

MEET THE TEAM



(Left to right: Drishti Parwanda, Fiona Li, Monia Draghi, Ph.D., Burak Yilmaz, M.S., Yusuf Erkul, M.D., Max Alexander, M.S., Rudy Christmas, Maria Grunwald, Ph.D., M.B.A., Jieni Xu, Ph.D., Tom Addison, Tom Colace, Ph.D., Cafer Ozdemir, Ph.D.; insert: Sadik Yildiz, Ph.D.)

We've recruited an extraordinarily dynamic, passionate, and multicultural team of experts to join Kernal Bio in Cambridge, Massachusetts. They've all excelled in their individual fields (from medicine, immunology, synthetic and computational biology, and pharmacology — to extrahepatic delivery, formulation, as well as process and business development) and had their pick of biotechs large and small. Ask them why they were **driven to work at Kernal** — it's our **multidisciplinary team** and **creative, problem-solving culture**, where everyone must be at the top of his/her game, but is **interdependent on each other's work**. Our mission: accelerate development, design, and execution of the pre-IND studies of our first cancer therapeutic product using our proprietary mRNA technology — and ultimately — to develop efficacious therapies that improve patients' quality of life.

FOUNDERS

Yusuf Erkul, M.D.
Chief Executive Officer &
Co-Founder



As Kernal progresses toward the clinic, **Yusuf Erkul** thinks often of his days as a practicing physician in Turkey because the germ of Kernal starts there. Profoundly moved by the tenacity and strength of his patients as they cycled through various tortuous treatments to reach remission from their cancer — **Yusuf was inspired to help them and motivated to find another, better way**. Before co-founding Kernal, and co-inventing Kernal's onco-selective mRNA platform, Yusuf was a director at Sentegen's R&D division. Previously, he worked in Merck's oncology department, where his group provided exploratory pharmacology and biomarker support for various siRNA and small molecule therapeutic programs, including a PARP inhibitor (MK-4827), which later received FDA approval for ovarian cancer (niraparib, ZEJULA®). His group also established and validated state-of-the-art immunocompetent mouse models, which helped the company develop the largest immuno-oncology pipeline. Yusuf obtained his M.D. degree from Hacettepe University in Ankara, Turkey, and his B.S. degree in Biology from MIT.

Burak Yilmaz, M.S.
President & Co-Founder



A molecular biologist by training, **Burak Yilmaz** co-invented Kernal's onco-selective mRNA platform technology and submitted four of its patent applications. He has 10 years of experience in nucleic acid design and synthesis. Kernal is his second entrepreneurial endeavor. He started his first synthetic biology company at the age of 22, called Sentegen (Sentebiolab), a synthetic biology company that manufactures and markets synthetic DNA (primers, long oligos, synthetic genes, and diagnostic probes). **He implemented a market strategy and established the company as a market leader in two years**. Sentegen quickly became profitable and continues to enjoy considerable growth today (CAGR of over 20%). As a founder of Sentegen, Burak managed more than \$6.5 million of project funds from national and international sources (EU FP7, TUBITAK, etc.) and oversaw the successful completion of more than 10 research projects, including an international collaboration to develop reverse engineered H1N1 influenza vaccine.

Cafer Ozdemir, Ph.D.
Director of Convergence
Science & Co-Founder



Identified as one of the "10 big ideas" in 2016 by the National Science Foundation, convergence is a means of solving vexing problems focusing on societal needs, integrating different technologies into a single system — and **Cafer Ozdemir** is ideally suited to direct Kernal's programs in that regard. Cafer was working on post-doctoral research focused on a portion of the mRNA, which he had come to realize was modular when Burak ask him to join as a co-founder. Since mRNA is basically the messenger program of DNA, you could take it out and program it to produce the specific kind of therapeutic protein. This idea fascinated him — as was partnering with Yusuf — his old friend and rival. Cafer and Yusuf first met as elite science high school students at the 10th National Biology Olympiad in Turkey, when they competed against each other to represent Turkey in the International Biology Olympiad the following year. (They both won golds in the Nationals and silvers in the Internationals.) Obviously Cafer said yes. He earned his PhD at University of Texas Southwestern Medical Center at the department of Molecular Genetics, where he studied the SREBP pathway, investigating tissue-specific expression and function of an enzyme in a mouse model. (SREBP — sterol regulatory element binding protein — pathway plays an essential role in both metabolic diseases and tumor development.) He received his postdoctoral training at Harvard Medical School. He then went on to become a biochemistry instructor at MIT's Minority Introduction to Engineering and Science Program. He has 11 published papers in scientific journals and holds two patents.

