BYRNE Seminars
The Politics of Knowledge
As we enter another election season, from national debates to global summits, political struggles saturate our daily lives. Turning to the way we conceive of our ever-changing, globalized world, this year Byrne Seminars takes up The Politics of Knowledge as our annual theme. Academia has long been the space to both seek and gain knowledge. From Confucius to Plato to our own 21st-century smart classrooms, our ways of seeking, gaining, and disseminating knowledge have radically transformed over the centuries. Our ways of understanding the world have continually shifted as well. As a research university, Rutgers is part of the production and expansion of knowledge. Our renowned faculty from across the disciplines are engaging with questions that will shape the 21st century. Francis Bacon’s famous quote “knowledge is power” speaks to the very political nature of knowledge. And we know today that knowledge itself is commodified like never before, and so becomes social, political, and financial capital. Thus, this year’s seminars will consider the following questions: How do we know what we know? Who has access to knowledge production and education? What are the roles of academia, government, and industry in producing knowledge? Who determines canonical works and the artists, historians, philosophers, and scientists we study? We invite you to share in our exploration of The Politics of Knowledge by joining Byrne Seminars.
SPRING 2017

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FROM THE CHANCELLOR

As we celebrate our 250th anniversary, we will have so many opportunities to reflect on the history and legacy of this great university. From our revolutionary beginnings as one of the nation’s nine original Colonial Colleges, Rutgers–New Brunswick has grown into a world-renowned, comprehensive public research university. To say that education has been transformed during this time is to state the obvious: our students and faculty are conducting cutting-edge research using state-of-the-art technology while collaborating in real time with colleagues around the world to address some of the most pressing issues of our time. Yet, I believe that the essence of education has remained remarkably unchanged—inspiring teachers igniting the intellectual passions of creative students, challenging them to become tomorrow’s leaders.

Thanks to the generous support of Dorothy and John J. “Jack” Byrne, we have built a first-year seminar program on this educational premise. Through the Byrne Seminars, incoming students are given the opportunity to study with our world-class faculty in small, discussion-based seminars at the beginning of their academic careers. These one-credit seminars are designed to encourage our students to explore new areas of interest as they develop their own intellectual focus. It is simply not possible for first-year students to appreciate the vast and varied academic opportunities available to them when they enter Rutgers. The Byrne Seminars provide a vital introduction, helping to define the contours of the sweeping scholarly landscape that lies ahead.

Students entering Rutgers during our 250th year are beginning their academic careers during perhaps the most exciting time in our University’s storied history. We have recently completed an unprecedented integration with the former University of Medicine and Dentistry of New Jersey, creating Rutgers Biomedical and Health Sciences, which will offer a stunning new array of educational opportunities for our students. We are in the midst of the largest comprehensive capital construction phase in Rutgers’ history, and the buildings going up around all of our campuses will provide modern facilities for 21st-century teaching and learning. And, of course, we are the newest members of the Big Ten athletic conference and its academic counterpart, the Committee on Institutional Cooperation.

To help guide us during this transformative period, our University community worked together for nearly two years to articulate a vision for Rutgers’ future, which included creating a detailed strategic plan for Rutgers University–New Brunswick. Our institutional commitment to transforming the student experience provides the central axis for this plan, as we strive to ensure Rutgers is student-centered and relentlessly focused on student success. We are fortunate to be able to rely on proven programs like the Byrne Seminars as models for new initiatives to help us further enhance the student experience.

An exciting addition to the Byrne Seminars is its partnership with a new program, RU-1st. RU-1st is a series of initiatives focused on increasing student persistence and graduation rates for first-generation, high-need and underrepresented students. The Byrne Seminars and RU-1st will partner to offer a number of courses to continue dialogues on issues of equity and access on our campus.

I strongly encourage all first-year students to browse the tremendous offerings from this catalogue and enroll in a Byrne Seminar. These seminars have helped thousands of students forge their academic path through Rutgers. Explore the fascinating topics from across the disciplines and see what a Byrne Seminar can offer you.

Richard L. Edwards
Chancellor, Rutgers University–New Brunswick
FROM THE VICE CHANCELLOR

As you enter Rutgers, you become part of a community of faculty and staff and upper-level students eager to welcome you to a world of new ideas, surprising discoveries, diverse peoples—in other words, a major research university offering you a myriad of new opportunities. You need only be energetically curious.

