ALL IN: HOW ONE COLLEGE NAVIGATED A PANDEMIC—AND THRIVED
Class Marshal Huan Bui ’21 (left), from Ho Chi Minh City, Vietnam, leads the student processional from behind Miller Library, between East and West quads, to Miller Lawn, where thousands of family and friends awaited their arrival for the College’s 200th Commencement. Bui, the student with the highest grade point average, is a physics and mathematics major with a minor in statistics. “He’s the most talented, hard-working, and ambitious student I’ve worked with my 30 years at Colby,” said the William A. Rogers Professor of Physics Charles Conover, Bui’s thesis advisor. “He is a once-in-a-lifetime student.” This summer, the Phi Beta Kappa scholar is headed to MIT for a Ph.D. program in experimental atomic physics, continuing the research he conducted with Conover on ultracold atoms.
In May I visited with my parents for the first time since January 2020. The wait was excruciating, but the reunion was both monumental and routine in the best of ways. It was exhilarating to see them and also so normal to simply enjoy a meal together and continue the conversation we have been having for decades. The fact that they seemed to find the fountain of youth during the pandemic while I was aging in dog years? That’s for another time…

Later in May, we celebrated the graduation of 519 members of the Colby Class of 2021. Miller Lawn was filled with families and friends and the endless smiles of our remarkable graduating seniors. For the first time in 15 months, I was certain they were smiling—because I could finally see their beautiful faces. The masks were off, and I shook hands with each student, until then a forbidden act. It was both monumental and routine in the best of ways.

For so many of us, the hunger for the routine through this pandemic has been insatiable. We have been imagining our children learning in classrooms again instead of over Zoom. We could envision grocery store visits that weren’t anxiety-producing ventures and eagerly awaited nourishing visits with family and friends. We longed to mark the important moments in life, to celebrate accomplishments, to engage in the rituals that enrich us and connect us to our histories and traditions. We were devastated when we could not attend to loved ones at their times of greatest need.

Our routines, it turns out, are monumental.

The evidence of this was present for me every day on our campus for the past year. Never a moment passed when I wasn’t grateful for the more than 2,000 students attending class every day, researching in the libraries and laboratories, living in residence halls, performing in theatrical productions, training and competing in athletics. My pride in our faculty, which is always high, reached levels I could never have imagined. They didn’t follow their colleagues at other top universities and colleges who chose not to return to the classroom this year. They provided a Colby education at its very best. And our staff? Tireless and dedicated doesn’t begin to describe the commitment, flexibility, and talent of the folks who form the backbone of this community.

The Colby team made this year seem almost ordinary—and that turned out to be truly extraordinary.

At Colby, we don’t scan the horizon of higher education and play follow the leader. We chart our own course, knowing at every turn that our mission and purpose must guide us. That was how everyone in this community responded to the pandemic, and the results were evident in the smiles of our students on commencement day.

Treasuring the ordinary. That is a gift from this difficult time that I never want to return.

David A. Greene
OH, WHAT A BUSY DAY in the O’Neil | O’Donnell Forum on the Jack Kelley Rink. Recreational and team athletes take to the ice while other members of the community work out on the cardio equipment on the upper viewing deck.

A time-lapse image taken over the course of 15 hours captures the breadth of the community’s use of the Harold Alfond Athletics and Recreation Center. The new building showed a significant uptick in use with more than 85 percent of the student body taking advantage of practice spaces, recreational opportunities, and wellness classes during the academic year.
True North is Colby’s digital home that showcases the impact of the College’s initiatives through virtual events and storytelling on academics, the arts, athletics, and everything in between.

True North brings together alumni, families, friends, and the greater Colby community from all over the world, with opportunities to connect with the College and each other like never before.

Start exploring today.

TRUE NORTH
CONNECT. DISCOVER. CELEBRATE.
TRUENORTH.COLBY.EDU
Your ongoing support has a ripple effect.

From annual gifts to the Colby Fund to a planned gift through the Colby Legacy Society, you can lift up today’s students and build a foundation for future classes.

Make a gift today or plan one for tomorrow.

A gift of any size to the Colby Fund immediately benefits the student experience.

Extend your impact by becoming a Colby Legacy Society member. Designate Colby as a beneficiary in your will, trust, retirement plan, or insurance policy, which can offer significant tax benefits while providing for the College and your family.

Visit darenorthward.colby.edu/giving or call 1-800-311-3678 for more information.
FOR ART’S SAKE

A stunning three-level building, flexible in design and used to accommodate a variety of activities. A large performance hall with a capacity of 300 people or more—with adjustable staging. An arts incubator, performance spaces, a film studio, music practice spaces, and more.

The Gordon Center for Creative and Performing Arts is coming.

The center, planned to open in the fall of 2023 where the Mary Low parking lot is currently sited, will bring together cinema studies, music, and theater and dance in one location. It will serve as a creative laboratory for the performing arts and disciplines across the curriculum.

This year the groundwork was prepared for the center’s parking area. Meanwhile, fundraising efforts for the 74,000-square-foot center continue. Trustee Michael Gordon ’66, Trustee Marieke Rothschild P’16, and her husband, Jeff Rothschild P’16, are among those who have generously supported the project thus far.

“This Gordon Center is not just for students who already study the creative and performing arts,” said Associate Professor of Music and co-chair of the Music Department Yuri “Lily” Funahashi. “The building, with the open forum connecting all the major spaces, will be welcoming to everyone, and we hope that with the glass walls inviting visitors to have a peek at the creative process, they will be encouraged to stay and engage more fully with the arts.”

“We are very much looking forward to being under one roof, rubbing elbows with our collaborators on a daily basis, and being inspired by ideas that can flow from day-to-day interactions.”

—Associate Professor of Music and co-chair of the Music Department Yuri “Lily” Funahashi
I’m graduating, too.

After 20 years at Colby as a non-traditional student, I’m taking a last walk across Miller Library lawn, packing up my stuff, and leaving Mayflower Hill. It’s that time of year.

At least that’s the way I find myself thinking of it as retirement from Colby approaches. Yes, I had four years as a student back in the day. But a couple of decades later I returned and started what I think of as an outstanding graduate program. It was very multidisciplinary, with intensive one-on-one work with pretty much the professor and subject of my choice.

Extragalactic astronomy. Moral philosophy. 16th-century French poetry (I read it in translation). Genomics and honeybees. The Civil Rights Movement. The history of the tattoo. Marsden Hartley’s life and art. (That one involved making a film. There were numerous field trips.)

And yes, there was a serious off-campus study component in my program. Off the very top of my head (and it’s funny what comes up when you think back), I remember a visit with an idealistic alum named Gwynelle Dismukes ’73, who had fled the city for a legendary commune in Summertown, Tenn., where utopia was gray-haired but hanging in. A day in an elementary school in the Mississippi Delta, where alum Alex Quigley ’99 was in the classroom for Teach for America and conditions at the nearly all-Black school were proof that segregation and discrimination were alive and well.

In New York, it was a downtown shoot with Alex Katz, for the aforementioned Marsden Hartley film. When the elevator door opened into the studio, Aida was waiting. (Director Milton Guíllén ’15 and I were a bit star-struck.) Uptown at the New York Times, it was a few hours with Investigations Editor Rebecca Corbett ’74 and her team, which blew the whistle on Harvey Weinstein and helped trigger the #MeToo movement. Pre-Pulitzer, Colby Magazine was at the epicenter of global social change.

So a 20-year tour that began with trying to capture the inimitable Professor Charlie Bassett in words and print ends with digital-first, artificial intelligence, and climate-change research. (I think Professor Bassett would say machine learning is best taught to people who have read J.D. Salinger.) The interim was a whirlwind: hanging out with Colby students in Khayelitsha, a township outside of Cape Town, and the next week with other students in Downeast Maine. Then back on campus, where, if I was having a down day, a chat with a student inevitably would lift me back up. Just one example off the top of my head: coming away from a conversation with a determined first-gen first-year named Marnay Bassett; saying machine learning is best taught in a determined manner. Pre-Pulitzer, Colby Magazine was at the epicenter of global social change.

I thank you for all of it. Final takeaways don’t get any better than that. Good stories, good people, and the world in good hands. And a wave of positive momentum. Final takeaways don’t get any better than that. I thank you for all of it.
In this issue:

Christina Nunez (“Opening a Window to Evolution,” P. 70) is a writer based in the Washington, D.C., area specializing in energy, science, and innovation. She regularly contributes to National Geographic.

Kayla Voigt ’14 is a food, travel, and technology writer based in Boston, Mass. Besides writing for her alma mater, she’s been featured in Condé Nast Traveler, Food and Wine, Eater, and more.

Bill Donohue ’86 is a veteran freelance journalist reporting around the world. In addition to Colby Magazine, his work appears regularly in the Washington Post Magazine, Outside, and Bloomberg Business Week.

Dominick Leskiw ’21 majored in environmental science and English, focusing on marine and forest ecosystems. Leskiw’s work reflects his passion for photography, illustration, and writing.

All In: The inside story of how Colby not only weathered the pandemic but became a model for colleges and beyond.

Provost Margaret McFadden on how the Davis Institute for Artificial Intelligence will infuse the curriculum and students’ lives and futures.

Assistant Professor of Environmental Studies Gail Carlson determines that some ski waxes leave a lingering health hazard.

Communities, a Need for Environmental Justice: Mykela Patton ’22 delves into zoning and lawmaker to right longstanding wrongs.

Evolution: For geneticist and Associate Professor of Biology David Angelini, soapberry bugs offer a compelling window on adaptation.
“Two hundred commencements and this might be the most glorious of them all,” President David A. Greene said May 23 to the Class of 2021 and their guests filling Miller Lawn with palpable excitement. The talented, driven, and capable graduates leave a legacy of courage and resiliency as leaders who conquered the challenges of learning and living under the storm clouds of the pandemic. Poet and artistic visionary Richard Blanco, Litt.D. ’14 delivered the commencement address and penned an original poem, “Your Self in You, Again,” in honor of the graduating class. “Turn to yourself and say: I see me in everyone. Turn to the sun and say: we see us as One Colby,” he said. Huan Bui ’21 led the procession as class marshal, the student with the highest grade point average; for engaged citizenry, Hannah Johnson ’21 received the Condon Medal, the only award presented at commencement; and Nicholas Ho ’21 delivered the student address. “I hope you all feel as lucky as I do,” Ho said to his classmates, “that we get to celebrate in the joys of togetherness, right now, with each other.”
**APPRECIATION OF A STORY OF INJUSTICE AND FRIENDSHIP**

I want to thank *Colby Magazine* editor Gerry Boyle ’78 for having researched and published the story of Keyon Sprinkle and one of his attorneys, Colby graduate Chad Higgins. Sprinkle’s 20-year incarceration and struggle to be exonerated has been all too familiar as we read of individual people who suffer these injustices. It is an inspiring account of unrelenting fortitude, and friendship to boot.

Joani Katz ’70
Newton, Mass.

---

**TAPPING A FONT OF COLBY MEMORIES**

Thank you for the lovely tribute to my grandmother, Estelle Rogers MacDonald ’39, that was published in the obituaries in the most recent issue of *Colby Magazine*. She was always very proud of her family’s strong connections to Colby and the Waterville area. During my last visit to my grandmother, whose short-term memory was failing, she sang several snippets of her Colby sorority song to my children and me! It was remarkable that, even at her advanced age, she could tap into fond college memories that were over sixty years old.

Megan MacDonald Davis ’94
Manchester, Mass.

---

I want to express gratitude and kudos to *Colby Magazine* editor Gerry Boyle ’78 for the article “Friends for Life.” The story of Keyon Sprinkle and Chad Higgins ’97 is thought-provoking, disturbing, compelling, and very inspiring. Thank you to *Colby Magazine* for helping so many people learn about their story and become more informed about how our system works. It is a great piece of writing!

Peggy O’Grady P’16
North Andover, Mass.
FROM MEMORIAL HALL TO STANFORD:
THE LASTING GIFT OF A COLBY EDUCATION

My parents were Clara Carter, Class of 1921, and Professor of English Carl J. Weber. They figuratively gave me to Colby. Colby and its teachers gave me an education in more ways than one, by introducing me to a college library as a stimulating educational environment in which to build my own very rewarding career in academe.

Colby provided me an education that keeps growing. I grew up in Colby’s educational climate. I completed my 1947 degree in history while working many hours in Memorial Hall’s library as a student assistant. I was awarded the Colby Library Associates Book Prize Award in 1947.

Librarian Orwin Rush had me among a small crew to move Colby book collections from Memorial Hall (dating from 1869) on the original campus during trips of the Blue Beetle bus up to the new Miller Library. Meanwhile, Prof. Alfred Chapman and Prof. Mary Marshall gave me class assignments working with the collections. Another professor (perhaps Classicist Wilbert Lester Carr) brilliantly taught a course in Greek and Roman civilizations, with class assignments utilizing two marvelous books on this subject, imbuing me with his excitement in those centuries of history.

With my inbred enjoyment of reading and assembling books, this educational mix of books with fascinating worldly places all grew like a sturdy oak. I felt learning from bookish sources was a comfort, metaphorically an enduring educational home. Then, Colby’s Librarian James Humphrey told me of his maturing professional home found while studying in Columbia University’s graduate program in librarianship. How natural that I would transit from Colby to Columbia for a graduate degree in library science, at a time when Dwight D. Eisenhower was president!

Colby’s intellectual foundation was perennial, staying and growing with me as I found my first full-time position as descriptive cataloguer in Harvard’s Widener Library. Soon, for eight years, I entered what amounted to a practicum in librarianship working daily with Director Keyes D. Metcalf, at the time nationally recognized as the “dean” of academic librarianship. He assigned me a full score of projects, learning tasks through diverse university library business, technical, bibliographic, and management issues, some to be solved and written up and printed in the Harvard Library Bulletin.

With such experience, begun at Colby, with my ensuing educational maturing, and earning a Harvard graduate degree in history, my career next had me moving to Stanford University, where I served 30 years, retiring in 1993 as director of Stanford University Libraries.

That did not end my bookish life, begun at Colby. For, early in 2020, Stanford pressed me to write the 1960-1990 history of how a library, once managed like Colby’s residing by the Kennebec, was transformed during those three decades into a renowned digitalized university teaching and research complex.

So, during the Covid-19 pandemic that kept me holed up in my retirement apartment in Southern California, I wrote the required history: “Stanford: A Fusion of Positives Create a New University Library for the Future.” A copy of this history is now in Colby’s Library, where my career story launched.

My parents had given me to Colby, and Colby gave me so much—a thriving educational gift, an enduring beneficence for a lifetime.

David Weber ’47
Irvine, Calif.
REMEMBERING ARCHIBALD

When I arrived at Colby as a junior transfer student in the fall of 1974, I was unaware that my path would soon intersect with another new arrival, Douglas Archibald, chair of the English Department.