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SENIOR TEAM MEMBERS

Monia Draghi, Ph.D.
Immunology, ImmunoOncology
(New hire for 2021)



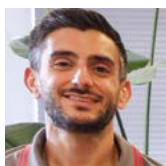
Kernal's in-house immunology expert, **Monia Draghi** has been tracking the progress of synthetic mRNA for about a decade now. Even with her prior experience at pharma where she worked with other great scientific minds, she hadn't seen a reasonable pathway for an effective therapy. That is, until she learned that Kernal's approach and proprietary technology was delivering true onco-selectivity; then *she had to be part of the team to see it through*. Monia believes Kernal's unencumbered (non-layered) development structure and multidisciplinary, problem-solving team is going to help break speed records in development. She joins Kernal from the Pfizer Center for Therapeutic Innovation (CTI), where she identified and seeded external research opportunities with biopharma partners focused on treating autoimmune and inflammatory disorders. Prior to Pfizer, Monia worked at Compass Therapeutics in Cambridge, Mass. There, she led drug discovery teams from early conceptual stages to the nomination of multi-specific antibodies as clinical candidates for the treatment of cancer. Earlier in her career, she was part of the team at Novartis Vaccine - Italy that developed Bexsero®, a vaccine against meningitis B, with FDA approval for ages 10 to 25. Monia holds a Ph.D. in immunology from University of Padova-Italy on a Novartis Vaccine-sponsored Doctoral Fellowship and performed her post-doctoral training in immunology at Stanford University. She has authored several patents and published extensively in top-tier scientific journals.

Maria Grunwald, Ph.D. M.B.A.
Chief Business Officer
(New hire for 2021)



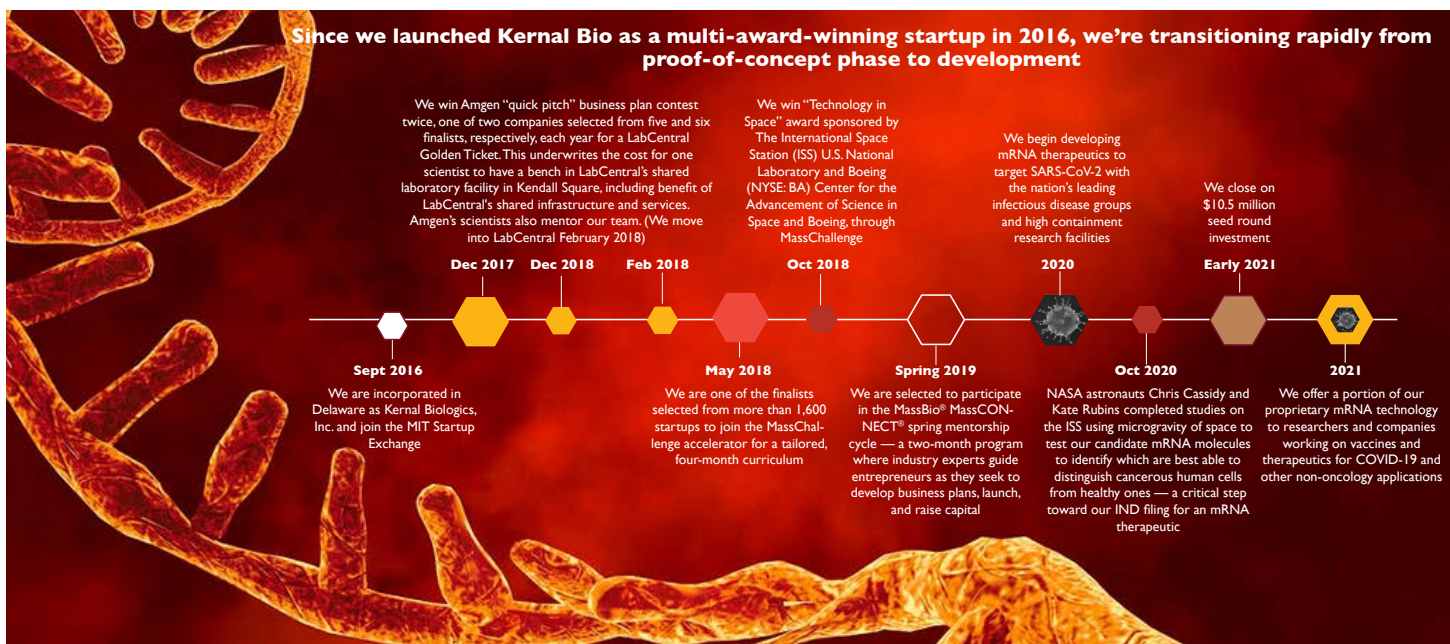
A results-focused executive with a track record of 50+ signed agreements at early- to late-stage private and public biotech companies — **Maria Grunwald** is drawing on her nearly two decades of M&A, partnerships, strategy and licensing experience as she leads our partnering and licensing discussions. Her previous business development experience included, among others, positions at: Dyax (acquired by Shire for \$5.9 billion), AesRx (acquired by Baxter), Dicerna [DRNA], Genevant, Radius Health, and QurAlis. She received graduate degrees from the Universities of Hannover and Cologne and performed her PhD studies in neuroscience and molecular biology at the Johns Hopkins University School of Medicine. She also holds an MBA from the MIT Sloan School of Management.