With the generous support of Dorothy and John J. Byrne, we developed the Byrne Seminars to give all Rutgers–New Brunswick first-year students an opportunity to work closely with tenured faculty and a small group of peers at the outset of their college careers. These one-credit courses have been designed—with correspondingly lighter workloads—to offer you an easy way to explore fields of study and research outside your comfort zone. These seminars allow you to learn about faculty research and introduce you to areas of academic interest that may set you off on new career paths: media in the digital age, stem cells and bioengineering, musical poetry, New Jersey’s shore and climate change, and many more.

Students who took a Byrne Seminar during their first year often report that getting to study with a professor in a small seminar environment had a profound impact on their collegiate experience, often opening the door to research opportunities, and providing direction as they chose a major. Our students also tell us that through their Byrne experience they formed an intimate community of friends with whom they continue to share both academic and co-curricular interests and activities as they navigate life at Rutgers and beyond.

Participating Byrne faculty come from departments and professional schools across the university. They applaud these first-year seminars and share their excitement in introducing incoming students to their work and research. Our faculty mentor and offer students support beyond their Byrne experience, too. Some students become research assistants to their former Byrne professors through the Aresty Research Center, or they receive guidance when applying to graduate or professional schools, or begin looking to enter the workforce.

These unique seminar opportunities are essential for students making the transition from high school to college and in building an intimate intellectual and social community. Byrne Seminars are an important part of how we welcome you to Rutgers, and to the kind of life enrichment that we are certain the love of learning brings.

Ben Sifuentes-Jáuregui
Vice Chancellor, Undergraduate Academic Affairs
WHAT ARE BYRNE SEMINARS?

Byrne Seminars are small, one-credit courses, limited to 20 students. Offered through the Office of Undergraduate Academic Affairs, these classes are taught by our world-renowned faculty, who come from departments and professional schools across the university. Each unique seminar offers students the chance to experience the excitement of original research, as faculty members share their curiosity, their intellectual passion, and how they develop new ideas and fields of knowledge. Some seminars take field trips, do hands-on research, or share a meal at the Rutgers Club. Seminars typically meet for 10 weeks, starting in the first week of each semester. You may take up to two Byrne courses in your first year, in consecutive semesters. The seminars are graded Pass/No Credit, and have no formal exams. Students may register for a one-credit seminar in addition to the 12-15 credit standard course-load; the seminars are not meant to compete with other courses.

HOW DO I SIGN UP?

You can register for a Byrne Seminar through WebReg starting in November. This catalog also includes section and index numbers for each spring seminar below the course description. You may find the Online Schedule of Classes useful in determining which courses are open and will best fit into your schedule. Enter subject code “090” and course number “101” to get a list of Byrne Seminars for the semester, including up-to-date information about time and location.

HAVE QUESTIONS?

Email Angela Mullis, Director at: byrneseminars@rutgers.edu / Call 848.932.6971
Or visit our website: WWW.BYRNE.RUTGERS.EDU
Traditional Byrne Seminars are designed to introduce incoming students to Rutgers faculty and to the exciting research being conducted at one of the nation’s top research institutions. The Aresty Center builds on this introduction by placing undergraduates with faculty mentors. With the Aresty-Byrne Seminars, these two signature educational initiatives in the Office of Undergraduate Academic Affairs are collaborating to meet the increasing student demand for research-based learning opportunities. Aresty-Byrne Seminars take traditional Byrne Seminars one step further and ask students to participate in their professors’ research through the practical application of knowledge. In other words, these seminars expose students to the activities of research—from building robotics to collecting specimens in the field to working through an archive. Professors leading these courses then offer an Aresty research project for the next year, and select students from the seminar as research assistants.
**Fighting the Fat: Do Obesity Treatments Work?**

Nicholas Bello (Animal Science)

“Globesity” is the term used by some to describe the worldwide impact of obesity. Several treatments are available for obesity, but do any of them work? In this seminar, we will explore the causes and consequences of obesity and current treatment strategies. Through hands-on experiments, we will analyze neural pathways that control food intake and body weight, and examine how obesity drugs work. We will explore obstacles to long-term treatment and efficacy standards of the FDA.

11:090:101 section 01 index 12842

**Use of Medicinal Plants: Knowledge is Power!**

Mary Bridgeman (Pharmacy Practice and Administration), Lena Struwe (Ecology, Evolution, and Natural Resources)

Plants have been utilized since ancient times in an attempt to cure disease and relieve suffering. Pharmacognosy, a branch of medical science devoted to drug plant history, selection, identification, and study, remains an alive and flourishing area of research in our modern medical world. The objectives of this seminar are to introduce students to the roles of plant-based medicines throughout history; describe the use of plant-based and herbal medicine in present-day patient care, including safety and adverse effects; describe the toxicology and adverse effects attributed to medicinal herbal plants; identify future areas of drug development; and debate current controversies surrounding medicinal herbal drug use.

