderbilt, to name just a few.”

Their students have also co-authored scientific papers, appearing in such publications as the *Journal of Virology*, the *Journal of Cell Science*, and *EBioMedicine*, a leading open-access journal published by *The Lancet*. Among them are Kelsey Haugh ’14 who entered the doctoral Biomedical Sciences Program at Yale University; Kelly Dunlevy ’15, currently employed at Red Nucleus, who completed her M.S. degree in Molecular Epigenetics at the University of Pennsylvania; and Jason Wasserman ’16 and Margaret Baldini ’20, both of whom were accepted to the Ph.D. program for Biomedical Sciences at the Lewis Katz School of Medicine at Temple University.

Chestnut Hill College students have also been able to independently secure internship opportunities with health care providers such as Aria Health, Einstein Medical Center and Chestnut Hill Hospital, as well as with small private practices. Students in the forensic science programs have interned at the Center for Forensic Education and Research in Willow Grove, as well as with the Coroner’s offices in Montgomery County and Philadelphia. Students have found opportunities with service companies, such as Visiting

Angels and as medical scribes, and some have even found internships at the Philadelphia Zoo and the Adventure Aquarium in Camden.

Both Dr. Kulkosky and Dr. Venit agree that CHC is unique in its ability to nurture students in a way and to a degree that isn't usually possible at larger institutions. "The size of the College is advantageous to our students who need more personalized attention," says Dr. Venit. "My class sizes allow me to get to know all of my students, to be able to recognize them in the hallway. And it lets them feel comfortable enough to reach out to me when they need some guidance."

"Our faculty truly are compassionate toward our students," emphasizes Dr. Kulkosky, "and we want them to succeed. We want to provide an environment that nurtures their learning while we remain sensitive to some of the life circumstances that can distract our students from their studies.

"It certainly helps if we can earn their trust, so they feel free to confide in us. It is always a blessing to see students enter as freshmen and witness their transformation into mature individuals who take their studies seriously, and are committed to achieving a concrete goal in life." 🦋



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DR. LAKSHMI ATCHISON ON MAKING SCIENCE DEEPLY HUMAN

Dr. Lakshmi Atchison is known for her passionate devotion to the College community and for embracing—in heart, mind and soul—the idea that true teaching can’t be confined to the four walls of a classroom.

In the winter of 1994, Chestnut Hill College, along with the rest of Philadelphia, experienced a severe northeaster that hammered the East Coast, immobilizing millions of people from North Carolina to Maine.

Dr. Atchison was asleep in one of the College’s dorm rooms at the time.

It was the night before the first-ever lecture in her now famous Biomedical Distinguished Lecture Series was to take place and Dr. Atchison’s commitment ran so deep that she was unwilling to leave campus for fear she might not be able to make her way back through the snow.

“From the beginning, the series was about showing students, firsthand, what they can become – from highly acclaimed professionals to Nobel Laureates,” says Dr. Atchison. “Beyond bringing speakers in to share their expertise, I wanted to humanize these people for our students—to make them real, accessible role models.”

When Dr. Atchison joined the faculty of Chestnut Hill College, just two years prior to launching her lecture series, the move into teaching had been an unexpected one for the young research scientist. For years, she’d been deeply entrenched in the world of human genome research (she holds a Ph.D. in cellular biology), but, sparked by the deep disappointment of a lost federal research grant,

Dr. Atchison was struck by a surprising and sudden awareness. “I feel that God spoke to me on this day and said, ‘Lakshmi, you have a hidden talent for teaching; you should go for it.’” In a move that today seems perfectly characteristic of her inventive, entrepreneurial spirit, Dr. Atchison picked up a phone book (this was 1992, after all), looked up every college and university within a 50-mile radius and was ultimately offered teaching positions at three of them.

**“BEYOND BRINGING SPEAKERS
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MAKE THEM REAL, ACCESSIBLE
ROLE MODELS.”**

“When I interviewed at Chestnut Hill College, I fell in love with the place instantly,” says Dr. Atchison. “Here there was a felt sense of peace, love and harmony – and I decided to devote myself to the College entirely. This was where I belonged, and I made it known that I was ready and willing to teach any subject.”