Thomas V. Colace III, Ph.D.
Associate Director of LNP
Delivery and Formulation
(New hire for 2021)

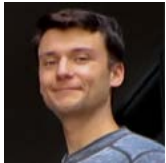


Tom Colace is always thinking of process solutions, even when he's relaxing smoking meats. Whether he's optimizing extrahepatic delivery of therapeutic mRNA or patiently infusing sweet smoke from cherry wood into a brisket, his Ph.D. in chemical engineering and molecular biology from The University of Pennsylvania and his B.S. degree in chemical engineering from Northwestern University is ingrained on how he puzzles through challenges methodically. Before his leadership role at Kernal, Tom has been part of large pharma (Merck, Pharmaceutical Science division) working on specialized projects. But as an innate problem-solver, he learned that he thrived as a generalist in a start-up culture at Verve. There, Tom developed LNP formulations to deliver base editor mRNA to the liver, and scaled up LNP manufacturing process to support IND-enabling studies.

KERNAL BIO HISTORIC TIMELINE & MILESTONES



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THE KERNAL BIO TEAM (all hired in 2021)**Tom Addison**
Synthetic Biology,
Neurodevelopment

While he loved his years at Harvard University's renowned Macklis Laboratory, performing fundamental research focused on cellular development and protein engineering, for **Tom Addison**, there was something too siloed about it. In academia, everyone works diligently in his/her own sandbox toward publication of his/her own research project, and once in a while, project updates are presented in a "parallel play" fashion. Now, Tom is excited to transition to Kernal's team environment, where everyone works passionately toward a common goal; a team unified in effort with a diversity of expertise and interdependency. With his protein engineering background, Tom is contributing with his projects to build the company's technology from the ground up. He's a hands-on person at work and at home. When not in the lab, he's either wood working or rebuilding his beloved BMC road bike. Tom received his B.S. in molecular biology from the University of Vermont, where he was recognized with a "Superior Performance in Research" award from the Department of Plant Biology for his work in Dr. Mary Tierney's lab.

Maxwell Alexander, M.S.
Computational
Biology, Data Science

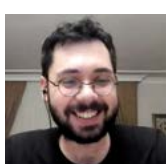
After concentrating on artificial intelligence for his M.S. degree in computer science from Tufts University, **Max Alexander** spent the next seven years developing automated bioinformatics research tools at the world-renowned Dana-Farber Cancer Institute's Blais Proteomics Center. While his work was critical to help speed research on small-molecule drugs targeting various cancers, he learned that biological drugs involving DNA and RNA would supercede his research focus. He became intrigued with the idea of sequence design as a therapeutic, and when he saw Kernal's approach, the fit seem right. Obviously, it didn't hurt that mRNA is one of the most hyped technologies on the planet right now, given the amazing success of the Pfizer and Moderna vaccines. Max came to Kernal from Radix Labs, where he developed multiple components of the its platform for coordinated biological laboratory automation. What does Max do when he needs a break from optimizing Kernal's machine learning tools for hyper-selective delivery and hyper-selective activation of mRNA? He's on his computer playing video games, or out hiking in nature, away from all screens.

Rudy Christmas
in vivo Pharmacology,
Immuno-Oncology

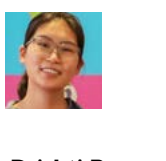
It's all about family for **Rudy Christmas**. And for him, the Kernal team felt like the semi-pro football team he was part of, before he tore his ACL and switched careers to his alternate love, science. They work and rely on each other to defeat the competition (Yes, Rudy maintains his competitive spirit) and have a few laughs along the way. For Rudy, science is a contact sport and the countless critical *in-* and *ex-vivo* experiments and analyses he's designed, directed, and performed in his decade-plus career demonstrate that he is hands-on. Most recently, Rudy served as an *in vivo* pharmacologist at Entrada Therapeutics. Previously, he led IND studies at Synlogic. He's also had key roles at Takeda, Immunogen, Moderna, and Merck, among others. Rudy received his certificate in biomedical laboratory science through Boston University School of Medicine's CityLab Academy, with additional biotech and surgical training at Northeastern and MassBay College, respectively. Rudy has joined up with Tom Colace to form Kernal's *ad hoc* "culture / social committee," with a sense of humor that transcends the very diverse team, they will make sure the family journey is always fun.