11:090:101 section 24 index 15355

**The Psychology of Reasoning**

Clark Chinn (Education Psychology)

People may try to think rationally and make sound decisions, yet they often fall short. For example, people are sold on the latest diet fad even though evidence indicates the diet is unsafe. Businesses cling to traditional incentive plans even when evidence shows that these plans hinder creativity and innovation. When we make mistakes evaluating evidence, we may make decisions that harm our health, well-being, and happiness. In this seminar, we will examine research in psychology and education to learn practical techniques to evaluate evidence and improve our reasoning and decision-making ability. At the same time, we will apply what we learn to analyze the reasoning of middle school students who are also learning to improve their reasoning skills. Our work will culminate in one or more presentations at the annual Aresty Undergraduate Research Symposium. Through this seminar, you will learn about reasoning and how to study it.

01:090:101 section 11 index 10003

**Revolutionary Remediation: Environmental Remediation at Rutgers University**

Donna Fennell (Environmental Science)

New Jersey was the first industrialized state in the union and has suffered from substantial environmental contamination as a result of heavy production and usage of industrial chemicals. Fortunately, New Jersey is also where some of the earliest applications of waste treatment and environmental cleanup technologies have evolved. Indeed, some of the earliest scientific research on pollutant biodegradation was produced by scientists at Rutgers—and Rutgers faculty continue to lead vibrant research programs to repair the environment. In this seminar, we will explore the history of environmental pollution and environmental remediation in New Jersey, specifically focusing on contaminated sites along the Raritan River. We will explore technology-enabled mapping that allows a bird’s-eye view of contaminated sites in New Jersey. Students in this course will continue an important Rutgers tradition by participating in laboratory research activities and developing ideas related to environmental cleanup in the Raritan River Basin.

11:090:101 section 03 index 12844

**The Wonder and Intricacy of the Human Machine**

Joseph Freeman (Biomedical Engineering)

The human body is an intricately engineered machine. To achieve peak operation the body employs intricately designed molecules, arranged in specific tissues, in different areas of the body. The human body has an incredible level of organization from the molecular level to the tissue level; one small change at the micron level can lead to health issues or even death. In this course, we will take a journey into the human body beginning at the molecular level and ending at the tissue level. We will discuss how molecular structure leads function; leading to a discussion of tissue structure and how molecular arrangement and alignment dictate tissue behavior. In addition, we will have a hands-on experience isolating proteins from tissue and reconstituting them into a usable biomaterial.

01:090:101 section 21 index 07786
Chancellor Richard L. Edwards announced RU-1st on November 24th as an initiative to increase support, coordination, and programming designed to assist first-generation, high-need, and/or under-represented students. The main objective of RU-1st is to make Rutgers more accessible and supportive for students who are the first in their family to attend college.

RU-1st provides a series of initiatives that includes high-impact programming and identifying school-based resources for first-generation, and/or under-represented students that eases the transition to college, and ultimately assists with student retention and graduation. RU-1st will continue to expand on the successful outcome based models of units within Student Access & Educational Equity and increase the Rutgers community dialogue on issues of equity, diversity, and access.

As part of the RU-1st initiatives, we are expanding Byrne Seminars aimed at increasing awareness of critical and wide-ranging local, state, national and other important issues confronting higher education. Throughout the catalog you will find the icon next to select seminars that are specifically designed with first-generation students in mind. These seminars will highlight the dialogue on issues of access and equality that we aim to foster through RU-1st initiatives.
Truth or Fiction?
Leslin Charles (Rutgers Libraries)
The information age has democratized the dissemination of and access to information. Social media provides a voice to all and can blur the lines of fact and fiction. Are all tweets worth the noise they generate? How can we filter through opinions and the news media to gain accurate knowledge? This course will explore the impact of the information age on our understanding of truth. Through lectures, guest speakers, videos, role play, and discussion, students will examine various channels of information and will be required to find accurate data using a wide range of information sources.

01:090:101 section 86 index 15080

Sexuality and Migration
Carlos Decena (Latino & Hispanic Caribbean Studies)
In the contemporary world, it is often assumed that people migrate from one country to another in search of economic opportunities. While this is largely true, scholars have begun to study the role that sexuality plays in the migratory process. In this seminar, we will begin by examining established models for the study of migration and sexuality. Through discussion of case studies, we will press on these traditional models as we discover ways in which sexual identities, practices, and meanings shape migration and vice versa. Case studies will include the lives of Filipino gay men in New York City, the role of sexuality in shaping U.S. immigration policy, and the shifting meanings of sexual practices among Mexican immigrant men and women in the U.S.