Doug Archibald, as we all knew him, was brought in to head the English Department a year earlier. His success in that role undoubtedly influenced President William Cotter’s decision to persuade him to become dean of faculty a few years later. I sensed he was reluctant, but accepted it as his duty—a trait one can trace back to his service as an Air Force intelligence officer.

It was as a teacher and a scholar, though, that he inspired me, and countless other students during more than 40 years of teaching. Only much later could I see how his example influenced my direction as a writer, and my work habits as a journalist.

This professor, unlike most older colleagues, didn’t believe in preserving a distance from students. We would sometimes be invited to his farmhouse for a cookout, an experience I couldn’t even have imagined previously.

His respect for growing intellects was palpable, and he had a disarming way of taking one into his confidence. His class on W.B. Yeats was a revelation; he was then in the midst of writing the critical study that was published as Yeats in 1983, and remains fresh.

When we had a tutorial—I was laboring long and hard over a paper and not making much headway—he surprised me by talking about some of his own struggles. He gave me a copy of an article he’d intended for a book, but found the editor unwilling to include it.

There were English professors at Colby who were more theatrical, who lectured with a bravura manner that even then seemed a bit old-fashioned. Few so persuasively invited students to go more deeply into a text, to let it infiltrate the way they read and, in a small but vital way, how they saw the world. That was his gift as a teacher.

In a manner one associates more with Byron or Shelley, Doug Archibald showed how Yeats could be a public and political figure without forfeiting his artistry, escaping at times his own famous choice between “perfection of the life, or of the work.”

That castoff essay depicts the pressure exerted when two literary minds encounter one another, as he put it, “reading [Jonathan] Swift over Yeats’s shoulder.” Archibald finds “a tension between those experiences . . . but no polarity.”

And, he concludes: “We are attending both to our historical moment and to the author’s. We are in a kind of imaginative present that honors the needs and values of today and which can transfigure all our yesterdays, so that the past becomes less brief, not dusty death, but light and life.”

Doug Rooks ’76
West Gardiner, Maine
That question was answered with the news that the Davis Institute for Artificial Intelligence will open at Colby this fall, the first such center at a liberal arts college, and one that will prepare students to help lead the next generation of programmers, designers, and policymakers considering AI and its place in our lives.

Made possible by the tremendous generosity of the Davis family and trustee of its charitable foundation Andrew Davis ’85, LL.D. ’15, the institute will provide new pathways for talented students and faculty to research, create, and apply AI and machine learning (ML) across disciplines while setting a precedent for how liberal arts colleges can shape the future of AI.

Colby graduates, said President David A. Greene, “will be deeply educated in the liberal arts with the powers of discernment to shape AI for the greater good.”

“AI is driving very dramatic shifts in virtually every area of inquiry,” said Margaret McFadden, provost and dean of faculty. “These shifts will have profound consequences for quantitative research and teaching across the sciences, social sciences, and the humanities and ultimately offer new routes to discovery.”

WHERE BUT THE LIBERAL ARTS?

“Addressing the complex questions surrounding AI requires a holistic analysis and response that can only come from a broad liberal arts perspective.”

—Andrew Davis ’85
Opened in March, Front & Main, the stylish restaurant and bar located on the first floor of the new Lockwood Hotel, welcomes guests to dine from a fresh, local ingredient-inspired menu.

Visit them at 9 Main Street, Waterville, or online at frontandmainwaterville.com.
FACULTY BOOKS
In her latest book, anthropologist Catherine Besteman discusses a new world order she calls militarized global apartheid: “a loosely integrated effort by countries in the global north to protect themselves against the mobility of people from the global south.” It’s a system by which wealthy and powerful countries in the North implement measures in the name of security and profit that restrict or criminalize unauthorized migration from the South. *Militarized Global Apartheid* tells how this system came into place, how its players influence one another, and how politics might liberate the oppressed.

2. **James R. Fleming** *(Science, Technology, and Society)*

*First Woman: Joanne Simpson and the Tropical Atmosphere*  
*Oxford University Press* (2020)

The biography *First Woman* paints a holistic portrait of pioneering meteorologist Joanne Simpson (1923–2010), who turned an early fascination with weather into groundbreaking work across six decades of significant changes in meteorological science. *First Woman* also captures Simpson’s personal struggles with depression and a search for love, and her ability to overcome them. Fleming’s artistry at humanizing scientists and placing them in a larger social context is on full display here. Without that context, he said, “we’re not really understanding the way that science is done.”

3. **Mouhamédoul Niang** *(French studies)*

*L’Écriture de L’Espace Dans Les Littératures Africaine et Créoliste: De la polarité à sa transcendance* *(The Writing of Space in African and Creolist Literatures; From polarity to its transcendence)*  
*L’Harmattan* (2020)

This book by Mouhamédoul Niang, associate professor of French, elucidates the writing of space by West African writers Mongo Beti, Ahmadou Kourouma, and Aminata Sow Fall and French author Patrick Chamoiseau. It studies the staging of a spatial polarity with its modalities and ramifications, articulated either in the urban, as in Sow Fall and Chamoiseau, or in a young postcolonial nation-state or in a community in which ethnic identity takes precedence over national/modernist identity in the novels of Kourouma and Beti.

4. **Gianluca Rizzo** *(Italian)*

*Poetry on Stage: The Theatre of the Italian Neo-Avant-Garde*  
*University of Toronto Press* (2020)

In Italy’s neo-avant-garde period of the 1960s and ’70s, the theater was a breeding ground for writers to test their styles and themes directly with a live audience. *Poetry on Stage* examines the dynamics between the country’s neo-avant-garde writers and the actors, directors, and playwrights of the Nuovo Teatro. Meticulously researched, the book shows how interconnected the theatrical and literary movements were and their united front against traditional Italian theater, often seen as a common “enemy.” Included are interviews Rizzo conducted with noted scholars in the field.

5. **Ira Sadoff** *(English, emeritus)*

*Country, Living*  
*Alice James Books* (2020)

Ira Sadoff adds to his precious gifts to the rest of us, in this latest volume wrapped in the kind of clarity and grace that emerges when poet and muse meet and chat about what they finally agree is most important. Once again, the speaker is on the outside of life looking in, rummaging through a desk drawer of experiences and considering which ones to keep. An old girlfriend, a drive through the “thrum of Kansas,” Coltrane and Monk, a long-gone father who “drifted like a skiff.” “It takes a few notes, a very few notes, to undo the bare bones of a person,” Sadoff writes, and then proceeds to use words that ring so true they echo in your head.

6. **Kerry Sonia** *(Religious Studies)*

*Caring for the Dead in Ancient Israel*  
*SBL Press* (2020)

The commemoration and care for the dead by the living in Ancient Israel is examined against the broader cultural backdrop of West Asia in this book published by the Society of Biblical Literature. Called the cult of the dead kin, or ancestor cult, it involves ritual practices wherein the living construct monuments, provide food and drink offerings, invoke the names of the dead, and protect their remains. The book also examines roles that Israelite women played in the rituals and reconsiders biblical writers’ attitudes toward the cult of dead kin.

7. **Raffael Scheck** *(History)*

*Love Between Enemies: Western Prisoners of War and German Women in World War II*  
*Cambridge University Press* (2020)

Raffael Scheck, the John J. and Cornelia V. Gibson Chair Professor of History, explores the “forbidden love” cultivated between German women and Western prisoners of war during World War II. Marveled as “ground-breaking work” and a “scholarly masterpiece” from academics around the world, Scheck’s book highlights the motivations behind these “transgressing couples” and draws from thousands of court cases to offer a transnational analysis of personal relationships with enemies. The aftermath of this subversive intimacy on post-war prisoners and everyday women was not parallel; women were often left mothering illegitimate children and shoulderling public shame for years that followed.

8. **Arisa White** *(Creative Writing)*

*Who’s Your Daddy*  
*Augury Books* (2021)

In her debut memoir, Arisa White, assistant professor of creative writing, breaks the barriers of storytelling.

Continued on page 23.
1. Bill Carr ‘89 and Colin Bryar

Working Backwards: Insights, Stories, and Secrets from Inside Amazon
St. Martin’s Press (2021)
Discover Amazon’s secrets for success and learn to think, manage, and work with an Amazonian mindset in this revealing book by Amazon veterans Bill Carr ‘89 and Colin Bryar. Working Backwards includes dozens of actionable principles that can be applied to today’s businesses as an antidote to the current volatile marketplace. The book also shows how Amazon’s principles supported the formation of the company’s winning products, including Kindle and Amazon Prime. Carr spent 15 years as Amazon’s vice president of digital media and is now cofounder of Working Backwards LLC, providing executive coaching on ways to implement Amazon’s management practices.

2. Hal Crimmel ’88, editor

Utah’s Air Quality Issues: Problems and Solutions
University of Utah Press (2020)
Utah’s air pollution comes from a myriad of sources, including coal-fired power plants, automobiles, agriculture, oil and gas production, and summer fires in Utah and the West. In his fifth book, Hal Crimmel ’88, the Rodney H. Brady Distinguished Professor of English at Weber State University, has compiled essays that cover a wide range of topics to help readers understand the causes and impact of air pollution while exploring solutions for combating the problem. Chapters include articles written by Chris Zajchowski ’07, a tourism and recreation expert, and Seth Arens ’01, an air quality scientist.

3. Rebecca A. Durham ’97

Half-Life of Empathy
New Rivers Press (2020)
Through this collection of poetry, Rebecca Durham ’97 explores and distorts scientific knowledge in the ecology realm. Drawing from her experiences studying the botany of ecosystems in the American West, Durham blurs the line between fact and fiction. The Montana transplant takes readers on a journey around complex relationships formed in the Anthropocene, the age of major human expansion. Her debut book has been called a timely response to “this never-ending industrial revolution” and a deep look into “Durham’s exquisite botanist world-sense.” A Pushcart Prize nominee, Durham’s work has been featured in numerous national and international journals, literary magazines, and anthologies.

4. Elyssa Ford ’03

Rodeo as Refuge, Rodeo as Rebellion: Gender, Race, and Identity in the American Rodeo
University Press of Kansas (2020)
Elyssa Ford ’03, associate professor of history at Northwest Missouri State University, chronicles a largely untold story of rodeos in the American West in her debut book. Beyond the cowboy clichés, Ford captures the role that race and group-specific rodeos played in shaping the identities of West-African Americans, Native Americans, Mexican Americans, Native Hawaiians, and the LGBT+ community. Rodeo served as a refuge from hostility for these marginalized groups and was a powerful means of connecting people who were building their own story of America. Ford also examines the ways masculinity and gender roles have influenced—and continue to shape—this quintessential American sport.

5. Jeff Gottesfeld ’77

Twenty-one Steps: Guarding the Tomb of the Unknown Soldier
Candlewick (2021)
Ahead of the 100th anniversary, on Nov. 11, 2021, marking the internment of an unidentified soldier from World War I at the Tomb of the Unknown Soldier in Arlington National Cemetery, Jeff Gottesfeld ’77 has released the picture book Twenty-one Steps. Beautifully illustrated and told from the first-person perspective of a tomb guard, Gottesfeld’s stark prose tells the story of the guards who ensure their fellow soldiers are never alone. Their precision of uniform, respect for tradition, and deliberate movements—on display 24 hours every single day—emanates honor and respect for the unnamed and unknown.

6. Roger B. Jeans ’63

American Isolationists: Pro-Japan Anti-Interventionists and the FBI on the Eve of the Pacific War, 1939-1941
Roger B. Jeans ’63, former Elizabeth Lewis Otey Professor of History, Emeritus, at Washington and Lee University, continues his career as a 20th-century Japan expert in this first full study of pro-Japan isolationists. With the heightened risk of war in the late 1930s, many Americans, dubbed isolationists, protested involvement in another global conflict. The Committee on Pacific Relations was one prominent pro-isolationist group that emerged just 10 weeks before the beginning of the war. Drawing from previously untapped sources, such as letters by committee members and the FBI files compiled on them, Jeans uncovers the rich history of this widely unknown group.

7. Michael Marra ’86

Confessions of a Public School Teacher
Dorrance Publishing (2021)
After 35 years in the classroom, Michael Marra ’86 has learned a thing or two about teaching high school history, and he’s also developed strong opinions about what works in public education and what doesn’t. It isn’t teacher unions, which he writes have protected poor-performing teachers and stymied the many efforts to help children realize their full potential. He uses his experiences teaching in Rhode Island
(his calling, he writes) as evidence to support his argument that tenure and seniority have not helped students. He invites readers to join the conversation and make their own assessment of these critical issues.

8. Briney Alltucker Mikell ’01

The Swirl
Self-published (2020)
Briney Alltucker Mikell ’01, a mom and second-grade teacher in Boulder, Colo., brings feelings and self-love to life on each colorful page of her debut children’s book. The cast of playful and delightfully diverse characters, donning everything from boots to big reindeer ears, guide readers on a journey of recognizing beauty and worth in themselves and the world at large. The Swirl is a timeless, empowering reminder to look deep into our heart for answers, and it is clear that every page was made from Mikell’s.

9. Sarah Langan ’96

Good Neighbors: A Novel
Atria Books (2021)
A sudden tragedy on Maple Street in suburban Long Island shatters the picture-perfect illusion of safety its residents harbor in this literary noir by Sarah Langan ’96. The ensuing turmoil exposes the perils and betrayals of motherhood and friendship—and the ugliness behind social hierarchy. Goodreads included Good Neighbors on its “most-anticipated mysteries and thrillers” list, and an NPR reviewer said the book “is one of the creepiest, most unnerving deconstructions of American suburbia I’ve ever read.” Langan, author of three previous novels, is a three-time recipient of the Bram Stoker Award.

10. Susan Katchen Oubari ’90

Breathwork: Respirez pour changer
Flammarion (2020)
Breathwork, a breathing method developed in the 1970s by American psychologists, has come to life in France through the work of Susan Katchen Oubari ’90, Reiki master, spiritual coach, breathwork teacher, and founder of “Breathe in Paris.” Now, Oubari and coauthor Emilie Veyretout, head of the beauty and wellness section of France’s Le Figaro newspaper, have joined forces to create Breathwork, an accessible guide to the transformative technique that can release and refocus your energy. “Breathe better, live better,” the authors assert. Watch for an English-language version later this year.

11. Becky Munsterer Sabky ’01

Valedictorians at the Gate: Standing Out, Getting In, and Staying Sane While Applying to College
Henry Holt and Company (2021)
Drawing on 13 years of experience as director of international admissions at Dartmouth College, Becky Munsterer Sabky ’01 uses her keen insight to share an honest behind-the-scenes look at how to navigate the college admissions process. From the college search to the application process to the post-decision questions parents and high schoolers ask themselves, Sabky “attempts to humanize the process and offer advice on how to survive the hullabaloo,” she writes in the book’s preface. One reviewer said Sabky “shows us what matters, and what doesn’t, at the threshold of higher education.”

