

HUMBIO'S INDEX

Students, alumni and faculty have endeavored for over four decades to fulfill the mission envisioned by our founders. Each alumnus is making the world a better place, in one of 7,464 unique ways.

HumBio's Index

In 1971 there were 350 Human Biology majors out of 6431 undergraduates at Stanford

In 2016 there are 385 Human Biology majors out of 6994 undergraduates at Stanford

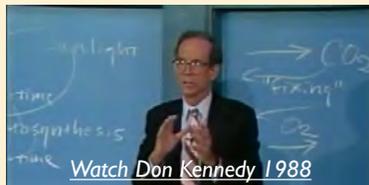
Human Biology's very first class, HumBio 1: Man and Nature, was attended by 685 students

Herant Katchadourian's Human Sexuality class drew 1035 students in 1971, and by 2002 he had taught over 20,000 students

The Human Biology Alumni Majors LinkedIn group has over 930 members ([join us!](#))

Bill Durham has taught in the Human Biology Core for 38 consecutive years

In a 1988 lecture on CO₂'s warming effect on the earth, Don Kennedy predicted that the theme of conflict resolution between nations in the 21st century would have to do with the population, resources, and environment



In 2015 U.S. national security adviser, Susan Rice, described the relationship between global conflicts and climate change



(HumBio is mentioned [minute 5:37](#))

76% of Human Biology students are women

Rhodes Scholarships have been awarded to 9 Human Biology students and alumni

Human Biology alumni live in at least 36 different countries

About half of Human Biology students plan to go to medical school or into the health sciences

Human Biology has 8 founders, and has had 10 directors

Total number of students who have graduated with a major degree in Human Biology is 7,464

6 student advisors serve their fellow students each year

11% of Human Biology students graduate with Phi Beta Kappa, and 10% with University Distinction

Since 2010 HumBio has had 26 Rhodes, Marshall, Fulbright, Luce, and Gates Scholars

In 2016 HumBio offers 6 statistics classes (see page 8)

Can you name all 8 of HumBio's Founders and their academic disciplines?



Answers found on <https://humanbiology.stanford.edu/founding-faculty>

CONGRATULATIONS OLYMPIANS

Congratulations to Six HumBio Olympians!

Of Stanford's 39 athletes at this year's Olympics in Rio, Brazil, six were HumBio alumni.

Read more on the [Stanford Athletics site](http://gostanford.com/news/2016/7/7/athletics-bound-for-rio.aspx). <http://gostanford.com/news/2016/7/7/athletics-bound-for-rio.aspx>

Photos courtesy of Getty Images and Stanford Athletics



Women's Rowing • Grace Luczak • USA

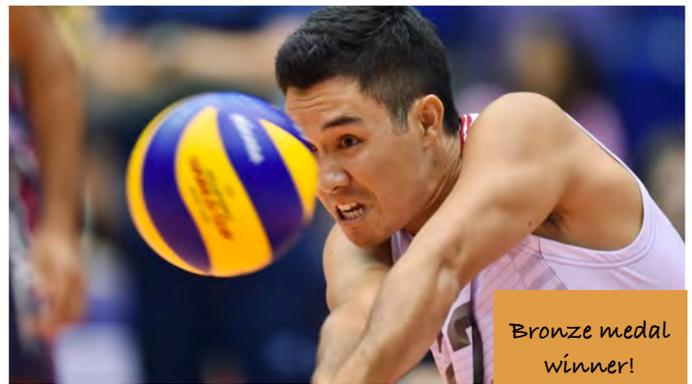


Bronze medal winner!

Women's Volleyball • Foluke Akinradewo • USA



Women's Swimming • Andi Murez • Israel



Bronze medal winner!

Men's Volleyball • Erik Shoji • USA



Gold medal winner!

Women's Track & Field • Katerina Stefanidi • Greece



Women's Rowing • Chierika Ukogu • Nigeria

STATISTICS IN HUMBIO

Giving Statistics a Fresh Face



Lianne Kurina, Associate Professor (Teaching), embraces the challenge of introducing her HumBio students to the world of data, a critically important part of their lives. If anyone can give students a fresh outlook on statistics, Kurina is the one to do it.