01:090:101 section 90 index 15076

Performing Latinidades: Latin@s in Film, Visual Arts and Performance
Yolanda Martinez-San Miguel (Latino and Caribbean Studies)
Latinos are becoming increasingly visible in the United States. According to Census (2010), in New Brunswick, NJ 49.9% of the population identifies as Hispanic or Latin@. As a consequence, Latinos are becoming increasingly visible in cinema, television, visual arts and performance, and they are a central element in the definition of U.S. Americanness. This Byrne seminar will explore visual, cinematic and performatic depictions of Latinidad in the U.S. to meditate on how Ethnic studies broaden our knowledge about contemporary American identities in the U.S. and the Global South.

01:090:101 section 43 index 12900
The Honors College at Rutgers University–New Brunswick provides students from a range of undergraduate schools with an interdisciplinary, research-focused living-learning educational experience. In partnership with the Honors College, the Byrne Seminars program is pleased to offer seminars specifically designed for incoming Honors College scholars. Honors College Byrne Seminars are intended to introduce students to the kind of interdisciplinary study that is a cornerstone of the Honors College's mission through small courses that build on faculty members' research interests. In addition to these select Honors College designated seminars, Honors College scholars have the opportunity to enroll in any traditional Byrne Seminar to fulfill their first-year Byrne requirement.

**Data Mining in the Humanities**  
**Francesca Giannetti** (Rutgers Libraries)

Popular media often portray “big data” as the exclusive province of information scientists, but data collection in the humanities can swiftly exceed the capacity of the human brain to analyze. Increasingly, humanists turn to digital tools to conduct quantitative research on literary texts, websites, tweets, images and sound recordings. How does one create or reuse a humanities data set? What tools are used to store, manipulate and process that data? How does one begin to analyze data using visualizations? This course will explore the methodologies of both quantitative and qualitative analysis in the humanities using free and open source digital tools to yield new insights into data that would otherwise be difficult to obtain. Through lectures, discussion, labs, and a digital final project, students will familiarize themselves with the tools of digital scholarship and form complex arguments on the basis of a few simple computational techniques.

**Paper-based Electronics and Art**  
**Aaron Mazzeo** (Mechanical and Aerospace Engineering)

Paper is an ideal medium for folding (origami), cutting, embossing, casting, inking, and painting. Combine these attributes with electronic components on or within paper, and there are some interesting opportunities to build mechanical structures and add sensing, lighting, or color. In this hands-on seminar, students will have the opportunity to review state-of-the-art research in paper-based electronics, and then exercise creativity in an engineering lab to build their own electronic systems that they will design while keeping in mind aesthetics and artful creativity.

**Julia Ritter** (Dance)

This seminar will explore methods and techniques of improvisation and play as applied to the creation of dance theater. Students who take this seminar should be open to immersing their playful selves in creative games, experiments, and improvisations that use the body and the voice. This course is for anyone who loves to move and challenge themselves to solve problems with creative solutions. We will explore the movement and theatrical potential of the body using traditional and experimental techniques of dance improvisation. The seminar includes a field trip to New York City for a performance.
FROM THE DIRECTORS

The Byrne Seminars Program continues to provide innovative programming through the Office of Undergraduate Academic Affairs, and this year we are pleased to announce the introduction of Byrne Seminars in conjunction with Johnson & Johnson. Our new collaboration will offer a suite of seminars co-taught by Rutgers faculty and Johnson & Johnson professionals.

For more than 120 years, Rutgers, The State University of New Jersey, and Johnson & Johnson have partnered to advance academic, research, and community service endeavors. Building on this long-established relationship and legacy of leadership, these special seminars will enhance the learning experience of students from multi-disciplinary areas of study. This initiative will expand research ties, while introducing first-year students to an array of career and educational opportunities.

On the following page, you will find these highly-anticipated seminars that will provide students with unique perspectives of faculty research and its application in a professional industry. Students will explore areas of common interest to both Rutgers and Johnson & Johnson, including global public health, health and wellness, ethics, community and leadership. In addition, students will have the opportunity to develop a mentoring relationship with both a Rutgers scholar and a corporate leader.

We invite you to begin your Rutgers experience with one of these exciting new seminars.

Angela Mullis, Ph.D.  
Director, Byrne Seminars  
Rutgers University–New Brunswick

Nancy Mark, CPA, CMA, CCEP  
Director, Health Care Compliance & Privacy  
Johnson & Johnson
Why Is An Ancient Disease Still Killing Millions?