12. James Sullivan ’87

Unsinkable: Five Men and the Indomitable Run of the USS Plunkett
Scribner (2020)
James Sullivan ’87 continues his career as an author and journalist in this thrilling telling of the USS Plunkett, a U.S. Navy destroyer that endured the most formidable German attack on any Navy ship during World War II. The Over the Moat author chronicles this extraordinary story of five brave young men by piecing together their lived experiences originally found in Navy logs, war diaries, action reports, letters, journals, memoirs, and interviews with the men and their families. Sullivan, who holds an M.F.A. from Iowa Writers’ Workshop, has also written for the New York Times and National Geographic Traveler.

13. James Thrall ’78

Mystic Moderns: Agency and Enchantment in Evelyn Underhill, May Sinclair, and Mary Webb
Lexington Books (2020)
Mystic Moderns considers the response of British authors Evelyn Underhill, May Sinclair, and Mary Webb to the period of modernity that encompassed the First World War. James Thrall ’78, the Knight Distinguished Associate Professor for the Study of Religion and Culture at Knox College, identifies where the authors overlap and diverge in their attempt to understand mystical experiences while refuting modernity’s claim that mysticism has no place in secular and rational modernity. Reviewers hail the book as “an utterly engaging, enjoyable study” and a “rich exploration of the ‘modern mysticism’ of three distinctive and important writers.”
14. Cecily von Ziegesar ’92

_Cobble Hill_
Atria Books (2020)

Cecily von Ziegesar ’92, a #1 New York Times bestselling author known for her _Gossip Girl_ series, makes her mark on the adult fiction realm with _Cobble Hill_. By exploring the chaotic, relatable dynamics of four families—and their secrets—von Ziegesar pulls readers deep into the world of this real-life, eclectic Brooklyn neighborhood. von Ziegesar’s piece has been hailed as “breezy, witty, and compulsively fun to read” with a cast of “lovable misfits” by major book reviews across the country. Having raised her own daughters in Cobble Hill, von Ziegesar tactfully illuminates the realities and dysfunction of modern families in this sharp page-turner.

By merging a traditional memoir with the raw nature of poetic and lyrical expression, White retraces her steps as a queer, Black, Guyanese-American woman establishing her place in the world. _Who’s Your Daddy_ is a powerful coming-of-age tale sure to pull at the heartstrings of readers. White’s truths, particularly her search for her father’s love and validation, have been hailed as a “lyric anthem for the fatherless” and a showcase of her “rib-cracking amount of courage” by renowned authors across the country.

9. Hong Zhang
(East Asian Studies)

_Beyond Filial Piety: Rethinking Aging and Caregiving in Contemporary East Asian Societies_
Berghahn Books (2020)

Co-edited by Hong Zhang, associate professor of East Asian studies, _Beyond Filial Piety_ documents the challenges East Asian societies face regarding the filial tradition of adult children caring for their aging parents. Drawing from mixed methods data, the chapters explore emerging responses to and cultural definitions of aging populations and caregiving by and for elders. The authors question the historical romanticization of the elders’ “paradise,” examine the role of the state, and assess the intersection of caregiving and death. This timely book analyzes widespread patterns and distinct trends across China, Hong Kong, Taiwan, Singapore, Japan, and Korea.
FACULTY PUBLICATIONS


FACULTY PUBLICATIONS CONT.

Museum of Archaeology and Ethnology at Harvard University, 2020.


Some places shine in their hardest and toughest moments.

It is in Colby’s DNA to come together as an entire community... ...it inspires me.

—President David A. Greene
March 2020
It was last August and first-years were arriving, unloading cars, lugging stuff into residence halls. President David A. Greene was on hand for the big day, meeting students, greeting parents, only to hear, “We expect to be back here within two weeks to a month to pick up our child.”

It didn’t happen.

Eight months later those students were still on campus, and Colby’s singularly successful effort to provide an in-person, on-campus learning experience amid the pandemic had been heralded in national media from the *New York Times* to the *PBS NewsHour*, *CNBC* to the *Wall Street Journal*, *USA Today* to *Forbes*. Colby had more mentions in prominent publications and news outlets during this period than any college like it—and those mentions were overwhelmingly positive, as Colby’s handling of the pandemic was held up as a model for others.

“Colleges are exploding with Covid and have lax testing,” said a headline in *USA Today* in a feature story about Colby. “One school is keeping cases down.”

So why no repeat of the March 2020 evacuation of campus that began the College’s entry into the world of Covid-19? Why no headline-grabbing implosion with partying students seeing their school years ended by a pandemic wave? How was it that as this story was being written, Colby held an in-person, on-campus commencement, with graduates receiving diplomas before friends and family on the Miller Library lawn, while other colleges and universities held yet another mass Zoom event?

This is how.
It’s a story of disciplined focus on Colby’s values and mission, belief in science, intensive research and planning, and meticulous execution. A community that was all-in—faculty and students, alumni and parents, dining services and facilities, and athletics. Eighteen-hour days and sleepless nights, and decisions implemented faster than even this virus could spread.

*Said Provost Margaret McFadden, “We left it all on the field.”*

It was a very different field when this all began, back when Zoom wasn’t our window to the world and contact tracing was vaguely known as something in the domain of public health experts. Early in 2020 that world was upended in a matter of weeks as the Covid-19 virus spread across cities, countries, and continents like a swarm of invisible locusts. Deserted New York City looked post-apocalyptic. European countries were ravaged. News reports were filled with images of refrigerator trucks used to supplement morgues overflowing with Covid-19 victims.

Mayflower Hill seemed like a sanctuary until it didn’t, and with the virus approaching in March 2020, students were evacuated from campus. They were soon being taught remotely by professors who pivoted to the new reality in a matter of days, trading the close community of a classroom for a roster of faces across a computer screen. Sports seasons ended mid-stride, international students and others who could not return home were sequestered in residence halls, and the semester ended without a commencement on campus.

Meanwhile, the administration intentionally said, well, not much.

“That was probably the hardest part,” said President David A. Greene. “The lack of knowledge about the virus, how it was spreading, whether you could do things safely. Testing was not available, so I just kept saying, ‘What we’re going to do is wait. We just have to hold off on making important decisions as long as we can because we need to see the road ahead.’”

This wasn’t easy, not in mid-crisis, with other institutions quickly moving to do and say something. But while Colby was resisting any rush to decisions, within weeks it was becoming clear that no matter how well faculty provided online learning, how adroitly student-life and technology staff improvised, remote learning wasn’t going to replace the personal experience that students expected, nor did it fulfill Colby’s fundamental mission. And it soon became apparent that online college, while temporarily passable for some students, was filled with obstacles for others.

“Some students had good computers and quiet places to work and bandwidth,” McFadden said. “And others went back to places where they were in crowded homes without enough internet and with no access to a computer or needed to go to work to support their family. The inequities were very troubling to faculty, and to all of us.”

Including Greene, who made the first big pandemic decision. “If we can get back for the fall, we need to be back. Let’s focus on that.”
This was in April 2020, a time when some schools like Colby were battening the hatches to weather the pandemic storm: going fully remote, devising hybrid models with limited numbers of students and faculty on campus, compressing courses and semesters to keep students from interacting as much as possible.

Greene said he had presumed that colleges would move in similar directions if they were considering the same information, and he was shocked to see how different the approaches turned out to be. And he knew a Covid-19 outbreak was a risk in Colby’s relatively aggressive decision to try to bring all students back to Mayflower Hill.

“That’s one way to think about it, that the only risk is Covid-19,” Greene said. “That’s a risk and a very important one. But there are several risks. Not giving our students a great education is a huge risk. The risk of inequitable treatment of our students. The risk of mental health issues, the strain and stress that many people would be put under if we were not back on campus.”

But he believed then and believes now, he said, that there is a way to manage these risks in a way “that optimizes what is important: keeping people healthy, allowing people to have a great education, and, ultimately, allowing them to have a great experience.”

And one more thing.

In the coming barrage of information, Greene emphasized, the College would have to remain true to its values. Do the right thing by the students, Colby employees, and the greater Waterville community. “The way we carry out our mission, the way we treat people is going to be the most important thing,” he said. “These are going to have to be the values that sustain us through all of this.”

So with the support of the Board of Trustees in April (more on that later), the direction was set.

The management of the myriad moving parts that make up that task actually had begun before students left campus in March as administrators first grappled with the scope of the pandemic crisis. It was uncharted territory for Colby, but the organizational model used in the past kicked in, counting on what Greene calls the College’s hard-wired ability to “get things done.”
First order of business was to appoint Chief Financial Officer and Vice President for Administration Douglas Terp ’84 to manage the effort. Terp, knowing the monumental task and time commitment that was looming, accepted the role only after consulting with his wife. It was a good call. A year later, many on campus could count on one hand the number of days they’d had off since the effort began.

Eventually, the record of Covid-related information would fill an entire bookshelf of binders in Terp’s office. But Terp started things off with a meeting in fourth-floor Eustis, where administrators overseeing health services, student life, risk management, and other areas of the College spent four hours trying to get a grip on this new reality. “We’re walking through it,” Terp recalled. “What is the CDC saying about what happens if someone is infected? What do you do?”

That early discussion led to hundreds more as Colby tried to figure out whether and how to bring students back in the fall. “We had a delivery date,” Terp said. “We needed to be ready [with recommendations] in early June.”

Terp had no direct public health experience, but he had served on local and regional health care organization boards. He hit his virtual Rolodex and started looking for the answer to the question: how do we bring students back while still ensuring the health and safety of the community? “I started making phone calls to health experts, the hospital systems. They started putting me in touch with labs. Who is out there? Who has tests? Can you get them?”

It was a potentially overwhelming directive: can Colby safely bring upward of 2,000 students, 200-plus faculty, and a full staff back to Mayflower Hill? If so, how? If not, why?

But with Greene as gatekeeper and Terp as manager, 10 subcommittees began meeting daily, some attending via Zoom, with an executive committee reporting back. And dozens of people began the process of turning into pandemic experts.

Vice President, General Counsel, and Secretary of the College Richard Uchida ’79 and his staff generated a 10-page document exploring the legal questions involved—and readied to take over contact tracing. Terp’s chief of staff and financial analyst Stephanie Sylvester had previously been a manager for George Washington University’s Department of Epidemiology and Biostatistics, a background that was immediately put to use. “Even just knowing what a PCR machine is,” Sylvester said, referring to one of the key testing processes. “There were microbiologists in our department, so having interacted with those people helped me immensely.”
Facilities fanned out across the campus to measure every single teaching space. Dining Services began to consider how to feed students if dining halls weren’t going to open. Cleaning protocols were considered and developed. And inquiries about the nature of Covid-19 went out across the country.

Information began making its way back to Mayflower Hill from a variety of sources: Colby trustees, operators of hospital chains, public health experts doing risk analysis for investment banks. It was a brave new world, and Colby was plunging in. What did testing actually look like? Where could those tests be processed? Where did one obtain swabs in massive quantities? In the meantime, the pandemic was a presence at home as well.

“Some of the people had children who were now at home and couldn’t go to school,” Terp said, “or had family members who were ill. We look back now and it was crazy. I can remember driving down to Augusta on a Sunday afternoon shortly after the governor’s lockdown orders and we saw two cars. Just two cars on the interstate.”

Amid this rapidly changing landscape, the Board of Trustees, which had been embedded in the process, wholeheartedly supported the Return to Campus Plan at its meeting at the end of June. It was a level of confidence in the administration that other colleges didn’t enjoy during that time, administrators said, and it was part of a chain of trust that allowed Colby to be nimble when the shifting pandemic demanded immediate course adjustments.

In August the College’s plan was submitted to Dr. Nirav Shah, director of the Maine Centers for Disease Control. Uchida remembers it as “a hold-your-breath moment,” but he needn’t have worried.

“We had meetings with a number of colleges and universities in Maine and the meeting with [the Colby group] was by far the one where we came away with the highest degree of confidence that the plan would work,” Shah said. “The plan that the team thought through, presented, and then executed led the nation ... and quickly became the gold standard.”

Colby had small contained outbreaks while other colleges and universities had outbreaks that closed campuses and spilled over into communities. Shah said he initially had concerns that the same could happen at Colby, but the frequent testing, fast turnaround on results, and buy-in from the community eased those concerns.

No huge surprise for those involved.

“Colby as a community is collaborative,” Uchida said. “This would not have worked without the financial support of the College, the students having the right culture, the faculty’s willingness to teach.”

That willingness to not only teach, but to tackle the pandemic’s pedagogical challenges, was made clear at the outset. After the upheaval of the spring semester, faculty jumped right back in, said McFadden, pointing to the more than 50 volunteers who started in with academic planning for the upcoming return back in May.

“Who’s going to teach in person? Who’s going to teach remotely? Who’s going to teach in some hybrid form?” she said. “Collecting that information and talking with people while they made their decisions was a very complicated process.”

Ultimately, the faculty as a body decided to stick with the regular curriculum, adjusting some courses that were difficult to maintain with Covid-19 restrictions. Faculty agreed to lift a restriction that required a letter grade in courses in a student’s major, allowing a satisfactory/unsatisfactory option in acknowledgment of the pandemic’s continued strain. And they made accommodations in their teaching for students who had
to remain remote for health and personal reasons. Department chairs and program directors took on the burden of a stream of pandemic-related obligations.

“It was tremendous leadership from them,” McFadden said. “One of the things I love about this place is that there really is this extraordinary culture of teaching among faculty, and dedication and commitment to it while they’re also committed to being great scholars and creative professionals.

“What we asked of the faculty was amazing, and what they delivered was amazing.”

None of that would have mattered if outbreaks of Covid-19 on campus had outraced the protocols, testing, and quarantine designed to contain them. The national news was punctuated by cases of colleges and universities where just that happened. Greene told parents and arriving students back in August, “Do not let this be Colby.”

But parents could get answers to specific questions and get the general message: “We’re a place that believes in supporting each other,” Burrell-McRae said. “We’re a place that puts the health and safety of our community first.”

She also pointed to the increasing diversity of students’ experiences,
which, she said, contributes to an appreciation of living and studying at Colby. “Collectively, they see the value of the education,” she said. “They see the value of the student interactions. They see the value of partnering with their faculty members. They see the value of being in Waterville.”

But even as they adapted to a pandemic, Colby students knew the success didn’t come easily, and that for many colleges it didn’t come at all. The result was “a newfound Colby pride because Colby has been plastered all over the news as one of the schools that brought back all the students and succeeded in staying open without a ginormous outbreak on campus,” said Sophie Lee ’21.

And that sense of pride, one of the positive outcomes of the pandemic, has been expressed in all corners of the College, from the alumni class notes in this magazine to the president.