Students' attitudes can vary dramatically on the first day of a required course compared to an elective course. This is often the case for a required statistics class where a subset of students have avoided taking math, computer, and statistics classes either out of fear, or because they think that the classes might be boring.

Given that I have just one opportunity to teach them statistics, it is more important that they understand what these concepts are telling us about the world of data, than to be able to prove that the formula used to calculate the standard deviation is statistically valid. I have full confidence that whoever came up with the formula did a good job with that. That's not my enterprise. My enterprise is teaching students how to use data, how to understand it, and how to decide whether or not to believe it.

What a delight it is then when apprehensive students are greeted by Kurina's enthusiasm. Passionate about bringing her research to her students, she aims to teach the material so that it is meaningful and understandable. She wants it to stick with them. Kurina assumes no prior knowledge of math, and guides them assuringly. "Some students are worried about all of the things I am going to ask them to do, they feel concerned that it is not going to work out. And then it *does*, of course it does," said the ever upbeat Kurina.

Students learn statistical concepts as well as STATA, a statistical analysis software that requires coding. Although her students get frustrated now and then, Kurina observes them overcoming hurdles of self-doubt that they will "never be able to code." Kurina said, "When students receive their first coding assignment, some get *super nervous*. Then as time goes on, and we are a few weeks in, they just get busy typing away." As soon as students learn to execute straight-forward commands, it all gets better and the students relax.

Students use data sets that are relevant to them, as twenty-somethings. For instance the National Survey of Family Growth, which focuses on people from 15-40 years of age, is used by the Center for Disease Control to make statements in the news about health and well-being, including reproductive health, sexual practices, and pregnancies. Another data set they use is the Behavioral Risk Factor Surveillance System (BRFSS) which covers age, smoking, and U.S. obesity trends.

I like using data that students can directly relate to. Something like Body Mass Index helps us think about distributions.

Examining BRFSS data opens up conversations about what to do with body mass index (BMI) data points that are way too high or way too low. Most people are in the middle. Kurina and her students delve into these data, thinking about what to do with values at the extreme ends of the curve. "You have to ask yourself whether or not these particular data points actually represent real people, or did someone make a mistake when entering the data!" Kurina said. The answer to this question has consequences for your findings - for example, including or excluding these values can affect the average. Thinking about how to answer this question therefore feeds into discussions about how researchers make decisions on which values they believe are true. This in turn leads nicely into talking about error, where it creeps in, and what effect it has on results downstream.

By the end of the quarter most of her students are relieved of the misgivings they carried into their class on day one. Thinking about the shift in students' attitudes over the quarter, Kurina said, "It is really rewarding to see students who are nervous and full of self-doubt at the beginning of the course gain facility with these critical statistical concepts and become so competent at coding."

Kurina teaches HumBio 88: Introduction to Statistics for the Health Sciences, and HumBio 154B: Principles of Epidemiology, with emphasis on women's health.

Read how her recent study challenges the view that sickle cell increases mortality risk in the [Stanford Medicine News Center](#).

45th BIRTHDAY CELEBRATION

Over 300 of the Human Biology tribe came together on a sunny afternoon during Reunion Homecoming Weekend to celebrate HumBio's 45th! The party served up a festschrift for HumBio's consummate citizen, Bill Durham, Bing Professor of Human Biology, Emeritus, and Professor of Anthropology, Emeritus.

The festivities opened with a glowing report of Human Biology's accomplishments by Dean Richard Saller, Vernon R. and Lysbeth Warren Anderson Dean of the School of Humanities and Sciences. Then Human Biology's Bing Director, Paul Fisher, M.D., revealed his talent as an expert M.C. as he kept laughter and presentations rolling throughout the afternoon [program](#). Alumni shared amusing stories and gratitude for Durham's professorial influence on their lives and careers. They also gave glimpses into their four impressively distinct careers including [Ari Bernstein, M.D.](#), as a pediatric hospitalist, and instructor who examines the human health effects of environmental changes, [Wende Sawyer Hutton, M.B.A.](#), as a venture capitalist who invests in medical wearables, [Curt Langlotz, M.D.](#), as a professor of radiology and bioinformatics who develops novel machine learning and natural language processing algorithms, and [Flora Lu, Ph.D.](#), as a professor in environmental studies who specializes in ecological anthropology.