Stephan Schwander (Director, Center for Global Public Health; Rutgers School of Public Health), Chrispin Kambili (Global Medical Affairs Leader, Global Public Health, Johnson & Johnson)

This seminar explores the global health priorities and disease burden, including HIV/AIDS, malaria and tuberculosis, diarrheal diseases and respiratory infections in children. We will look at global disparities, and the influence of poverty and socioeconomic status. Additionally, environmental factors, climate change and urbanization will be explored as a source of new challenges and opportunities for changes in the global public’s health.

As a case study, we will look specifically at tuberculosis (TB), an ancient disease and the number one infectious killer globally. Despite scientific and social advances, a high burden of tuberculosis persists worldwide. We will review diagnosis, treatment and prevention of TB, drug resistance, the lack of drug options and difficulties to access drugs and efficient health care systems in low and middle income countries. We will discuss the need for new drugs, including bedaquiline, the first new tuberculosis drug developed in the past 40 years. To deepen our understanding, we will consider the challenges of developing new medications, the ethics of testing new drugs, and the important contributions needed to control the global tuberculosis pandemic. For firsthand impressions of active global health research at Rutgers School of Public Health, students will visit the NIH-funded research laboratory of the course director with onsite learning during the seminar series.

01:090:101 section 96 index 15072

Building Trust Through Social Good: The Practice and Ethics of Successful Cause Marketing Programs

Can Uslay (Marketing), Jacob Lepiarz (Digital Strategy and Engagement, Johnson & Johnson)

The old paradigm of profit versus people is changing as individuals demand the products and companies they support behave ethically and give back to their communities. Corporations are taking notice and making social good a core component of their operating principles and marketing strategies. In this seminar students will be introduced to the concept of cause marketing, the principles behind successful and ethical cause marketing programs, and learn to develop a critical eye when evaluating the social and business impacts of cause marketing programs, both as consumers and potential future cause marketers.

01:090:101 section 67 index 15087
First-Year Seminars
**Dreams of (Human) Machines**

**Nicola Behrmann** (German)

This seminar examines the role of machines and automatons in regard to the modernist crisis of representation, the fantasy of artificial procreation, and the connection between art and life. We will investigate the way in which Friedrich Nietzsche's typewriter influenced his writing, accompany Rainer Maria Rilke's *Malte Laurids Brigge* on his visit to the Salpêtrière hospital in Paris (excerpts), read Franz Kafka's horror story “In the Penal Colony,” travel to the Philadelphia Museum of Art to see Marcel Duchamp’s famous installation *The Bride Stripped Bare by Her Bachelors, Even (The Large Glass)*, try to make sense of Dadaist poems and André Breton's Surrealist concept of “automatic writing,” and watch Fritz Lang's famous silent movie *Metropolis* (1927) and Ridley Scott's *Blade Runner* (1982).

01:090:101 section 04 index 05818

**Melodrama: The World’s Favorite Kind of Story**

**Matthew Buckley** (English)

In the last 200 years, one form of narrative—melodrama—has come to dominate popular culture around the globe. Melodrama’s typical qualities—its primary appeal to the emotions, its spectacle and suspense, its division of “good” and “evil” characters, its comforting insistence on everything ending well—are found in virtually every “dramatic” film and television show we see. Yet we are just beginning to understand what melodrama is and what its extraordinary success means. In this seminar, we will look at melodramas from the past and present, ranging from early Victorian popular plays to modern disaster films, romantic dramas, and contemporary television series like *Breaking Bad* and *The Wire*, in order to explore the history and meaning of the modern world's favorite kind of story.

01:090:101 section 18 index 15037

**Debating The Four Feathers**

**Abena Busia** (English)

A.E.W. Mason’s *The Four Feathers* (1902) remains the most filmed book of the twentieth century. The question behind this seminar will be to ask: why? We will explore the central role of gender, specifically the imbrications of “gender, race, and empire.” Which is the better question: how does a racialized imperial venture play itself out in the context of gender? Or how does a gendered imperial venture play itself out in the context of race? This is essentially a story about men, war, and the meaning of courage in a particular historical setting. Yet there are many subtexts, and in order to discuss what story, if any, the different versions are telling about women and war, Africa, and African women, we will study at least four different versions of the film from 1929, 1939, 1977, and 2002. Literary texts and the films they inspire are cultural texts which provide rich fields of meaning, and our own debates in the classroom will provide an opportunity to debate their universe of moral obligations.