“I’m enormously proud,” Greene said. “I’m so proud of our students and the way they’ve treated this. I’m so proud of the faculty, who are teaching in person in numbers that I don’t know is happening at any other college or university in the country. I’m so proud of our staff and the way they approach this with selflessness to make Colby a strong place. I’m so proud of our alums and our families, the way they’ve supported us.

“I’m so proud of our board for their willingness to take a calculated risk. You know, not all boards would have done that.”

The result was an effort that wasn’t a one-off. Shah, at the Maine CDC, pointed to expected innovations that could make testing cheaper and faster and make the Colby model more replicable for other large organizations going into the future. “Every time we do something in public health, we’re generating data,” he said. “When we do it well in controlled environments … that’s science. You may think of that as part of the mission of a college or university, not just to do it for the sake of the students, but to also do it in a manner that adds to the scientific fund on knowledge.”

Greene also pointed to something beyond the sphere of Mayflower Hill that was a benefit of Colby’s pandemic year. “People needed to see someplace succeed at this time. I think we all did. I know I did. We needed to know that while we were in the midst of a war against a virus, we could continue on with the essential elements of our lives.

“Finding places that can really shine at the hardest, toughest moments is one of the things that gives us hope, that beacon that shows people it can be done. We were willing to step out when many others weren’t and say we were going to do everything we could to get our students back.”

Greene said the experience confirmed for him that Colby is a place he wants to stay for a long time. (He subsequently signed a nine-year contract with the College.) “It’s hard to imagine another community quite like this,” he said, “where people pull together and focus on doing the right thing the way we do at Colby. That doesn’t exist everywhere else.

“We found real clarity in the mission and the purpose and the things that matter. If I can hold on to that throughout my life, I’ll be really grateful for it.”
Associate Professor of Economics Samara Gunter took to a spare bedroom with a shop-light tripod and webcam to film her microeconomics lectures, leaving in-class time in expanded sections for discussion of real-world applications. Associate Professor of Chemistry Kevin Rice ’96 and his department colleagues went all in on in-person teaching but halved the number of students in labs so distancing guidelines could be followed.

Associate Professor of Theater and Dance Annie Kloppenberg staged a play with the actors separated throughout by rolling eight-foot-high panes of Plexiglas on Strider Theater’s stage. Associate Professor of Music Jon Hallstrom had students hum rather than sing under their face coverings and taught in a library space that afforded more distance.

“There’s no [piano] keyboard in there,” Hallstrom said, “so I brought in my little keyboard from home. We had some good laughs over that.”

Across campus and from bedrooms and basements, Colby faculty, administrators, and staff threw themselves into their work as they adapted, innovated, and developed new teaching methods and ways of relating to students in order to ensure that 2020-21 would be, yes, the pandemic year, but also memorable for the learning that took place on Mayflower Hill.

In a prescient moment, when President David Greene informed faculty in March 2020 that students would be leaving campus, the news was received by many, not with panic, but with a can-do sort of confidence. “I went up to him afterward, and I said, ‘We’re ready for this,’” said Carol Hurney, director of Colby’s Center for Teaching and Learning. “Faculty are going to shine.”

And they did.

In the two weeks of planning that preceded the remote part of spring semester last year, Hurney and Jason Parkhill, interim chief information officer for Information Technology Services, dove in to set up websites and online office hours. They convened course design institutes that connected faculty at Colby, Bates, and Bowdoin to brainstorm ideas.
When students returned in the fall, faculty rode the momentum of the spring semester into the new year.

With the office of Provost Margaret McFadden working 24-7, the Center for Teaching and Learning, in place since 2017, supporting faculty more than ever before, Information Technology Services in high gear, and faculty themselves stretching to fit their teaching to the pandemic, Colby’s mission to provide a rigorous liberal arts education with the reach of a research university was accomplished. For the spring 2021 semester, 75 percent of classes were fully in person.

Teaching to students whose faces were covered, no small thing for professors who are always watching for facial cues. Dividing intro lecture classes into smaller ones, loading up the teaching time. Facilitating for socially distanced students who found it more difficult to connect for study sessions. Adapting to technology that hadn’t been in their classrooms before. Being aware of the myriad factors that this year sometimes have made the hard work of being a student at Colby even harder.

“We had to show compassion with students who were in tough situations, whether as simple as being stuck in quarantine for contact tracing or mental health issues,” Rice said. “It was trying to navigate that in concert with our built-into-the-DNA desire to teach rigorous courses.”

Doing both often required looking at teaching in new ways, at material from a different angle, at students with a fresh perspective.

Hurney saw professors succeed with technology they would have eschewed in a normal year.

Kloppenberg said she had some students have small-group discussions on Zoom, which they would record and send to her for review. “Sometimes they would say, ‘I’m not really sure what she’s asking here,’ and they would work that out together,” she said. “In terms of ways I’m asking questions and generating assignments, it was a way to be a fly on the wall. It also showed me that they really were able to push the conversation forward in productive ways … even without my prompting.”

For the course the Art of Athletics: Choreography for the Camera, Kloppenberg grouped three roommates together because they were already in close proximity outside of class. Fourteen-foot spaces were outlined with tape on the studio floor to keep dancers distanced. The Plexiglas wall constructed by set technicians worked so well for the spring production of the Pulitzer Prize-winning play Topdog/Underdog that Kloppenberg planned to hold onto it for future use.

“We’re ready for this; faculty are going to shine.”
—Carol Hurney, director, Center for Teaching and Learning
And even separated by face coverings, shields, and distance, a bond was developed.

“One thing that’s struck me about this year is that I’m closer to my students,” Hallstrom said. “I always try to be close to my students, but this year it’s significantly different. We’re all kind of in this together.”

As Hurney observed, courses succeeded because a sense of community was created. “Nothing replaces getting to know your students,” she said. And that meant faculty being transparent in facing challenges, telling students when they were improvising and why. Gunter said she was honest with her economics students, saying, “I am experimenting … and we’re going to see what happens.”

Mostly good things, it turned out. Gunter said the pandemic gave her reason to try different teaching methods that she’d been considering for some time. Working online some of the time moved students from doing a problem set every week to assignments three times a week. There were more writing-based assignments in the intro course. “I think that having to just rip your class apart and put it back together again provided an opportunity to try things that I’d been thinking about for a while,” she said.

And the outcome? Gunter said her students seemed to learn as much or more, though they didn’t always enjoy the virtual process. Rice said senior chemistry majors were being admitted to prestigious graduate programs, as expected.

Hallstrom said using electronic dance music as a learning vehicle engaged students in unexpected ways. Kloppenberg said everything was a bit more time-consuming, a bit more tiring. But the pandemic improv worked in the end.

“Making the best of a terrible situation,” she said with a smile. “In the arts, this is what we do. Constant reinvention.”

Ultimately, there were many silver linings, including faculty who said they felt like they bonded with students who had shared this historic challenge. But the bottom line, as the end of the semester loomed?

Said Kloppenberg, “I can’t wait to see real faces. In real life.”
When they ran for Student Government Association president Ashlee Guevara ’21 and vice president Sam Rosenstein ’21 said they would work to ensure a quality student experience and raise school spirit.

They did, just not in the way they expected.

This was spring 2020, and the pandemic’s spread had closed the campus, forcing the pair, then juniors, to campaign virtually from home. “We assumed this would probably be over by the summer,” Rosenstein said. “Certainly by the fall, we’d be back to normal.”

The new normal, maybe, and Guevara and Rosenstein, after winning the election, threw themselves and the 30 or so student government members into the mission of helping students stay with the plan that would keep them on campus. “We both have immense levels of pride in this community,” Rosenstein said. “Anything that we could do to get the entire student body through this experience, we were up for the challenge.”

With their fellow SGA leaders, they met with the administration and spent the summer considering communications strategies. Key in on potential consequences or community values? What were the areas where students were most likely to push the boundaries? (Capacity limits for informal social gatherings.)

Ultimately, one message resonated: “Remind people that it truly is a privilege to be here,” they said.

One Colby, a slogan proposed by the Student Athlete Advisory Committee, became an ever-present reminder hung on banners across campus. SGA continued to reinforce messaging, including reminding students that they might be young and relatively immune to Covid’s worst effects, but the same could not be said for faculty and staff or members of the Waterville community with whom students might interact.
Guevara said students bought in, but just as important as the message was transparency on the part of the administration. She pointed to the Covid-19 website, where case numbers were updated daily, including the number of students testing positive and in quarantine. “Being honest will get people on your team,” she said. “If we had downplayed the risks of coming back, if we had not been so robust with our testing schedule. … What we really learned is that it has to be everybody in on this, everyone coming together, leading in with transparency.”

That, and a lot of work. With their student colleagues, they organized everything from laser tag to robo soccer, keeping people engaged on campus, which was, after all, where they pretty much had to stay. Both Rosenstein and Guevara credited the SGA team members, who made huge contributions without hesitation all year.

With commencement approaching, their efforts appeared to not have been in vain. Guevara said the pandemic year was in some ways representative of her experience at Colby. “The opportunity to take calculated risks and know that I was going to be supported. … I think that’s when your best ideas come, not when you’re coming from a place of fear, but when you’re coming from a place of knowledge and truth and vulnerability. Sometimes that’s when the biggest payouts happen.”

“We both have immense levels of pride in this community. Anything that we could do to get the entire student body through this experience, we were up for the challenge.” —Sam Rosenstein ’21, Vice president, SGA
Logging onto Mayflower Hill from home doesn’t come close to the experience of a Colby education, students say.

“Being remote last spring made me appreciate the in-person experience at Colby like never before,” said Justin Masella ’21, of Montreal, Canada. “To see people’s faces, even though you have a mask, to be part of a community.”

A varsity football player (whose last game was in 2019) and co-president of the Student Athlete Advisory Council, Masella said he and other student leaders have encouraged their peers to focus on what they have in common rather than their differences.

He was one of the architects of a messaging campaign called One Colby that reinforced the need for students to think of the community as a whole.

The alternative, Masella said, isn’t pretty.

“I have some friends who are remote [at other colleges],” he said. “I’ve had some friends who have been closed on, sent home after two weeks. I have some friends who have been successful in being in person, but they haven’t had this experience. I think Colby is defining how to have the best college experience during this pandemic.”

Masella acknowledges that there had been “bumps and bruises” (a reference to an increase in cases during Jan Plan that resulted in a week-long quarantine to start the second semester), that students were more prepared for the pandemic academically than socially. “For the most part, the discomforts that people felt about having to adapt, people eventually just bought in and trusted the leadership,” Masella said.

A NEED FOR COMMUNITY
said. “Colby students aren’t ones to shy away from a challenge. They just ask themselves, ‘What do I need to do to come out of this successful?’”

Testing three times a week. Every week. Covid-19 cases and close contacts being quickly quarantined at a College-leased hotel. The campus closed to those outside of the testing bubble.

Socializing meant staying within the maximum of 10 people at an indoor gathering, he said. “But the connections I have with my friends or peers are stronger.”

For some students, the pandemic has reinforced the risk of the year going badly. Sierra Verdin ’23, a member of the Pugh Community Board, said some first-generation low-income students feel a disheartening “duality” as they deal with college and Covid-19 while also dealing with what may be stressful situations back home. “And we can’t do anything about any of it,” Verdin said.

In her case, wildfires near her home in California last summer coincided with a death in her family, adding to the stress of the pandemic. “It felt like everything was crumbling from the weight of what was happening back home, even though I was distant from it.”

And yet, students for whom in-person Colby was a refuge may have felt the added stress of knowing that the pandemic could drastically change their situation. “People in the Pugh Center realize the gravity of what’s at stake just by being here,” Verdin said, “because if it gets taken away, then there’s not much else.”

It hasn’t been taken away, and some of the success of the Colby pandemic plan can also be attributed to students’ increasingly sophisticated understanding of the science behind Covid-19. Case in point: Sophie Lee ’21, a biology/biochemistry major who did cancer research last year as a Paul J. Schupf/Memorial Sloan Kettering intern.

Lee knew what Colby was in for when the pandemic loomed. “Pretty non-symptomatic, highly infectious but not super infectious—it’s not like measles, which is very infectious but shows signs very quickly.”

For Lee, that understanding of the virus confirmed that Colby’s intensive testing program was the right one. “Three times a week catches 97-plus percent of the cases, and changing antigen tests for students to Friday makes perfect sense. You can go into the weekend knowing, okay, I’m fine.”
Brooke Niemiec ‘23 fields a ground ball at second base in a nonconference game vs. Thomas College March 27. The Mules were among the teams participating in a 2021 NESCAC season, more than a year after the pandemic halted sports on Mayflower Hill.
Tommy McGee ‘21 and his teammates prepared like there was going to be a 2021 baseball season. In the weight room. In the batting cage. On the field. So when Coach Jesse Woods broke the long-awaited news in March that there would be 2021 NESCAC competition amid the pandemic, the group broke out in applause—and confident smiles.

“It’s not like we were caught off guard,” McGee said. “We were definitely ready.”

And then some, as the team beat St. Joseph’s and Thomas College in the run-up to a historic shutout win over 11th-ranked University of Southern Maine and the opening of NESCAC play. “That was awesome,” McGee said. “We’ve been waiting so long.”

Colby athletes took the long view this year, turning Covid-19 into a motivator, adhering to protocols, scrimmaging each other, sticking to the program in the weight room, keeping their goals top of mind.

“We were able to use that as a way to say, whatever we can do to make sure we’re being safe and keeping everyone else on campus safe,” said Adaobi Nebuwa ‘24, a first-year forward for women’s basketball. “It was just being teammates to the wider campus, just being the best people we can be.”

Nebuwa’s first Colby season was four games long, but women’s basketball notched a decisive win against NESCAC rival Bates. Women’s hockey logged two games, including an overtime win against the University of Southern Maine—the first-ever victory in the O’Neil O’Donnell Forum on the Jack Kelly Rink in the recently opened Harold Alfond Athletics and Recreation Center (HAARC).

For seniors like Aimely Michaud-Nolan ‘21, it was a chance to get on the ice in a real game for the first time in a year, but also an abrupt conclusion to hockey careers that began when they were in preschool.

“It was really emotional because it was sad to think that my hockey career had ended,” said Michaud-Nolan, who saw two remaining games canceled. “But I was also very thankful. … I was thinking that if the worst thing that’s going to happen to me during a pandemic is my hockey season being canceled, I came out of it pretty okay.”

Her team practiced six days a week. The run-up to the possible spring NESCAC season (it would ultimately not happen) saw the campus humming with athletic activity every day. The mantra was not only to be ready, but take this opportunity to be more ready than you’ve ever been—and maybe more ready than your opponents.

Swimmer John Connors ’22 said he worked out with weights at home in Pennsylvania over the summer, and when he returned to campus last fall he had to adapt to a training program that had a different feel. “We had to make it different because there were no meets, and it’s kind of hard mentally to train if there’s nothing to race against,” Connors said.