Intermission was an energizing and educational treat proffered by alumna [Begoña Echeverria, Ph.D.](#) along with her animated musical Basque trio [NOKA](#).

The afternoon presentations culminated in Durham's colorful recounting of his nearly 40 year HumBio history.

Cheers Durham! Cheers HumBio!

Enjoy excerpts from Durham's talk:

Two score and five years ago our founders brought forth on this campus a new major, conceived in liberal arts, and dedicated to the proposition that the social and natural sciences should be treated as equal...The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us - the active supporters - rather, to be dedicated here to the unfinished work which they, who began the major, have thus far so nobly advanced.

It all began with lactose, but you already knew that! Many good things begin with lactose, not just the Human Biology Core, but the life of almost every human infant, and the life of almost every young mammal, except the pinnipeds.

But did you know that the Program in Human Biology itself in a very real sense began with lactose? Yes, Human Biology's first director, Professor Norm Kretchmer, is really the one to credit-or-blame continued on page 9

IT GLOWS....

Best HumBio swag ever! You will be the life of your next HumBio slumber party, with the new glow-in-the-dark lactose molecule lapel pin. Made in honor of Bill Durham's memorable lactose lectures, this nifty pin was the hot swag give away at HumBio's 45th reunion party. If you didn't get one, please send your favorite HumBio memories and photo to Robyn Duby at rduby@stanford.edu for our [alumni stories](#) section and we'll send you a pin (while supplies last). Be sure to charge up your glow-ink first with a bright light before trying to impress your pals.

HumBio celebrated 45th with Durham festschrift



Donate to the Bill Durham Teaching Fund before December 31, 2016

on-line at: <https://giving.stanford.edu>, **select:** Make a Gift
select: Centers, Institutes, and More, **select:** Other Designation
write in: Durham Teaching Fund in Human Biology

by check payable to: Stanford University,
indicate: Durham Teaching Fund in Human Biology
Mail to: Denise Ellestad, Sr Director of Development,
Humanities & Sciences, 326 Galvez Street, Stanford, CA 94305

Questions? Contact Denise Ellestad at ellestad@stanford.edu
(650) 723-0223

Remember your Population Genetics lecture?

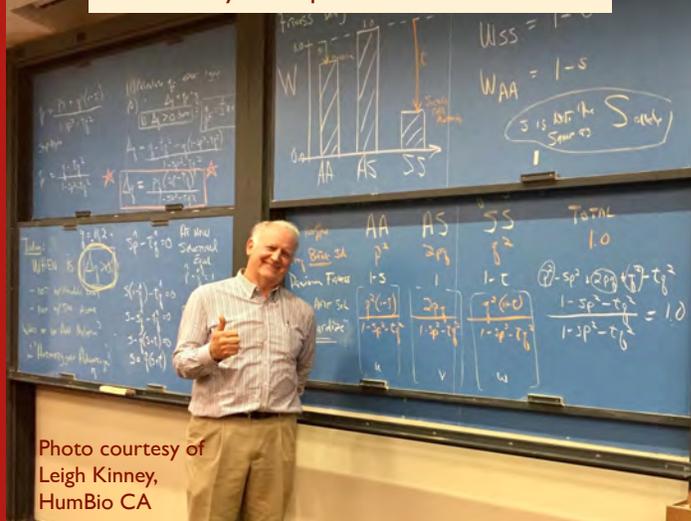


Photo courtesy of Leigh Kinney, HumBio CA



BACHELORS OF SCIENCE

Human Biology now offers a B.S. degree option for its majors, in addition to the current B.A. degree. The B.S. option was approved to begin in the 2016-2017 academic year by the University Faculty Senate on April 28, 2016.

HUMAN BIOLOGY TO OFFER B.S DEGREE OPTION

The B.S. degree option allows interested students to focus their studies in a slightly more scientific or technical direction. The requirements are to complete coursework and specialization in the biological sciences, physical sciences, mathematics, and/or computer science and engineering. Students will still take classes in the social sciences or humanities, though slightly fewer.