01:090:101 section 12 index 05822

**What is the (Musical) Enlightenment?**

**Rebecca Cypess** (Music)

“What is Enlightenment?” Thus Immanuel Kant posed the fundamental question that occupied philosophers and artists of late eighteenth-century Europe. In this seminar we will explore both Kant’s broad question and a more focused—and perhaps more complex—one: What is the Musical Enlightenment? To answer this, we will engage a wide range of music from the period (operas, symphonies, keyboard music, chamber music, concertos), exploring its context through readings in aesthetics and philosophy.

01:090:101 section 17 index 07785

**Vampirism: History of the Modern Myth**

**E. Efe** (Comparative Literature; AMESALL),

**Charles Häberl** (Chair, AMESALL)

This seminar will cover the birth and growth of the vampire figure in the modern imagination, from the romantic era to our present. We will explore what went into the making of the vampire as a modern myth. In particular, we will analyze where the vampire stands in the history of blood, and what it has to do with the image of the Turk or the Oriental, with the Balkans or “the East of Europe.” We will look at the classical age of vampirism as a moment in intellectual history—one tied to the evolution of “circulation” at large, of goods, ideas, money, and again, of blood. While reading romantic poetry and tales, we will investigate the social, historical, and philosophical implications of the rise of the blood-sucking monster. These various contexts will enrich our discussions when we address vampirism in contemporary film and popular culture at the end of the semester.

01:090:101 section 25 index 12829

**The Fault in Our Fiction: John Green and Literature’s Big Questions**

**Brad Evans** (English)

John Green's sixth novel, *The Fault in Our Stars* (2012), a young-adult bestseller and particular favorite of Green's online fans, became a breakout success last summer after being turned into a major motion picture. Through the heartbreaking love story of teenage cancer patients, the novel makes a strong case for the exceptional vibrancy of the young adult literary scene today. There is no doubt that Green's many fans take his six young adult novels very seriously, but can you read them seriously as literature? How do Green's novels fare when approached as literary texts and read through the lens of contemporary literary theory? Conversely, how does the field of literary study look when viewed through the lens of Green's formative works of contemporary young adult fiction? This seminar will take up these questions while reading *The Fault in Our Stars* alongside some other works of classic and contemporary fiction, including Jane Austen's *Pride and Prejudice* (1813), (and the sensational YouTube adaptation *The Lizzie Bennet Diaries*), and Green's earlier novel *Looking for Alaska* (2005), itself soon to be released as a motion picture directed by Sarah Polley. We will screen both *The Fault in Our Stars* and another film by Polley, *Stories We Tell* (2012); and, if it has been released, we will head to the local multiplex to see the film adaptation of *Looking for Alaska*.

01:090:101 section 92 index 15075
Yoga: Finding Calm in Chaos
John Evans (Dance)
This seminar will help you focus on finding calm in your life while joining the ranks of busy college students. Through the study and practice of yoga, we will explore how to build a stronger mind-body connection. This course will assist you in learning how the practice of yoga can support a happy and healthy life. Through centering and breathing techniques, strengthening and stretching yoga postures, and simple meditations, students will begin to gain a better sense of well-being. We will investigate mindfulness trainings and yoga sequences throughout the ten-week seminar.

01:090:101 section AE index 154438

Alexander the Great: History and Legend
Thomas Figueira (Classics)
Few have affected history as Alexander, son of Philip of Macedonia, who led an alliance of homeland Greeks. Unexpectedly, Alexander maintained his father’s preeminence, launching a campaign against Persia. Exceeding Philip’s goal of liberating Asian Greeks, Alexander seized the whole Persian empire. He established a Greco-Macedonian politico-cultural dominance surviving into his successors’ kingdoms and later non-Greek states. This Hellenistic civilization influenced extraordinarily subsequent art, literature, and belief systems. Rich documentation grapples with Alexander’s generalship, statesmanship, and charisma. Amid debate surrounding topics as disparate as his tactics and sexuality, a remarkable interplay between history and myth-history can be discerned. Our seminar will introduce freshmen to this fascinating leader, while imparting awareness of the concepts and methodologies used to recreate the career of a major historical agent of antiquity.

01:090:101 section 58 index 21045

Sacred Number: How Science and Art Create the Magic of Numbers
Jeff Friedman (Dance)
It is amazing how much numbers show up in our daily lives. Where does “number” come from and why is it so embedded in nearly everything we do? We approach the concept of numbers in different ways, from science, the humanities, art and architecture. In this seminar, we will look historically at why numbers are sacred in different cultures; why numbers are “lucky” and “unlucky”; and how systems of measurement like the “cubit” and the “megathelic yard” are based on body parts. You don’t have to love math to take this course; you do need to be curious about how we developed unusual literary, tactile, and philosophical ways to create and develop something so basic and fundamental to our lives as “Number.”