So the team focused more on lifting than in past seasons, he said, which will have carryover to next season. They competed virtually, and when the men’s team was able to have a meet against the University of Maine, coaches carefully managed the intensity so the Mules would peak for their inaugural—and only—event in the Olympic-sized pool in the HAARC.

With a small number of fans in the stands, the Colby men’s team defeated the D-I UMaine Black Bears, with personal bests for the Mules throughout (Connors won the 200- and 100-freestyle events).

“I guess they were practice times, but we destroyed those,” he said.

Connors said he plans to pick up the weights again this summer, and he hopes to be able to swim with his club team—pandemic permitting. The reward for “staying mellow” (as some athletes put it) this year was a year on Mayflower Hill with teammates and, for some, competing for the first and last times.

More successes will come next season, when teams will be able to bond without boundaries, train with games and meets ahead of them, and return to full competition.

“I’m very, very excited,” said Nebuwa. “What was so special about those games was that we really got to see a glimpse of how great this team is and how great this team can be. We’re getting new recruits in, which means younger people who are just hungry, which I really like.”

So even amid the pandemic, the future looks promising. “I’m looking forward to working with them,” she said, “and trying to make this a championship-winning team.”
Successfully navigating a pandemic was only part of the job.

President David A. Greene points to the ongoing crisis in higher education, with a shrinking pool of students putting the squeeze on colleges and universities. When the pandemic ends, those challenges will remain.

“We have to do more than simply be great at Covid,” he said in the spring of 2020. “We need to use this year to really be able to push ahead major initiatives, to be thinking about our future, and to have our head up all the time.”

Almost a year later, it’s clear that Colby did keep its head up, and the major initiatives kept moving forward. And then some.

In addition to coping with Covid-19, the College stuck to the plan: continue to move on initiatives that ensure Colby is widely recognized as a prestigious liberal arts college with the innovation and reach of a major research university, and that the student experience is integrated and opportunity-rich.

In August the Colby-owned Lockwood Hotel opened on Main Street for the arrival of students, its role shifting temporarily to meet the need for housing during the pandemic year. Seven months later, the hotel’s flagship restaurant, Front & Main, opened to the public.

Last fall, after the College worked intensively to prepare for students’ arrival, work began to prepare the site for the Gordon Center for Creative and Performing Arts, a key venue in Colby’s broad plan to create an “arts ecosystem” with the Colby College Museum of Art, and, on Main Street downtown, the Paul J. Schupf Art Center (construction began in April) and the arts collaborative (opened in April). It’s all part of a multipronged effort to make the arts a more central component of the student experience and to make Waterville an arts destination.

In October the 350,000-square-foot Harold Alfond Athletics and Recreation Center opened on time, reaffirming Colby’s commitment to excellence in athletics and to the health and well-being of the entire community. Students, faculty, and staff—wearing face coverings where appropriate and physically distanced—immediately began using the center.

In January Colby announced the Davis Institute for Artificial Intelligence, the first such undertaking of its kind at a liberal arts college. The institute will provide new pathways for talented students and faculty to research, create, and apply AI and machine learning across disciplines, all part of the ongoing strengthening of the academic program to address the world’s challenges.

In addition, in May 2020, the College launched an “Inequality Lab” to provide a multidisciplinary approach to scholarship, teaching, learning, and community engagement, a move that
will ultimately create many courses on inequality and research that will illuminate causes and solutions around this societal challenge. In March of this year, a new concentration was added in literature and environment to the English major to focus on the intersection of social justice and environmental change.

And, in spite of the pandemic, which had some colleges and universities straining to fill their ranks, applications for the Class of 2025 totaled nearly 16,000, a 13-percent increase from last year’s record. The enrolling class is the strongest ever in terms of academic qualifications and diversity, driven by programs like the Colby Commitment, the Fair Shot Fund, and the Pulver Science Scholars Program.

In a year when the College rallied to give students in-person learning and experiences, Colby’s financial supporters also answered the call.

From March 1, 2020, to March 31, 2021, more than 9,000 donors made gifts to the College totaling $86 million—including more than 8,700 donors to the Colby Fund. Momentum driven by the collective Colby community continued across all areas, from the arts to the sciences to humanistic inquiry. Donors propelled forward Dare Northward campaign initiatives, including endowments ranging from financial aid to public policy, the Gordon Center for Creative and Performing Arts, the Harold Alfond Athletics and Recreation Center, the Davis Institute for Artificial Intelligence, and much more.

In 2019-20, a year marked by the onset of Covid-19, the Dare Northward campaign still surpassed $550 million, with 21,000 donors and counting, positioning Colby within reach of its $750-million goal and ever closer to securing Colby’s unique place among top liberal arts colleges in the nation.

“This was not a moment to pause and sit back,” Greene said. “This was a moment to really see the landscape in front of us and make the most of it. And that’s when we’re at our best. That is what we do.”

WE HAVE TO DO MORE THAN SIMPLY BE GREAT AT COVID. WE NEED TO USE THIS YEAR TO REALLY BE ABLE TO PUSH AHEAD MAJOR INITIATIVES, TO BE THINKING ABOUT OUR FUTURE, AND TO HAVE OUR HEAD UP ALL THE TIME.”

—President David A. Greene March 2020

The Class of 2020 needed help.

As the Covid-19 pandemic ground the economy to a halt, student after student came to DavisConnects with the same question: What am I going to do now?

“When we sent students home for the spring semester March 12, 2020, there was this stunning moment where we realized: This is real,” said then-Vice President and Dean of Student Advancement Andy McGadney. “There are two modes of how to respond to a crisis. You can retreat, or you can double down. So we doubled down. We asked ourselves, ‘How can we help our seniors?’”

The stakes couldn’t have been higher. Some 66 percent of wage growth happens in the first 10 years of a career. Graduating during a recession reverberates throughout a person’s life, resulting in overall lower earning potential.

On April 15, the team quickly sent out a survey to graduating seniors to find out more. Of the 500 members of the class, 200 said they were all set. That left 300.

President David Greene made a bold bet: opportunities for every graduate. “We have 300 seniors who need to acquire a meaningful job, fellowship, or substantive experience that will launch them into the kind of purposeful work that has long been the hallmark of Colby alumni,” he wrote in a May 6 email to the Colby community. “And here is the good news: We have 30,000 alumni, parents, guardians, and friends who stand together as the Colby community. Can the 30,000 of us pay it forward for these 300 students? I know we can.”

Pay It Northward was born.

As the pandemic spread, more than a thousand in the Colby community stepped up, supplying DavisConnects with more than 700 job listings, volunteer opportunities, and words of encouragement and
advice. “We had to quickly figure out how to operationalize all this,” said Director of Employer Engagement and Entrepreneurship Lisa Noble. “We got a flood of responses in a short period of time, and we knew we had to jump on it.”

They did, and it worked: Radhika Vu Thanh Vy ’20 and Kevin Muñoz ’20 joined tech security firm IDmission. Hayley Gibson ’20 landed her dream pre-med gap year job at Falmouth Women’s Health. Lexi Hanus ’20 launched her career in e-commerce for marketing agency Compass. Hundreds of students started their careers as the result of Pay It Northward.

“Our team worked tirelessly on this, putting in countless hours over only a few weeks,” said McGadney. “We put so much pressure on ourselves, but we wanted the students to know we were there to help. It was so incredible to see it all come together.”

With 95 percent of the Class of 2020 now employed in jobs and internships, participating in fellowships, or pursuing graduate school, the DavisConnects team has turned its attention to the Class of 2021—Pay It Northward 2.0.

Ultimately, what made Pay It Northward so successful was the students themselves. “The fact of the matter is, I can put any Colby student in front of an employer, and I know they’re ready. They’re smart, humble, articulate, and they learn incredibly quickly. It makes my job easy,” said Noble.

“I feel hopeful for 2021. Businesses are bouncing back. The employers we’re talking to are incredibly optimistic about their ability to take on entry-level talent, and they want to hire Colby students.”

“Hiring top talent involves looking for three things: a willingness to learn, the ability to communicate well, and confidence to ask questions. And Colby teaches its students all of those things.”

—Ashim Banerjee P’21, CEO, IDMission
Uzoma “Zo” Orchingwa ‘14 cofounded a nonprofit, Ameelio, that supports the flow of information and correspondence between incarcerated people and their loved ones on the outside—all for free.

In jails and prisons, everything costs more. A single phone call? Up to $25. Video calls? About $1 per minute. An email? As much as a dollar.

It’s a huge problem. But now there’s a solution, and it’s taking hold across the country.

“Charging families exorbitant fees to stay connected to a loved one who is incarcerated is immoral, impractical, and irrational.”

—Uzoma “Zo” Orchingwa ’14

Visit Colby Magazine online to read about Orchingwa’s journey to launch Ameelio.
Provost Margaret McFadden discusses the new Davis Institute for Artificial Intelligence and how the liberal arts can shape the future of AI.

What do you hope the Davis Institute will accomplish at Colby?

One of my colleagues said something that I thought was spot-on, which is that we want this institute to bring AI (artificial intelligence) to other fields across the curriculum and also want to bring other fields to AI.

We’re thinking about how AI tools can advance faculty teaching and scholarship in really beneficial ways. We can help people build or learn to use these new tools that may allow them to ask and answer new kinds of research questions or teach in new ways. We want to make sure students have a strong grounding in this field that is transforming our society, as they work with faculty. And we’re thinking about the ways that access to AI tools, and understanding of all the social and ethical impacts of these tools, will enable students to be prepared to go out into the world to solve problems, to raise essential ethical and social questions, and to envision ways to use these tools to bring a more just and equitable world into being. And we hope that as we figure...
all this out, we will be able to share our knowledge with faculty and students from other liberal arts colleges.

- How, then, do the liberal arts fit into this technology?

What we have at Colby is expertise in all the different disciplines, in the breadth of the liberal arts. AI raises so many questions about what it means to be human. It also raises enormous social and ethical and philosophical questions, and many fields have a lot to say about the issues that surround the use of AI technologies. We want to be sure our students have the technological skills they need, but also that they are learning to think about technology in varied contexts, using the interdisciplinary critical thinking skills that come from a broad and deep liberal arts education.

- So not only computer scientists have a vested interest in the institute?

I just came off a call with the search committee for the founding director, and we had faculty committee members from English and philosophy and sociology and psychology and biology there with computer scientists. I think that’s really what’s exciting about this model—the diversity of places where AI could really be beneficial to research, teaching, and students’ education.

- Can you give me an example?

Megan Cook (associate professor of English) was talking about English professors and their interest in natural language processing, the ways computers work with language. But she also talked about the ways that people in many humanities disciplines, including English, are somewhere between wanting to adopt these tools … and being very concerned about the way AI has rolled out thus far. So it’s remarkable that in literary studies you can train a machine to read thousands of books that you couldn’t possibly ever read yourself. Imagine what we might learn from that. And then imagine doing that work at the same time you’re analyzing and critiquing those tools and making sure that your students understand both the uses and potential misuses of the tools in context.

- How would such a dataset be acquired?

Yes, it’s a great question, and I think the institute is exactly the place to enable this kind of work. So maybe you’re a faculty member and what you need to do is come to the institute and learn how to use these tools of textual analysis. Or maybe what you need is the institute to help you acquire a dataset of all the texts you want to analyze with machine learning. Or maybe the institute is the place where you can come together with colleagues with similar or related interests.

- Together in what way?

I will say the thing that was most remarkable to me, and it’s one of the things I love most about Colby, is every single person from the faculty who is talking about this initiative was excited about the possibilities of collaboration across disciplines. For example, Veronica Romero (assistant professor of psychology) works with children with

Questions of ethics have got to be at the heart of this institute, in a really fundamental way. And I think if we build that at the center, we will build something spectacular. Because computer scientists care about that just as much as philosophers or American studies professors or sociologists or biologists. Everybody has that in mind.
autism. And she’s interested in the way children with autism speak. Could you use an AI tool to understand whether somebody had autism on the basis of the way they speak, as compared to other people who don’t have autism? So is there a place where Megan Cook’s interest in language and Vera Romero’s interest in language could come together in some productive and exciting way?

- Colby is known for collaborative work, but does this have potential as we’ve never seen before?

Absolutely. It’s so exciting to think about the possibilities here because we’re building something completely new. We do have this culture of cross-disciplinary work and strong interdisciplinary programs that have built up over decades—it’s pretty much in the DNA of the place. But I also think we’re starting to imagine whole new ways that people can collaborate.

- What about students?

I think we all understand that artificial intelligence is transforming every aspect of society, and often in ways that are completely invisible to us. So, I think it’s essential, if we’re going to provide an exceptional liberal arts education, that we make sure that our students understand this incredibly powerful and potent set of tools. And understand the field. Because they’re going to be people who are using these tools. They’re going to be people who are in leadership roles. They’re going to be people who are making decisions about how to solve problems.

Does everybody need to be an engineer? No. But does everybody need to understand conceptually what’s going on and what its implications are? I think absolutely.

- So how and where will students encounter AI in their classes?

My view is it will grow up organically, and it will emerge in the curriculum in ways that make sense. And it doesn’t necessarily need to be part of every single department or program. But we want to make sure that students, as they sample through the curriculum, encounter these topics, whether it’s an ethical or social or philosophical question, or making art with AI, or analyzing financial data with AI, or doing medical research with AI, or doing research on warming oceans with AI.

What will be clear is AI won’t just be in the places where it will be obvious—computer science and data science, statistics, mathematics, some of the more quantitative fields. I think AI will emerge as important in fields that are much more humanistic and qualitative as well.

- As an American studies professor, how might you bring AI into your classroom?

My area of study is popular culture and media studies. My work has always had a focus on the impact of mass media on our culture. I think a lot, for example, about the ways that social media algorithms can have enormously powerful and terribly unjust impacts on different groups of people. Think of the obvious examples of racially biased algorithms, or the misuse of facial recognition software to surveil or police people, or deep fake videos that
misrepresent reality very convincingly. And there are important questions about privacy, about who owns or has access to data about us and what they are doing with it. I would want to engage students on all these questions and help them imagine how we might create alternative uses for these technologies that would help bring a more just, inclusive, and equitable world into being.

Is there any unifying thread that ties all of these ideas, these scholars, together?

Questions of ethics have got to be at the heart of this institute, in a really fundamental way. I’m so pleased to see that, in the conversations that I’ve been a part of with faculty, that is very much on people’s minds. And I think if we build that at the center, we will build something spectacular. Because computer scientists care about that just as much as philosophers or American studies professors or sociologists or biologists. Everybody has that in mind.

That’s one common denominator of being human, isn’t it?

Yes. And here we are with an institute that’s going to be asking all these questions. What does it mean to be human? What does it mean to think? What is the difference between us and animals, the human and the artificial, the natural and the artificial? Those kinds of questions are going to be raised by the work done in this institute.

By a lot of different people.