Human Biology students have long sought a B.S. degree option for academic paths with a more science-focused course of study, including natural sciences and even mathematics and engineering. Other interdepartmental programs, such as Science, Technology and Society, have already set that precedent.
Paul Fisher, M.D., Bing Director of Human Biology

In today's science-heavy economy and society, some industries, such as genomics, biopharma, biotechnology, and health sciences, and even some non-profits, non-governmental organizations, and government organizations, are especially well-suited for graduates with a B.S. degree.

The Human Biology B.A. degree will continue to give students the same great foundation in biology, while allowing students slightly more flexibility and breadth in the social sciences and humanities. Students are advised that while the B.S. and B.A. have slightly different benefits, both academic credentials will enhance their career opportunities and employers will seek the skills of graduates with both degrees. For instance, medical schools will not be partial to the B.A. or B.S. degree. No matter which degree majors choose, students are, as always, best served by excelling in their course of study.



Introducing some of HumBio's First Bachelors of Science Candidates
Students shared comments on what the B.S. means to them and on some of the classes they will take to count toward their B.S.

Aheli Chattopadhyay: I am so excited about the new B.S. option for HumBio! As a Human Biology major, I have definitely had the opportunity to take a broad range of courses that focus on the intersection between liberal arts and the sciences, and that has been tremendously valuable to my college experience. But since my area of emphasis is Human Systems and Disease, the B.S. highlights my in-depth natural science classes. In the future, I am thinking of pursuing an MD-PhD. Some of the B.S.-related courses I'm particularly excited about are: The Biology of Stem Cells and The Human Genome and Disease. It is wonderful that the HumBio program is constantly growing and making deliberate changes in order to provide students with even more opportunities!

Elise Cranny: My area of emphasis is Developmental Neurobiology and Disease. I am pursuing a career in neuroscience or medicine more broadly, and research. This incredible opportunity allows students to major in and experience the freedom of HumBio, while also pursuing a B.S. degree with a heavily science-based course load. I love the Human Biology major here at Stanford! I loved taking the core! This quarter I took Cellular Neuroscience and Developmental Neurobiology, and I have really enjoyed these classes.

Nira Krasnow: My area of emphasis is Molecular Biology and Human Disease. I hope to go to medical school and eventually be a practicing physician. I believe that the B.S. degree is a better representation of my undergraduate education and for that reason I am very happy to have the this option as a HumBio major. I am very excited to take Advanced Molecular Bio and Cancer Biology as part of my course of study.

Michael Rector: I aspire to be a cardiothoracic surgeon. My area of emphasis is health, nutrition, and human performance. Earning any HumBio degree is a huge blessing, but having the option to choose between a B.A. and B.S. allows students to make an even more personalized path here at Stanford. I feel that breaking new ground in this new degree option is something we should all be proud of. When I think of HumBio, I think science, science, science.

HumBio Evolves!



STUDENT NEWS



The Firestone Medal for Excellence in Undergraduate Research

Firestone Medals are awarded to the top 10 percent of undergraduate honors theses completed in a given year. **Congratulations Jordyn and Emily!**

Jordyn Irwin's ('16) thesis, "Understanding Emergency Department Patient Perceptions of the Social Determinants of Health Through the Stanford Help Desk," was advised by Jennifer Newberry (Emergency Medicine) and Donald Barr (General Pediatrics).

Emily Taing's ('16) thesis, "Syp, the Drosophila Homolog of Mammalian hnRNP Q, Functions in the Regulation of Meiotic Progression in Male Germ Cells," was advised by Margaret Fuller and Catherine Baker (Developmental Biology), Mary Kristy Red-Horse (Biology).



Stanford research cites child mortality as factor in lifespan...

Courtesy of Stanford Report

Student-faculty co-author child mortality study in *Proceedings of the National Academy of Sciences (PNAS)*

Gaby Greenberg ('15), in collaboration with [Shripad Tuljapurkar](#), *The Dean and Virginia Morrison Professor of Population Studies*, were co-authors on a study that cites child mortality as major factor in the lifespan inequality gap.