01:090:101 section 36 index 21006

What Am I Looking At?: Visual Analysis of Original Artworks
Christine Giviskos (Zimmerli Art Museum)
Understanding and interpreting images, whether they are works of art or scientific diagrams, not only requires close looking and accurate description, but also building a “visual vocabulary” to make comparisons and contrasts. In this seminar, held at the Zimmerli Art Museum, students will hone their visual analytical skills through examinations of different types of original works of art, learning to consider artistic media, compositional forms, subject matter and iconography. Students will also be introduced to specialized resources for studying art, art history, and visual culture.

01:090:101 section 31 index 07788

Musical Poetry: A Journey Through the Classical Art Song
Barbara Gonzalez-Palmer (Music)
Since the late 18th century, classical art song has attempted to heighten our experience of poetry—an already independent art form. Some of the greatest works of music are in these magical miniatures, written by such masters as Beethoven, Schubert, Schumann, Brahms, Debussy, Barber, Copland, and countless others. Through a musical “tour” of art song, we will explore the close relationship between text and music, pianist and singer.

01:090:101 section 22 index 06887

Learning Global Issues Through Films
Fakhri Haghani (Middle Eastern Studies)
Cinema is a means of expression. It is a communication tool, a language and a message. As Lebanese filmmaker Jocelyn Saab has said, “Cinema is life.” Film reflects the reality around us. This course leads students to explore the study of film as one of the 21st century’s most innovative interdisciplinary fields of research into the revolutionary productions of knowledge. The course introduces students to foreign cultures and global issues through film from around the world. It will generate discussion in history, politics, culture, literature, art, environment, food, fashion, and family. Students will come to a new understanding of international issues from a critical thinking perspective. The course includes a field trip.

01:090:101 section 29 index 06907
Sounding Play: Acoustic Ecology of Sports and Games
Eduardo Herrera (Music)

The intimate silence of the tennis court interrupted by a player’s grunt; the focused listening of a double Dutch jumper with ropes that move too fast to see; the country music song playing in the pickup truck you stole in a video game; chanting with 40,000 other fans against the wrong call the referee’s whistle just signaled. Sound is an essential component of sports and games. Both as players and spectators, people engage in listening, chanting, speaking, noise-making, music-making, and even staying silent as part of an auditory ecology that is intimately tied with the immersion, flow, and ultimately, the success of the activity. In this class we will explore a series of case studies within the game-sport continuum that address important questions about gender, race, social experience, and the nature and potentials of participatory sound making. These will include chanting and crowd noise in stadium sports (soccer, football, tennis), double Dutch rope skipping, diegetic and non-diegetic music in open-world action games (Grand Theft Auto, Lord of the Rings Online), sound-driven designer board games (Space Alert, Escape: The Curse of the Temple), the sound crisis of motorsports (Formula 1 and Formula E), and music-rhythm games (Guitar Hero, Rock Band, and Dance Dance Revolution). Sound, ever present, becomes the basis for deep, intimate connections among and across players, gamers, and audiences.

01:090:101 section 32 index 08929

Korean Folk Music for the Modern Seoul
Min Kwon (Music)

From K-Pop to golf, cars, technology, arts, and diplomacy, the presence of Korea and Koreans are felt strongly in today’s global climate. Despite many challenges of the poverty stricken decades following the devastating Korean War, Korea has exhibited a progression in global prominence that is nothing short of phenomenal. One remarkable reflection of the history of Korean culture is the country’s folk music genres which celebrate a 1500-year tradition. Though these art forms continue to thrive in traditional arrangements, modern performers and composers draw inspiration from the enormous body of folk songs and often adapt them to modern instruments to present these songs in a new light. Join us for an intriguing seminar to discover the rich diversity of Korean folk music, and the soul of Koreans as we endeavor to create a musical bridge across cultures and generations and give a new voice to an extraordinary musical tradition.

01:090:101 section 38 index 12850

Quantum Mysteries
Barry Loewer (Philosophy)

In this seminar, we will discuss the quantum revolution in physics that took place in the early twentieth century and its philosophical consequences. We will begin with a nontechnical and non-mathematical introduction to the basic ideas of quantum mechanics. We will then look at the battle between Niels Bohr and Albert Einstein concerning the aims of physics and their different views concerning what quantum mechanics says about the nature of reality. We will discuss the famous paradoxes of quantum mechanics (“Schrödinger’s cat” and the “EPR paradoxes”), Bell’s theorem, and whether there are non-local connections in nature. We will also discuss whether there are consequences of quantum theory for free will, consciousness, and time.