Nearly 28 years later, Chestnut Hill College, her second home as she calls it, is still where Dr. Atchison belongs. Teaching was in her blood, “more rewarding than any federal grant ever could be,” and over the decades, she has been an unstoppable force on campus – teaching, publishing, inventing and running her lecture series with



STUDENTS HAVE THE OPPORTUNITY TO SIT AND PERSONALLY SPEAK WITH LECTURERS—AN OPPORTUNITY FOR UNDERGRADUATES, GIVEN THE CALIBER OF THESE SPEAKERS, THAT IS UNIQUE IN THE NATION.

what has become a hallmark brand of vigor and passion. She credits accepting a position at the College with setting in motion a series of events that revealed her true vocation and invited her to embrace her most authentic self.

Over the years, driven by a determination to help students to find their calling as she has found hers, Dr. Atchison has been both unique and extraordinary in her approach. She has imbued her classroom with an out-of-the-box ethos that manifests itself most tangibly in the three-dimensional models she's designed and invented (for which she has received a U.S. patent!) to assist her students in grasping concepts related to blood cells and leukemia, the layers of the skin and, most recently, osteoporosis. Her visual blood cell model, which was patented in 2012 at the urging of her students, is now used by professors at many colleges and universities throughout the nation.

Dr. Atchison has written numerous textbooks on cancer, including *Cancer Biology Basics*, *Cell Biology with Cancer laboratory Application*. In partnership with her husband, Dr. Michael L. Atchison (professor of Biochemistry, and director of the VMD-PhD program at the University of Pennsylvania) she authored *Cancers That Affect High School & College Age Students. Prevention is Now! An Instant Education Guide*. Always driven to make learning more accessible to her students, Dr. Atchison and has received the Lindback Award for Distinguished teaching (2009), among many other honors.

Beyond the accolades, however, is what she considers to be a much more poignant tribute—namely, that her students perceive the sincerity of her devotion to their learning and advancement. “Each year, students laugh at this at first, but I let them know that, if they miss a class, I will genuinely miss them,” says Dr. Atchison. “It isn’t long before they come to understand that I couldn’t be more serious. Each of my students’ presence is important to me. Nobody is a number, and students really respond to that.” Her philosophy, of marrying scholarship with true service, is an embodiment of the holistic mission of the College.

Dr. Atchison is known and remembered well by generations of students for this deeply personal level of commitment to their success, but it is her Biomedical Distinguished Lecture Series for which many around the world know the College. It has put the College on the global map, welcoming Nobel Laureates in medicine, members of the National Academy of Sciences, Lasker Award winners, awardees of the Benjamin Franklin Medal in Life Sciences, leading surgeons and many other acclaimed professionals (including a handful of Chestnut Hill College alumni)—all of whom come to speak without the incentive of an honorarium. Attendance at the event—which has been continuous since that first snowy evening in 1994—is always overwhelming. It’s consistently standing room only, with students, staff and faculty from across all disciplines joining the crowd in the East Parlor and Rotunda at St. Joseph’s Hall.

The significance and reach of the lectures go far beyond the event itself. Students have the opportunity to sit and personally speak with lecturers—an opportunity for undergraduates, given the caliber of these speakers, that is unique in the nation. It has also touched lives around campus in intimate and tactile ways. When Charles Yeo, MD, of Jefferson University, one of the leading pancreatic surgeons in the country, came to speak, for example, he ended up meeting and taking into his practice a College staff member who was personally suffering from pancreatic cancer.

“I have had so much support in launching and managing the speaker series, from the College President on down to help managing the parking lot,” says Dr. Atchison. “Today, my feeling about the College and the series is of overwhelming gratitude and I will continue on in this way as long as God provides me with the means.”

Chestnut Hill College too is grateful—for Dr. Atchison’s generous, creative spirit and for the gift of her presence over the years. 🍷

SAVE THE DATE

The 28th Annual Biomedical Distinguished Lecture:
OCTOBER 27, 2021 AT 2:00PM
featuring alumna, Aisha Ghais '00 MD, BSc, MSc,
PA-C, MPH