With a lot of different perspectives. That gets to the question of who’s doing this work. Diverse teams are documented to be more effective than homogeneous teams. What I love about the way this is unfolding, is that the real collaborative spirit that I think animates so much of the work at Colby is at the heart of this, and that collaborative spirit is partly about getting a lot of different perspectives and voices in the room.

What’s it like being a nexus at such a transformative time for the College?

It’s incredibly wonderful and exciting. The initiatives at the College right now that have huge energy—the arts, the Davis Institute, the Colby Labs, environmental humanities, and many others that are developing—are really transforming the experience of our students in profoundly important ways, and so much for the better. The faculty are doing such incredible work to build these programs, these structures. We already had an exceptional faculty providing an exceptional education. And so, these new initiatives are just building on areas of strength or opening up new areas of study that enable our faculty to keep growing, that enable our students to have opportunities that I think are going to be unmatched in many of our peer institutions.

I’m just so proud to be part of that and so proud of our faculty for their creativity and brilliance and willingness to build something new. It’s really inspiring to see. For me, just to be able to be part of helping to create the conditions for that is actually a huge honor and privilege. And I just love doing it.

What we have at Colby is expertise in all the different disciplines, in the breadth of the liberal arts. AI raises so many questions about what it means to be human. We want to be sure our students have the technological skills they need, but also that they are learning to think about technology in varied contexts, using the interdisciplinary critical thinking skills that come from a broad and deep liberal arts education.
We live in a chemical world, exposing ourselves all day long to scary toxins created in laboratories—to the traces of herbicide that lurk in our water, to the carcinogenic Teflon coating our cookware, and to the pesticides sprayed on our vegetables.

To most of us, the poisons populating our everyday lives are but grim background music. They’re beyond our complete understanding, and so we write them off as the price we must pay for living in a scientifically advanced world.

To Colby Assistant Professor of Environmental Studies Gail Carlson, however, the threat posed by these toxins is as clear as white chalk on a blackboard. For Carlson, it’s a call to action.

And so eight years ago, when her son, Soren, then 12, joined the Central Maine Ski Club and began racing, Carlson issued a stern maternal dictate. “You will not set foot in the team wax shed,” she pronounced.

Carlson knew something about the wax that snow-sports enthusiasts—
Nordic and alpine skiers, ski jumpers, and snowboarders—have since the mid-eighties hot-ironed into the bases of their skis and boards when they want to go really, really fast. She was aware that fluorinated wax contains per- and polyfluoroalkyl substances, or PFAS—the same type of deadly synthetic chemicals that the manufacturing giant DuPont put into Teflon in the 1990s—causing widespread cancer, birth defects, and kidney damage in West Virginia and inspiring the blockbuster movie Dark Waters (2019), starring Mark Ruffalo.

There are roughly 4,700 different PFA chemicals, and their party trick is that they make things super slick. Thanks to their constituent fluorine, which forms a tight, water-repellent bond with carbon, PFAS enable frying pans to wick water and grease, make raincoats impermeable, and also make skis glide quickly over wet snow. PFAS are “forever chemicals,” though. They’re almost impervious to breakdown, and they’re inclined to worm their way into the tissues of humans and animals.

Soren Nyhus eschewed his team’s wax room right up until the end of his high school racing career in 2018. Still, his mom worried about the frequent use of fluorinated wax at Quarry Road Trails in Waterville, where both Soren’s club and Colby Nordic ski teams race and train. Carlson is, after all, a casual cross-country skier who’s written eloquently about the “restorative dose of nature” she gets each time she visits Quarry Road. She wondered: How prevalent are the fluorocarbons in the snow there? How badly do they persist in the soil in springtime?

In a paper published in the December 2020 issue of the academic journal Chemosphere, Carlson addresses these very questions. With the help of her coauthor, Nordic ski racer and environmental studies major Skylar Tupper ’20, she took samples of Quarry Road snow just hours after the Colby Carnival brought 163 college racers to the trail system last January. And chemical analysis found that, near the race’s starting line, where skiers anxiously shuffle their skis back and forth over the snow, waiting to launch, there was “extremely high contamination”—indeed, a concentration of fluorocarbon unseen by the handful of Norwegian and Swedish scientists who’d studied ski wax toxins prior to Carlson (but hadn’t focused on the start). Continued sampling in the spring revealed that fluorocarbons were in the soil, and it was present in the groundwater, too, at 34.65 parts per trillion, below the Environmental Protection Tracey Cote, head coach for Nordic Skiing, met with Gail Carlson, right, to take snow samples at Quarry Road Recreation Center in March.
Agency’s nonbinding health advisory standard for three widely prevalent PFAS but still alarming.

Carlson’s startling findings come amid a widespread awakening. Over the past two or three years, numerous news stories have zeroed in on the dangers of fluorinated ski wax. Now, with scientific papers like Carlson’s amplifying the alarm, fluoro is suddenly vanishing from elite snow-sports competitions. Effective next season, the wax will be verboten at all World Cup races hosted by the International Ski Federation. The Eastern Intercollegiate Ski Association, Colby’s league, outlawed fluoro in July 2020, inducing a near-seismic shift for the Colby Nordic squad. As Carlson sees it, skiing’s abrupt about-face represents genuine progress. Since arriving at Colby from the snowy plains of Wisconsin and Minnesota in 2004, she has prioritized “using science to make a difference.” Her signature course offerings include Environmental Activism and Global Public Health, and regularly she brings her activist students into the Maine state legislature to testify on bills related to the environment.

In 2008 Carlson’s charges successfully championed the “rubber duck bill,” which put in place a safer chemicals policy that allowed Maine to regulate toxic chemicals in children’s products. Later, Maine used that law to ban BPA. In 2017 Carlson advised her students as they helped pass a Maine bill that made it illegal for furniture shops to sell upholstery bearing another endocrine disruptor, brominated flame retardants. Last year Carlson’s “Environment and Human Health” class helped convince Maine lawmakers to curtail the use of PFAS, the ugly ski wax ingredient, in food packaging.

Carlson personally testified at each of these hearings, and she’s become, over the past dozen years, a “true environmental hero,” according to Mike Belliveau, the executive director for the Portland-based Environmental Health Strategy Center, for which Carlson served as a board member. “When she testifies in Augusta, she’s calm. She’s credible, and the legislators listen.”

All told, Carlson has helped Belliveau’s group pass a dozen laws in Maine, and some of them—among them, the rubber duck bill and the one curbing PFA use in food packaging—have been copied in other states. Belliveau recalls with relish how Carlson crushed chemical industry lobbyists in a legislative discussion of the latter bill. “She simply delivered the scientific evidence without hyperbole,” he said.
And with an equally determined and informed group of Colby environmental students. In fact, Carlson's greatest gift to Maine politics is probably her entourage. “It’s not typical for young people to testify in the legislature here,” said Emmie Theberge ’08, federal director at the Natural Resources Council of Maine. “And the legislators all know that environmental policy impacts future generations. When Gail’s students speak, everyone tunes in.”

Back when she was a Ph.D. candidate at the University of Wisconsin in the early nineties, Carlson didn’t seem destined to be a political force. She studied biochemistry, focusing her thesis on a tiny one-celled organism, the paramecium. “I thought I was going to find the cure for cancer,” she says, wryly, “but of course that never happened, and I began to feel as though scientific research wasn’t that compelling to me.”

Carlson taught college chemistry briefly, though, in Minnesota, but she began contemplating a career change in 1995, when her husband, Professor of Environmental Studies Philip Nyhus, embarked on a yearlong study of Sumatran tigers in Indonesia. As she bumped through the jungle on the back of a motorcycle, Carlson reflected on how she had protested as a college student, demanding that her school, St. Olaf, divest from South Africa’s apartheid regime. She remembered how she’d written careful letters to the editor on topics ranging from gendered language to profligate lawn watering during a Midwestern drought.

Soon after, Carlson came to Colby with Nyhus in 1999, and she found her new academic voice, designing and teaching, as an adjunct, a class called Women and the Environment. It was about “how women are affected by toxic chemicals, and about women activists and women writers. I realized, ‘This is what I want to be doing,’” she remembers.

Today, Carlson both teaches and runs the Buck Lab for Climate and Environment. She draws inspiration from Rachel Carson, author of the groundbreaking 1962 book *Silent Spring*, on pesticide contamination, and Sandra Steingraber, a poet and ecologist whose 2011 book, *Raising Elijah: Protecting Children in an Age of Environmental Crisis*, informed Carlson’s parental wax policy and also points toward Carlson’s feminist outlook. “I’m a biochemist first,” she said, “but I’ve seen, teaching, that so much of the important work in environmental studies has been done by women. They’re typically the ones making decisions about children’s health; they’re the ones seeing firsthand the effect of toxic chemicals.”

Because the docket for the Maine legislature only becomes clear a few weeks before its annual spring session, Carlson doesn’t know precisely what her next campaign will be. But she knows that she’ll keep her sights on hazardous wax. Nordic racers everywhere still have large caches of fluoro malingering in their wax kits, and despite the ban ski shops are still selling the stuff. There’s little doubt that a few cheaters will fluoro up this winter, and unwitting recreational skiers will surely be bamboozled into buying the stuff.

Meanwhile, of course, the old fluoro remains in the soil at Quarry Road—just as it does at myriad other cross-country ski spots worldwide. “If we go back and test over, say, a 10-year time frame,” Carlson said, “we can see if ski racers are complying with the new regulations. We can look at our first test as a worst-case baseline, and we can look at how PFAS break down in the soil and water. They won’t go away from the world—they’ll get blown toward the Arctic, on the wind; they’ll get into the water—but they could become less present at Quarry Road. And they could, over many years, break down in the soil.

“There’s still a lot we don’t know about PFAS,” Carlson said. “That’s why we need to keep paying attention.”

Carlson has helped Portland-based Environmental Health Strategy Center’s executive director Mike Belliveau’s group pass a dozen laws in Maine, and some of them—among them, the rubber duck bill and the one curbing PFA use in food packaging—have been copied in other states. Belliveau recalls with relish how Carlson crushed chemical industry lobbyists in a legislative discussion of the latter bill.

“She simply delivered the scientific evidence without hyperbole,” he said.
AN INVISIBLE MENTAL TRAP

Jin Goh unearths people’s perceptions of sexual harassment victims—and the consequences of those mental images

By Kardelen Koldas ’15
If you had colored pencils and a piece of paper in front of you, how would you imagine and draw a woman whose male boss accidentally bumped into her? What about a woman groped by her male supervisor? Would the two women look alike?

You might think so, but Assistant Professor of Psychology Jin Goh’s research found otherwise.

“You can really see the differences in how people actually drew,” said Goh, whose most recent paper used this method—rarely employed in psychology—to uncover people’s mental images of sexual harassment targets.

This experiment was the first of 11 studies carried out by Goh and his coauthors for their article accepted to the Journal of Personality and Social Psychology. The studies, divided into three sets, examined how more than 4,000 participants (either in person or online) imagined and perceived sexual harassment targets and their experiences in a series of scenarios. The researchers’ findings came with implications for harassment reporting and litigation.

Types of sexual harassment in this study, as defined by most psychologists, were sexual coercion (like promising rewards in the workplace for sexual favors), unwanted sexual attention (such as sexual assault), and gender harassment (sexual insults, for example).

The use of this broad definition of sexual harassment was intentional.

“We wanted to see that our theory is not limited to just one form of sexual harassment, that … it’s pervasive,” Goh said. And across all studies, scholars found that people are more likely to see prototypical women—with feminine features, interests, and characteristics—as victimized compared to non-prototypical women, even when the women experienced the exact same situation. “Being able to show this actually in different contexts allows us to make such a generalization.”

To arrive at that generalization, the first series of tests, including the drawing task, aimed to understand how people visualized victims of sexual harassment. The results revealed that people are more inclined to think of victims as prototypical women.

But this wasn’t true, Goh stressed. In fact, sexual harassment targets non-prototypical women more than prototypical women.

Because we have this mental representation that we tend to connect sexual harassment with a prototypical woman, we miss out on non-prototypical women as a result.”

Female CEOs or women in other non-traditional career paths, for instance, get harassed more than those in traditionally feminine careers, Goh noted, because they are seen as breaking traditional gender roles.

“A lot of the time, sexual harassment is not even about sexual attraction, it’s not even about sex or attractiveness,” he said. “It’s about punishment” for not conforming to gender roles in society.

In one study, researchers used a perceptual task called reverse correlation, allowing them to visualize people’s mental images. Participants completed 500 trials of reverse correlation, and in each trial, they compared two images, selecting the one that they thought looked more like a sexual harassment victim. Reflecting these selections onto the base image, the researchers came up with an image of a sexual harassment victim. The unselected ones produced the image of an anti-sexual harassment victim. The researchers came up with an image of a sexual harassment victim. The unselected ones produced the image of an anti-sexual harassment victim. Then, another group of participants rated how prototypical the women from these composite images looked.

“A lot of the time, sexual harassment is not even about sexual attraction; it’s not even about sex or attractiveness. It’s about punishment.”

—Assistant Professor of Psychology Jin Goh
Throughout, participants perceived sexual harassment victims to be more prototypical than non-prototypical.

That’s where the second and third sets of studies gained importance, as they sought to expose the consequences arising from these kinds of mental representations.

The second series tested whether people are more likely to believe a prototypical or non-prototypical woman when they experience the same ambiguous situation, e.g., a supervisor putting his hand on a woman’s waist or a principal asking a woman about her dating life. In the same scenarios, participants were less likely to believe non-prototypical women than prototypical women.

In the third series of studies, the paper looked at the civil rights and workplace implications of the earlier findings. Examining how participants viewed the severity of psychological harm that prototypical versus non-prototypical women endured from sexual harassment, the researchers found that people believed non-prototypical women were less psychologically harmed and also saw them as less credible than prototypical women.

To Goh, this was unexpected.

“I would imagine that people would think being sexually harassed would be seen uniformly as harmful and traumatizing,” he said, adding how concerning this was to him. “But somehow, we think a certain type of woman would be more harmed by sexual harassment than others.”

“Despite having the exact same experiences, people consistently think that prototypical women are more believable, more credible, and more psychologically harmed than non-prototypical women.”

—Assistant Professor of Psychology Jin Goh

And these perceptions have serious ramifications for women. If a non-prototypical woman is harassed at work, for example, her case might not be taken up or be successful, Goh said.

Did the gender of the participants make a difference in their perception of victims of sexual harassment? Surprisingly, no. But that’s consistent with a lot of psychology studies, Goh explained, because prototypes are beliefs shared within the same society.

“We have knowledge of various different stereotypes about men and women because we learn them early and are continuously being taught and reinforced in our society,” he said. “People think similarly about how people behave or how they should behave.”

Prototypes are mental shortcuts that make our daily lives easier but come with a price, as teased out by this study. “These mental shortcuts basically are hard to break,” he said; change requires a lot of mental effort, continuous training, and conscious decision-making.