Jieni Xu, Ph.D.
Tumor Delivery,
Extrahepatic Delivery

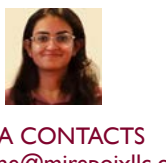
Jieni Xu has an entrepreneurial spirit and a strong need to see things through. A native of China, where she ranked number one in her class of 170 pharmacy majors when she received her B.A. from Shenyang Pharmaceutical University, Jieni moved to the U.S. to pursue her Ph.D. in pharmaceutical sciences from the University of Pittsburgh. Following graduation, Jieni successfully applied her academic knowledge at a clinical research organization (CRO). But after several interesting feasibility projects for name-brand global pharma and biotech companies, her natural thirst for completion remained unquenched when the application of her formulation work was transferred to the client. They rarely, if ever, shared the results of her work, not even whether it meant a successful or failed endpoint. Without such knowledge, there was no way to learn from one experiment to the next, optimize your results, or grow as a scientist; you just don't have visibility to do your best work. She jumped at the chance to apply her skills at Kernal. It checked all the right boxes: a curious, close-knit team working together on really cool science; iterating to see what works and what doesn't; with super-fast turn-around times. Plus, the potential of mRNA is huge – they'll develop a platform, then plug-and-play for different targets. At Kernal, everything aligns perfectly with her goals. Jieni will be able to see how her work benefits patients and will someday run her own biotech startup. To make sure she's prepared, she's pursuing an MBA at Northeastern University with a concentration in health science entrepreneurship.

Sadik Yildiz, Ph.D.
Data Science

A voracious reader and scientific history buff, **Sadik Yildiz** aspires to be the Kernal *turn-around-time* guy. Knowing the history and limitation of array-based studies such as pathogen identification, he fully understands that today's computing power, depth of databases, and learning algorithms, will enable him to convert new and old concepts that once were dead-ends to realistic, high-potential solutions. To Sadik, the case study for this is leveraging mRNA for vaccine use, a stepping stone for therapeutics. He's thrilled to be an "official" member of the team because he believes Kernal is the company with the chops to deliver on the therapeutic promise of mRNA. He knows the company well. During Kernal's early days, while Sadik was still working on his dissertation, he had many 2 a.m. conversations with co-founder Cafer Ozdemir. Cafer would call excitedly to ask... "what if," or get Sadik's thoughts on how to work through a daunting challenge. Sadik has a Ph.D. Harvard University in systems biology and a B.S. in biological sciences and bioengineering from Sabanci University, Istanbul, Turkey. His pile of books to read keeps growing (he's a fan of science fiction); he wishes he had extra double nights to catch up.

Fiona Li (intern)
Synthetic Biology

The second she saw the description for the internship position at Kernal, and read about the company **Fiona Li** thought to herself, "I NEED to apply to this!" Fiona is driven to learn all she can about the world of biotech. She's had two previous internships. In her most recent, she walked into a small investment firm located across from Michigan's Venture Accelerator program and asked the CEO if she could intern for him. He gave her a job as a business analyst reviewing companies and writing him weekly reports. So she knew that Kernal was hot. She's thrilled to add to her synthetic biology experience and get to work on mRNA. Fiona just received her B.S. in biomedical engineering, with a concentration in tissue engineering from the University of Michigan, and will be returning in the fall to be a master's degree program.

Drishti Parwanda
(intern) Immunology

On her first co-op position as an undergraduate molecular biology student at Northeastern, **Drishti Parwanda** is working hard to get over her natural shyness and take full advantage of her time at Kernal. It's a thrilling time to be at the company, and pioneers like Monia have so much to teach her, not only about the science, but also about how to navigate the world of biotech as a woman scientist. Drishti feels fortunate that her parents back in Delhi, India, are very supportive of her. But it's not always the case that girls are encouraged. She wants to be bold so that she, herself can be a pioneering mentor to all her "sisters" back in India. Just like her parents, she will be a source of encouragement and, like Monia, an example of courage to make the leap into biotech.

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