[Watch a video describing how reducing child mortality also reduces the gap between those who die earlier than expected and those who live longer than average.](#)

Runner's melanoma story encourages athletes to protect their skin

Erik Olson's ('15) close call with the deadly melanoma was highlighted in the [Stanford Medicine](#). In an effort to prevent skin cancer, Stanford's [SUNSPORT](#) teams up with Stanford Athletics to provide annual skin screening and educational presentations for athletes. Olson, a long distance runner who regularly applied sunscreen to his face, neglected to cover his back. Fortunately, when the small pink melanoma lesion on his back was discovered, it had not yet metastasized.

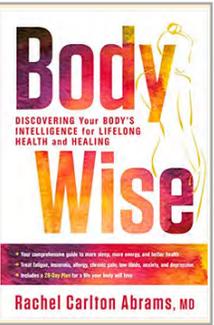


ALUMNI NEWS



Voted "Best Doctor" for 7 consecutive years in Santa Cruz
BodyWise: Discovering your Body is the newest of 5 books

[Rachel Carlton Abrams, M.D.](#) (HB '89) has been describing her HumBio education to her daughters as they apply to college and continues to be amazed at how perfect the curriculum has been for her life work. A physician and author in the areas of relationship, intimacy and holistic healing, her newest book is coming out in January from Rodale Press. [BodyWise: Discovering your Body's Intelligence for Lifelong Health and Healing](#), a cross between biology, physiology, sociology, psychology and anthropology, is what Rachel feels is a perfect expression of her Hum Bio degree. Enjoy her [Ted talk!](#)



National Academies of Sciences, Engineering, and Medicine committee on gene drives research

[Jason \(Dell\) Delborne](#), Ph.D. (HB '93), *Associate Professor of Science, Policy and Society* at North Carolina State University, served on the committee that released a report entitled, [Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values](#). Including briefings at NIH, the White House, Capitol Hill, as well as media interviews with Science magazine, *The New York Times*, the Associated Press, and his [university's news service](#), work on this interdisciplinary report was an incredibly intense, exciting and the most meaningful thing he has done as an academic. Grateful to Professor Bill Durham for the flame he lit that drove him onto the tenure track, Jason said, "HumBio imprinted an interdisciplinary identity on me that has never left!"



ALUMNI NEWS

Knowles Science Teaching Foundation Awarded Teaching Fellowship

[Kira Maker](#) (HB '11) was honored this year by the Knowles Science Teaching Foundation, which awards exceptional teachers with five-year and early-career fellowships, empowering them to become primary agents of educational improvement. Kira is committed to teaching biology to high school students in the U.S. She has a Post-Bacc/Pre-Med Certificate from Johns Hopkins University, and a Master of Arts in education from Stanford University. This fall, she began her second year of teaching at Envision Academy of Arts & Technology in Oakland, California. Congratulations Kira!



Stanford's Associate Vice Provost and Dean of Community Engagement and Diversity reflects on election during 'What Matters to Me and Why'



[Nicole Taylor](#) (HB '90, MA '91) drew over 100 Stanford students, faculty and staff to reflect on the presidential election. She believes that empathy and understanding are key in creating a path forward after a divisive campaign. Nicole describes herself as a "person of action" and sees her job as making connections that move people toward resolving issues of inequity. Returning to serve in the public sector, Nicole has recently accepted the position of Deputy Vice President and Dean of Students at Arizona State University.



**HumBio's fearless leader appointed Dunlevie Family University Fellow in Undergraduate Education
Congratulations Paul Fisher!**

Paul Fisher, M.D. (HB '84) was appointed the [Dunlevie Family University Fellow](#) as part of Stanford's [Bass University Fellows Program](#), which is designed to honor faculty who have demonstrated a sustained commitment, at the highest levels, to undergraduate education. Paul has been director at HumBio since 2011, and has been teaching HumBio 154C: Cancer Epidemiology since 2004.



FACULTY STUDY SMORGASBORD

Select the hot-links below for a sampling of a variety of HumBio faculty research discoveries.