Those are essential for people in positions, such as Title IX and human resources officers, evaluating sexual harassment claims. “They are the ones making the decisions; if they are biased against women—a certain type of women—then the system itself is flawed,” he said. “The burden should not be placed on the victim and survivors of sexual harassment.”
From a moss-covered stone on the forest floor, I stare down at the bigtooth aspen tree. Yes, I stare down at it, for here among the leaf litter, the tree has transformed itself into piles and piles of bright yellow confetti.

Thousands of round serrated leaves—most the size of a palm, some smaller, and some the size of a whole hand—lay still over the beech, oak, and maple leaves below them. Their curling edges look as if carved by hand. A few of these edges catch the wind so that the leaves tumble, then lift. The confetti spreads even farther.

I pick up one leaf, one of nearly 30,000, to smell it. On the surface, my nose finds nothing. Upon tearing the leaf, however, a faint, earthy smell emerges, damp in contrast to the crumpling dryness of the leaf itself and slightly bitter, like steeping green tea. I tear another leaf, this one darker than the first. It’s probably been apart from the treetop for a few weeks longer; it smells muskier, heftier, like the deep, familiar scent of autumnal decay. There must be a word for this aroma, though I am not sure my language has found it yet.

I’ve come here, to the Perkins Arboretum in Waterville, Maine, to learn about the connections between literature and trees. By extension, I’ve come to learn about language, the words and stories people tell about trees, and the understandings we gather through them.

Trees are entwined in the oldest of human storytelling—think of the apple in Adam and Eve or the Yggdrasil ash of ancient Norse tales—and continue to branch through books, plays, and poems to this day. In some cases, communication itself is influenced by the forking growth of forests; the Ogham alphabet of Early and Old Irish, for example, was thought to have derived its letters from the names and figures of certain trees.

Trees, too, often stand for much more than themselves in writing—indeed, humans rely on trees as signifiers of memory and healing, of transgression, of political and racial unrest. Tracking the ways trees have been represented in literature can tell us how people relate to the more-than-human world across vast swaths of time and distance. In turn, investigating how these relationships persist may afford us a better idea of the future in this beautiful and damaged world.

A leaf falls; I track its fluttering backward up the air. Before my eyes make it a meter from the ground, however, my gaze stops at the aspen’s trunk. I stand and approach it, admittedly not for the first time.
I’ve walked this path before, in August, when the forest was green and thrumming with cicada buzz and cricket whirr; in September, on the first cool autumn nights when the black silhouettes of traveling birds unseparated from the sky; and now, in October, as the yellow leaves fall and crunch while I walk toward the trunk. I press my nose to it. No smell. I scratch it; still no smell, but my fingertip meets a reticulum of lichen lacing over the bark. This lichen feels soft, almost spongy, as it spreads like an aquamarine patina across the folds and furrows of lavender-grey wood.

I’ve learned that smell is one way to become acquainted with trees. One way of many; to truly read trees requires most, if not all the senses. It also requires attention to details. Form, structure, movement, and voice all contribute to our understanding of the forest. Reading trees, in fact, is not unlike reading books. Both can be sensuous; both demand notice of scene and dialogue, of quirks and particulars and even intentions.

At this point, my cheek and chin are against the trunk, trying to hear or feel the tree speak. In between trunk and crown, minuscule cells hum and carry the tiniest hisses of water up 70 feet of tree.

And below me?

Fungi stretch and connect root to root in a nutrient-gathering network of purpose. As I strain to hear these sounds at the edge of perception, perhaps in vain, something vibrates and whispers through a crack in the bark.

Following the sound, I tilt my head upward, stretching my vision some 70 feet into the sky to where the last leafy rustles trickle down with the morning light. At the lowest registers of wind, the forest here sounds the way a shiver feels.

When the breeze picks up, I hear a thousand fishtails all paddling, ruddering, and trembling at the surface of a treacherous sea. The bark at the tree’s crown, visible through the paucity of attached leaves, is cream-colored. To the touch, it must recall the smooth resistance of wax paper.

The very top of the tree is an explosion of branches. This complex of twigs and shoots reminds me of so-called knowledge trees—arboreal diagrams

---

Figures A, B, and C: Leaves fallen from an Aspen tree, Oct. 2, 7, 12, 2020
Figures D, E, and F: Leaves fallen from an Aspen tree, Oct. 17, 19, 29, 2020
that attempt to show links between languages, families, or categories of living beings.

I think about how trees facilitate the scientist’s desire to organize, how they enable the writer’s longing to draw connections. I think too about the way people have abused the thought-like branching of trees to place humans in the canopy of evolution. Life is less like a neat and trimmed aspen and more like a whole forest, with branches both fused and snapped, with leaves both shimmering and fallen.

I sit back down on the stone.

It occurs to me that, were I to exchange this stone for my chair, the forest for my desk, and the aspen for a book of poems, I would still be engaging with trees. For chairs and desks and books are all made of wood, and wood was once very much alive. But there is something to being in trees’ presence, in learning to not only read about trees but to also read them for who they are.

In the arboretum, I notice the shapes of trunks, either straight or crooked, tall or pleached into other trees, sometimes of different sizes or even species; another day, I notice light, the color and length of it and what it shines upon; I notice change, how the leaves were heavy with summer, then gone; and I notice yellow, so much yellow, “yellow sadness,” as the poet Mary Ruefle writes,

“the sadness of...all things round and whole and dying like the sun...the confusing sadness of the neverending and evanescent...”

There is such yellow sadness in the light, on the trunks, in the aspen leaves on the ground.

Walking home, I find myself drawn to a preponderance of leaves with holes in them. I realize I could follow them like memories in hopes of finding the tree they belonged to, the tree I leaned my head against and tried to listen to, the tree I read like an old book and spent time with like an old friend. The tree that now is the leaves, the leaves with holes, the memories with holes I can see the sky through.

On my arboretum ambles, I am perhaps moved most by this, the forest’s capacity to store, stir, and compose memories. That is why I engage with the trees first by smell, to work my amygdala and hippocampus into dislodging recollections that had once been lost to me like leaves from the bigtooth aspen.

Then the memories, of seasons past, of yellow sadness, of friends and home and hope begin to flow, while the trees slowly grow their rings and the leaf layer forms the latest sentence in the story of the forest floor.

The trees are always writing. I invite you, too, to read along.
For Marginalized Communities, a Need for Environmental Justice

Mykela Patton ’22
By Gerry Boyle

Mykela Patton works for Communities for a Better Environment, a statewide organization in California that has an office in her home city of East Oakland, which, she says, “historically has a lot of discriminatory zoning practices and a lot of industry that has just been rubber-stamped into the community with little or no community input or look at collective harms.”

In what Patton calls “the reckoning year,” that history is changing, and the Colby junior is in the thick of it.

The law that is helping marginalized communities in California, including the one where Patton lives, is Assembly Bill (AB) 617, signed into law in 2017.
It requires that the state take action to reduce toxic emissions and pollutants in disadvantaged communities.

Studying remotely this past semester, Patton is part of the effort, working through an internship with Communities for a Better Environment as it moves toward implementing AB 617’s goals city by city, neighborhood by neighborhood. “It can be shutting down some of this industry, rerouting trucks, and looking at those zoning laws and city codes that allow for certain things to go in certain neighborhoods,” Patton said.

She’s looking at air quality and zoning laws and also gathering community input that will be part of a new emissions reduction plan, an effort made more complicated by the pandemic. But as Patton talks about having to do some of the work virtually, it’s like she hasn’t missed a step in her drive for environmental justice.

Her awareness began as a child when her mother, determined that her children enjoy time outdoors, drove them to the nearest park—in an adjoining city. At Skyline High School, she joined the Green Energy Academy and was introduced to environmental science and the environmental movement. An internship with a local nonprofit, the Rose Foundation for Communities and the Environment, followed.

“That’s where I first felt my connection to the environmental movement,” Patton said. “I really felt my place in understanding, as a low-income Black woman, the disparities that we deal with in my community and the fact that this is not the reality and lived experience for a lot of other people.”

At Colby, the Questbridge scholar immediately began amassing training and tools for what she describes as the fight for equality and the shift to a just transition. “Anything like climate justice, anything environmental justice related—I’m taking it,” she said. And, yes, there’s a relentlessness to Patton’s recitation of the knowledge and opportunities she’s availed herself of in just two and a half years.

Environmental science and biology. Human health as it relates to the environment. Global climate policy, which showed her that the same dynamic she grew up with in East Oakland was working on a grand scale in the global South, where climate change disproportionately affects people of color and low-income people. Early on during that course, she went to the instructor, Assistant Professor of Environmental Studies Stacy-ann Robinson, to introduce herself and explain how the work could fit into Patton’s climate justice goals.

Robinson took note. “I think she can make a tremendous contribution to, for example, a grassroots movement in the Bay Area,” she said. “Something nationally isn’t out of reach for her.”

Which makes the tools essential.

Another course in environmental justice taught Patton about the beginnings of the movement, including the milestone protests against a toxic-waste landfill in Warren County, N.C., by Black residents in the 1970s. The protests didn’t block the waste dump but resulted in a study that showed Black Americans and people of color are four times more likely than whites to live near hazardous waste sites.

This was no surprise to Patton, who recalled a school trip to the neighboring city of Richmond, where a community was marginalized not only by poverty but also by the fact that their homes were located just a hundred feet from an oil refinery. In Oakland, there is a pattern of locating schools primarily attended by students of color on land
that is contaminated by lead or carcinogens.

How could that happen? Patton is working to deconstruct the actions that made this environmental discrimination possible. “I think this is my calling, understanding the bureaucracy, and the history, and the legislation that is behind this because zoning laws and past legislation are heavily tied to the way cities are set up now.”

She learned more about this process in a course called Suburban Politics that looked at how cities are created and evolve, in the process keeping marginalized communities closest to environmental threats. That was coupled with an internship at the environmental law firm Shute, Mihaly & Weinberger in San Francisco, where she worked on a project that added an environmental justice section to Oakland’s master plan. She was also involved in a project in Hunter’s Point in San Francisco, an area with toxic waste contamination—and a community that is predominantly Black.

Patton noted that she has deep respect for residents who have lived through environmental injustice and feels privileged to hear and document their stories. “I don’t like calling myself an activist because I see people in the community—they know what’s going on. They may not know what particulate matter is and why it triggers asthma, but they know when their kid is having an asthma attack and they have to go to the E.R. every two weeks.”

She looks for ways to tell those stories better, such as a course in spatial analysis, another way to illustrate environmental inequality when speaking to policy makers. At Colby, she has listened to and sometimes met master storytellers in the movement: author and cultural geographer Carolyn Finney, poet Camille Dungy.

Law school or graduate work in policy may be in her future, but in the meantime, Patton is leaving no opportunity unturned. “I understand that education is a privilege and not a privilege that anyone in my family has had to this level,” Patton said.

It’s a privilege that she is intent on turning into real and lasting impact.

“I think folks are finally beginning to understand that we have to move toward a just transition focusing on folks who historically have been left out of the conversation,” she said, “making sure their voices are heard.”
OPENING A WINDOW TO EVOLUTION

David Angelini’s research on genetic adaptation gets push from McVey Data Science Initiative

By Christina Nunez
Most people think of soapberry bugs as little more than a nuisance, if they think of them at all. Found across much of the southeastern United States, the oblong insect is harmless to humans and likes to hang out on plants native to the soapberry family, hence its straightforward name.

For a geneticist like Associate Professor of Biology David Angelini, soapberry bugs offer a compelling window on evolution, yielding insights that connect to human health. Depending on the environment in which it matures, a bug can either develop long wings and fly or remain earthbound and reproduce more. Understanding the genetic mechanism behind this adaptive feat could help shed light on processes that relate to a variety of medical conditions, from diabetes to cancer.

Angelini first began working with soapberry bugs while teaching at American University, but it wasn’t until he got to Colby in 2012, he said, that the genetics research really took off. In the intervening years, he has identified certain pathways that are important to the bug’s development. Food availability, for example, helps determine the wing size; if there’s less food around, the bugs will evolve so they can fly to look for more. More food, on the other hand, translates to shorter wings and more offspring.

Part of the task, then, is to explore how environmental changes beget genetic ones. He has observed that insulin exposure, for example, plays an important role in signaling to the bugs what traits they should develop. He and his students are also analyzing how the expression of certain genes varies with environment.

“Two years ago, getting the full genome sequence for this insect seemed like it was technically insurmountable,” Angelini said. Technological advances have made the sequencing possible, he added, but what emerged was akin to a static picture. Funding from the data initiative allows a closer look at the expression of all of those genes—the DNA in action.

Angelini’s lab at Colby is crawling with hundreds of his red-bodied subjects. Working with students, he has sequenced the insect’s genome, thanks in part to an award from the National Science Foundation. Now he is taking the research further with funding from the McVey Data Science Initiative.

“Many of those [genes] are involved in cancer processes in humans. It’s not surprising, because what we’re talking about here is the control of growth.”

—Associate Professor of Biology David Angelini
in humans,” he said. “It’s not surprising, because what we’re talking about here is the control of growth.”

Only a centimeter long, the soapberry bug can churn out a massive amount of data. Its genome contains 2.2 billion nucleotide pairs, the building blocks of DNA. (Humans have about 3 billion.) That translates to about 20,000 genes that can be studied, and Angelini’s lab is looking at the expression of those genes across some 300 individual insects, all raised under different conditions.

When he was an undergraduate at St. Mary’s College in Maryland, Angelini’s primary interest was history. Being a teaching assistant for an introductory biology class made him realize he liked working with students in the lab, and he went on as a postgrad to focus on molecular biology, earning a Ph.D. from Indiana University.

In his mind, biology isn’t so far off from history: both disciplines are centered on the stories that got us to today.

“Sometimes in biology … we are teasing out the stories of animals, plants—these organisms that have amazing experiences,” he said. “If you dig, you can figure out what kinds of experiences they’ve had through their evolution. It’s really satisfying to work that out.”

The soapberry bug’s story is intertwined with that of the Chinese goldenrain, a fluffy-looking tree with yellow flowers that became a popular ornamental planting in southeastern U.S. suburbs in the 1950s. Soapberry bugs love to feed on goldenrains, and as the trees spread, so did the bugs.

This is where computational biology becomes an important tool. “You can’t do this one at a time,” Angelini said. “You have to have software and algorithms to handle all this data, to organize it, to draw conclusions out of it.”

Colby’s new computational biology major is training a whole cohort of students to work with this type of data, which has become so essential to modern science. Vaccine development for Covid-19, for example, was accelerated by the fact that the virus’s genetic sequence was identified and released publicly.

It’s not just soapberry bugs that respond biologically to their surroundings, Angelini points out. Every organism does it. The bugs just happen to display an obvious giveaway: their wing size. “People should not lose sight of the fact that environmental factors can also be really important, not just for the phenotype of a bug, but for health outcomes for patients,” Angelini said.

Students in Angelini’s lab can take the opportunity to delve into the insect’s genome in any number of different directions. He doesn’t lack interested apprentices: though the pandemic has reduced the lab’s occupancy somewhat, he’s advising more students than ever.

As analysis of the soapberry bug’s genome progresses, there’s an opportunity for students to dive deeper on any given gene, exploring its role, Angelini said. “That’ll keep us busy for a long time.”
ANGELINI LAB ALUMNA TAKES MOLECULAR BIOLOGY SKILLS TO HARVARD

Looking for an on-campus job in her sophomore year at Colby, Josefine Just ’19 saw a position that involved taking care of bugs in the Angelini lab. She knew she was interested in biology and liked insects, so she applied. The post blossomed into a research track: she ended up staying on at the lab, studying genetic sex determination in milkweed bugs. The research became her honors thesis; the summer after graduating, she drafted a related manuscript, which she is now submitting to journals.

This past fall, she was meant to be in Boston, embarking on her Ph.D. at Harvard University in developmental biologist Cassandra Extavour’s lab. While the pandemic kept her at home in Austria, she continued going full steam ahead on the path she started as an undergrad, exploring the mysteries of how genetic blueprints become structures essential to life.

For Harvard researcher Just, seeking answers to these questions in insects ties to a bigger evolutionary picture. “You get to understand also where we as people come from and our history, and how these really small-scale genetic pathways, over time, change a lot,” she said.

Just realized she wanted to go to grad school when she was writing her thesis in her senior year. “I had worked on this project and there were all these other open questions, and I just didn’t feel done,” she said.

She plans to continue working with milkweed bugs and other insects to answer very fundamental yet complex questions: How do developing cells know how to arrange themselves to make an organ, such as an ovary? How do the cells determine the number of structures needed for the job? And what tells them to stop?

Early on, Angelini hoped that Just would continue on in his lab when she joined as a sophomore, simply based on the questions she asked. “I think she’s worked on literally every different project we have,” he said. “She’s been amazing.”

For her part, Just liked the community she found at the Angelini lab and the fact that Angelini encouraged her to follow her own ideas and interests. In fact, part of that community has stayed with her. Just is working with Angelini and Mara Laslo, a former student of Angelini’s at American University who is now also doing graduate work at Harvard, on a paper about the evolution of genetic networks. The journal Frontiers in Ecology and Evolution is expected to publish it next year.

“I really enjoy thinking about complex pathways,” Just said, “and how their make-up might influence how they evolve in the bigger picture.”

ADDITIONAL STORIES ABOUT COLBY RESEARCH AVAILABLE ONLINE

Associate Professor of Economics Dan LaFave: Air quality and health in low-income communities in Ethiopia.

Adam Howard, the Charles A. Dana Professor of Education: Privilege in elite prep schools.

Stacy Doore, the Clare Boothe Luce Assistant Professor of Computer Science: Computing ethics in computer science training.

Liam O’Brien, Charles A. Dana Professor of Statistics: Data to optimize testing for sarcoma patients.

Catherine Besteman, Francis F. Bartlett and Ruth K. Bartlett Professor of Anthropology: Racialized identities and global apartheid.
A MATTER OF POLICY

Look to creative economy in pandemic recovery, writes Blair Sullivan

By Gerry Boyle ’78
As Covid-19 has ravaged the world economy, the creative sector—media, gaming, music, and fashion—has shown the most resilience, adapting to public health challenges and likely playing a central role in a global economic recovery. That strength also has implications for countries’ use of soft power to build influence through forging of cultural connections across a pandemic world.

So said a report published recently by the Center for Strategic and International Studies (CSIS), one of the world’s most respected and influential think tanks. Much of the 50-page report, “Creative Economies in the Indo-Pacific and Covid-19: The Show Must Go On,” was written by contributing authors Blair Sullivan ’22 and fellow intern Duke University graduate Robert Carlson.

“We really wanted to give a narrative because it is a report on the creative economy. We wanted it to have a bit of a storyline,” Sullivan said.

They did just that, and it’s a storyline that isn’t destined to simply gather dust on a virtual shelf.

CSIS reports are closely read by policymakers, including members of Congress and their staff, said Kimberly Flowers, who, prior to becoming executive director of the Goldfarb Center for Public Affairs, spent five years as a director at the Washington, D.C., think tank. “They’re read by policymakers globally as well,” she said. “For this particular report, because it gives policy recommendations related to the Indo-Pacific, it is highly likely that officials within foreign ministries will be asked to read and write briefings from it for their higher-ups.”

And for an undergraduate intern to be credited as a contributing author on commentary at this level?

“It is so rare,” Flowers said. “That’s a big deal.”

A big deal and not a small challenge, said Assistant Professor of Government Laura Seay, who is also an editor of the political science blog The Monkey Cage at the Washington Post. In her editor role part of her task is to help academics translate what they’ve learned in their research into language that ordinary people can understand. “It’s got to be something that an undergraduate student could access, all the way to policymakers at the White House, or the Central Intelligence Agency, or the Defense Department,” Seay said.

In that light, it may have been an advantage to Sullivan that some terminology was new to her. “There was a lot of research for my research,” she said, “a lot of new language to learn, looking at different types of bonds—green bonds, infrastructure bonds, impact investment, all sorts of financing options.”

She credits her work at Colby in global studies—including economics—and English (she’s a double major), the two disciplines providing research and writing skills; knowledge of global affairs, literature, and cultures; and the ability to frame and support a thesis. Last fall, she melded exploration of 21st-century literature with research into the role ideology plays in the competition between the United States and China in regards to Taiwan.

With that foundation, Sullivan was excited to be given such an opportunity at CSIS and wanted to rise to the challenge and prove herself—which she has done.

Since the report was published, she has been credited for her part in research for another CSIS commentary, “Post-pandemic Infrastructure and Digital Connectivity in the Indo-Pacific.” That report focuses on the region being critical to the United States as the pandemic makes infrastructure and economic development there more difficult “but also reveals openings for U.S. leadership to collaborate with allies, development banks and institutions, and the private sector to compete with China as the region seeks to accelerate recovery efforts.”

It’s a geopolitical situation that Sullivan has explored as she’s done policy research for CSIS, beginning with an initial assignment involving research into China’s influence in the Mekong Valley, including construction of hydroelectric dams that are having a significant impact on that part of Southeast Asia. “That was how I was first introduced to the region. [From there] I learned that there are all sorts of different forces at play.”

“It’s a project working with USAID and looking at their free and open Indo-Pacific Strategy and at the different pillars within that strategy.”

—Blair Sullivan ’22
MORE HARM THAN GOOD?
Laura Seay uses data to inform better U.S. policy in Africa
By Laura Meader
In 2003, following back-to-back wars, a refugee crisis, and more than five million dead, a peace settlement promised to end conflict in the Democratic Republic of Congo. Eighteen years later, fighting continues. For Congolese citizens battered by a quarter-century of brutal human rights abuses, that means one thing: continued despair and death.

What’s gone wrong in the Congo? Many things, but among them, according to Assistant Professor of Government Laura Seay, is ineffective United States policy.

“There’s a long history of bad U.S. policy in Africa that has enabled dictators and people who are up to no good,” said Seay, an Africanist who has spent years researching conditions on the ground in Central Africa.

Seay believes that trend can be reversed, and she’s dedicated her career to being part of the solution. Her approach involves what she calls policy-relevant research that relies heavily on data-driven analysis. In the right hands, her findings influence U.S. foreign policy in Africa’s Great Lake region, including the DRC.

Among the policy tools available to U.S. and international players are reform programs aimed at protecting civilians and enhancing institutions. These so-called security sector reform programs (SSR) take many forms, said Seay, who is currently focused on one in particular: an EU- and U.S.-backed program to train the national army, an often unprofessional, underpaid, unruly lot. After these trainings took place, however, a troubling trend emerged: a significant uptick in human rights abuses against civilians.

A coincidence?

To find out, a cadre of Seay’s student researchers are coding 18 years of human rights abuses in the DRC as reported in the independent press outlet Radio Okapi. When the dataset is complete, they’ll test to determine whether a relationship exists between troops that participated in the SSR trainings and the increase in human rights abuses.

In other words, is the Congolese army complicit in the violence?

Seay can’t say definitively yet.

If I have their ear, and we can prove what I think we can prove—or even if we don’t, that’s useful information too—that can have the potential to directly inform United States policy, policies in Europe, and the direction that future programs take.”

—Assistant Professor of Government Laura Seay
However, she suspects that in a weak institutional context—with limited rule of law and thus limited consequences for illegal behavior—SSR efforts “may cause more harm than good.”

The DRC’s weak institutions, coupled with its out-of-control army, have resulted over time in a breakdown in the chain of command, Seay said. “The president can give an order, and the generals can pass that order on—or maybe not.” That attitude trickles down until generals and lower-level officers essentially run their own armies. “They do what they want to do. And a lot of that involved the same thing that the rebels do: looting resources, terrorizing civilians, raping women—really terrible things.”

To rectify the situation, some brigades were trained. Soldiers were taught basic boot-camp skills as well as training in human rights awareness. Why, then, the increase in atrocities across the country? Seay can’t help but wonder: Did better-soldiering skills allow brigades to become more effective at abusing civilians?

The answer, she believes, lies in analysis of the news reports.

Seay’s student researchers, mostly Colby Presidential Scholars, have been methodically combing Radio Okapi’s reports—transcribed into French and posted on its website—to collect data. Year by year, story by story they’re cataloging each report of violence from 2003 to 2020.

Their spreadsheet fills up. What abuse or crime was committed? Where? By whom? How many casualties were there? Who reported it? To date, they’ve cataloged more than 1,100 stories. It’s slow going—and it isn’t easy.

“I didn’t have much experience handling such heavy content in such large quantities,” said Isabella Marin ’23, who worked with Seay as a first-year. “It was, honestly, nearly impossible for me to catalog those stories, read them, and then...
move on with my day. Everything you’re reading is just so horrific and shocking.”

With Seay’s encouragement, Marin approached the work in small chunks and took frequent breaks to help manage the emotional weight she felt. She needed time to absorb what she was reading. “Each story left this lingering impression on me and deserved this reverence of individual time and care.”

Seay does all she can to encourage students to remain emotionally healthy, even pointing them to Counseling Services. It slows down the research, she said, but the tradeoff in emotional health is worth it.

Eventually, Marin developed what she said was a level-headed mindset to help her focus on the importance of the work. Now, the global studies and English double major is one of many Colby students clamoring to conduct human rights research with Seay, a seasoned mentor.

Seay never loses sight of the civilians and communities finding ways to survive in lawless and often horrific situations in Central Africa. She knows that the implications of her work and of U.S. policies on people’s lives are real. So she pushes her research forward. Seay hopes to finish data collection in the summer of 2022, after which she’ll write an article or two for publication.

The goal is to get those articles into the hands of governmental and nongovernmental policymakers—people at the U.S. Department of State, for example, who Seay has already talked to about her research.

“If I have their ear, and we can prove what I think we can prove—or even if we don’t, that’s useful information too—that can have the potential to directly inform United States policy, policies in Europe, and the direction that future programs take. I think the more informed policymakers are, the higher likelihood we have of getting effective policies.”

Seay finds the exhausting and emotional work worth the challenge. “This is difficult stuff,” she said, “but we keep pressing ahead as much as we can.”

“The president can give an order, and the generals can pass that order on—or maybe not. They do what they want to do. And a lot of that involved the same thing that the rebels do: looting resources, terrorizing civilians, raping women—really terrible things.”

—Assistant Professor of Government Laura Seay
LEAPING INTO THE FOREFRONT OF BIOCHEMISTRY RESEARCH

Pay It Northward—and a Colby-prepared scientist—leads Maria Armillei to timely opportunity

By Kayla Voigt ’14
With so many labs shut down due to Covid-19 regulations, Maria Armillei ’20 wasn’t sure if she would be able to start her career after graduation.

A chemistry major concentrating in biochemistry, Armillei pursued her honors thesis with Julie Millard, the Dr. Gerald and Myra Dorros Professor of Chemistry, exploring whether genetics determines your ability to taste bitter foods—like hoppy IPAs, dark chocolate, or leafy greens. This kind of first-hand research, in addition to several summers of undergraduate research at the University of Maine and University of Connecticut, made Armillei certain that there was more to discover before applying to graduate school.

Most early-career scientists spend a few years as research assistants or lab technicians before moving on to graduate school, where they can zero in on a particular area of focus. That’s exactly what Meredith Crane ’04 did after she graduated from Colby.

“I wouldn’t have gotten that first job if I didn’t have my Colby degree. I got my first look at lab experience at Colby in Associate Professor Andrea Tilden’s lab. That’s one of the unique things about Colby—even though it’s small in terms of research, you have direct interaction with the professors doing the research. You can see that their focus is on the students, and you really feel that sense of community.” —Meredith Crane ’04

Crane took a job right out of school as a lab technician at The Jackson Laboratory in Bar Harbor, Maine, a Colby partner institution. Now she’s part of a team researching viral lung infections at Brown University’s Department of Molecular Microbiology and Immunology. Crane’s team hopes their research can shed more light on how viruses like Covid-19 and influenza overwhelm the lung and make it susceptible to secondary infections—and what treatments can be more effective in the future.

When Crane noticed an open position on a new team at the lab at Brown, she didn’t hesitate, emailing her former advisor, Andrea Tilden, the J. Warren Merrill Associate Professor of Biology, to encourage Colby students to apply. “I had no hesitation recommending a Colby student,” Crane said, “because I knew they’d have what it took to succeed in the role.”

She connected with Armillei, helping her land the position.

“If it hadn’t been for DavisConnects, I wouldn’t have known about or applied for the position. I feel so lucky that there was a position open.” —Maria Armillei ’20

Now, Armillei is able to take the next step in her career in biochemistry. The lab focuses on studying the immune system and pathogens from viruses, bacteria, and fungi, learning how pathogens interact with different parts of human immune systems.

Her role as a research assistant gives her another opportunity to apply the knowledge, skills, and research experience acquired at and through Colby to pressing scientific topics—her team looks at the interplay between the immune system and the female reproductive tract—before applying to graduate school in the future.
free and open to all

June 17, 2021–November 1, 2021
Inside Out
The Prints of Mary Cassatt

July 20, 2021–January 9, 2022
Bob Thompson
THIS HOUSE IS MINE

Mary Cassatt, Peasant Mother and Child (detail), c. 1894. Drypoint and aquatint on paper. Tenth (final) state, 17 1/4 x 11 1/4 in. (43.8 x 28.6 cm). The Lunder Collection, 2017.468; Bob Thompson, The Snook (The Sack), 1961. Oil on canvas. 23 1/2 x 36 in. (59.7 x 91.4 cm). Collection of Andrew Nelson. © Michael Rosenfeld Gallery LLC, New York.