[Laurence Baker](#), Kennedy-Grossman Fellow in Human Biology, Professor of Health Research and Policy and Senior Fellow at the Stanford Institute for Economic Policy Research, co-author on [opioid use study](#).

[Rudolfo Dirzo](#), Bing Professor in Environmental Science, and Senior Fellow, by courtesy at the Woods Institute for the Environment, on [big animal extinction](#).

[Grant Miller](#), Associate Professor of Medicine (PCOR), Senior Fellow at the Freeman Spogli Institute and at the Stanford Institute for Economic Policy Research, and Associate Professor, by courtesy, of Economics and of Health Research and Policy, on [Iran's health care expansion](#).

[Allan Reiss](#), Howard C. Robbins Professor of Psychiatry and Behavioral Sciences and Professor of Radiology, on [cycling and kids with ADHD](#).

[Tom Robinson](#), The Irving Schulman, M.D. Endowed Professor in Child Health and Professor of Medicine (Stanford Prevention Research Center), on [grants and environmental solutions](#).

[Randall Stafford](#), Professor of Medicine (Stanford Center for Research in Disease Prevention), on [a plant based diet](#).

[Marcia Stefanick](#), Professor (Research) of Medicine (Stanford Prevention Research Center) and of Obstetrics and Gynecology, on [middle-aged weight challenges](#).

[William Talbot](#), Senior Associate Dean, Graduate Education & Postdoctoral Affairs and Professor of Developmental Biology, co-author on [coaxing stem cells to generate bone, heart muscle](#).

HumBio's Six Great Statistics Courses

Qualitative Research Methodology

Students develop knowledge/skills for designing and conducting qualitative research studies.

Essential Statistics for Human Biology

Students are introduced to statistical concepts and methods essential to the study of questions in biology, environment, health and related areas.

Introduction to Statistics for the Health Sciences

Students learn the statistical tools used to describe and analyze data in the fields of medicine and epidemiology. An applied course.

Advanced Data Analysis in Qualitative Research

For students writing up their own qualitative research.

Engineering Better Health Systems: modeling for public health

Students learn disease detection and control strategies from a "systems science" perspective using engineering, operations research, and modeling techniques.

Statistics in Health Sciences

Students learn how to read, interpret, and critically evaluate probability and statistics in medical and biological sciences.

CONNECT!

Durham 45th Excerpts
continued from page 5

for lactose, not me! Kretchmer, in Pediatrics in the Stanford Medical Center, was truly a hero in the study of lactose absorption, long before I ever heard of the term. So we can honestly say that HumBio was founded on lactose...even as many of us prefer to avoid fresh milk.

Thinking back to HumBio's beginning, I can still remember the day when Biology Professor Donald Kennedy spotted me in the hallway of Herrin building, and said, "Durham are you busy for the next hour?" I said, "No, not really," and he said, "Come with me to a meeting."

In the room sat most of the founders, and another undergrad who was invited to meet with the group. The faculty outlined their idea for a new interdisciplinary major that would integrate social and natural sciences, building on a strong base of biology, in the hopes of training students to work on the big problems of our era: things like poverty, racism, deforestation, emerging diseases, species extinction, even war! "Wow," I thought, "this is exciting stuff!"

There was a lot of interest among students in changing things for the better, and HumBio was intended to help make change possible. How grateful we were then for the vision of the founders, and how grateful we remain today for that vision, and for the dedication that pulled it off.



TRAVEL WITH HUM BIO PROFS

BILL DURHAM
July 14 - 24, 2017
[The Pantanal](#)



BILL DURHAM
September 7 - 22, 2017
[Tanzania Field Seminar](#)



HERANT KATCHADOURIAN
July 28 - August 9, 2017 (Wait list)
[The Baltics Under Sail](#)



BOB SIEGEL
July 3 - 11, 2017
[Galapagos Family Adventure](#)



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humanbiology.stanford.edu/newsletter

GOT STORIES?
read others' - share yours



<https://humanbiology.stanford.edu/alumni-stories>

Send news and stories to
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LINK-IN
with over 930 HumBio alumni on
[Stanford Program in Human Biology \(HumBio\) Major Alumni LinkedIn Group.](#)



THANK YOU!

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