01:090:101 section 46 index 12899

The Book: Digital, Edible, and As Art
Megan Lotts (Rutgers Libraries)

What is a book? From banned books to decorative books, this course will explore the cultural history of the book and how the physical format of books has changed over time. Students in this course will work hands-on with rare books and one of a kind materials from the New Jersey Artists’ Books and Book Arts Collection housed in the Rutgers University Libraries Special Collections. This course will include guest lectures by Book Artists, Curators, and Librarians. Students will take trips to the Brodsky Center, MoMA, and more. Topics explored throughout this course will include: Artist Books, Graphic Novels, E-Books, and the world of self-publishing.

01:090:101 section 95 index 15073

World War II in Oral History and Film
Norman Markowitz (History)

This seminar will explore WWII from the viewpoints of those who lived the experience. Through portrayals of the war in documentaries, film, and fiction, we will look at history as a process, a force by which perceptions of the past are influenced and transformed by changes over time as well as our present moment. From Europe to America to New Jersey, we will explore the history of this great war along with its lasting effects. The seminar includes a visit to the Oral History of Rutgers Graduates in WWII Collection at the Alexander Library.

01:090:101 section 81 index 13505

The “Problem of Evil” in Philosophy, Literature, and Film
Trip McCrossin (Philosophy)

What do we mean when we say of someone that they have “the patience of Job,” when we complain that “bad things happen to good people, and good things to bad,” when we admit that we are somehow consoled in our distress by the assurance that “things always work out for the best?” What such sayings, complaints, and consolations share, among other things, is that they reflect together, arguably, the ongoing legacy of the problem known as “the problem of evil.” In this seminar, we will work together to understand a basic divide that has animated modern responses to the problem, as both a theological and secular one, and to trace the legacy of this divide in certain exemplary contributions to twentieth-century literature and film.

01:090:101 section 44 index 05836
Looking East: A Different Way of Learning Dance, Language, Traditional Arts & Cultures Through Movement

Paul Ocampo (Dance), Chien-Ying Wang (Dance)

This course will investigate various dances, traditional arts and culture of Taiwan, the Philippines, and neighboring countries. Through the language of dance, students will learn traditional arts and cultures using practices and modality that is fun, interactive and informative. This seminar is designed for students who want to expand their understanding of dance as an emblem of cultural identity and an expression of social order. Along with the practice of dance, we will experience how to prepare traditional foods associated with respective festivities. The food serves as a conduit for a holistic experience to deeper comprehension of Asian cultural arts and heritage. This seminar will include a field trip to New York City.

01:090:101 section 74 index 15084

Faust’s Bargain With the Devil: Knowing It All, Losing It All

Nicholas Rennie (German)

Faust, in Johann Wolfgang von Goethe’s famous play, is every university’s worst nightmare. Frustrated that his multiple academic degrees have left him knowing nothing of value, the aging scholar goes rogue: he gives up standard research for magic, he flees his study with the devil to go out and party, he uses his status to help him impress and seduce a much younger woman, he heads off on a world tour without regard to those he encounters or has left behind, and he becomes a capricious and dangerous tyrant. How, then, did the Faust legend become the quintessential myth of modernity? What does Faust experience and learn by selling his soul? How is he changed, and how does he transform his world? Is his story a celebration or a condemnation of the modern age of discovery—research, teaching, learning and self-exploration?

01:090:101 section 54 index 10282

Queer Literature Before Gay Liberation

Kyla Schuller (Women’s and Gender Studies)

What did queer lives look like before gay rights burst onto the scene in the late 1960s? How can we understand the different forms that same-sex and queer identities and relationships took before the advent of the modern categories of homosexual, heterosexual, gay, lesbian, and transgender over the course of the twentieth century? We will explore the queer past by turning to literature about same-sex and queer desires written in the nineteenth century and the first half of the twentieth. Students will explore queer cultural history, as well as learn just how queer the culture of the United States has long been.

01:090:101 section 61 index 20984

Bruce Springsteen’s Theology

Azzan Yadin-Israel (Jewish Studies)

This seminar offers a theologically oriented approach to Bruce Springsteen’s lyrics. We will focus on Springsteen’s reinterpretation of biblical motifs, the possibility of redemption by earthly means (women, cars, music), and his interweaving of secular and sacred elements. Springsteen’s work will also be situated within the broader poetic tradition that casts the writer as a religious figure whose message does not effect transcendent salvation, but rather, transforms earthly reality.

01:090:101 section 72 index 15086
Stigmata Non Grata: Can We End Stereotypes of Mental Illness?
Beth Angell (Social Work),
James Walkup (Clinical Psychology)

Nearly half of all Americans will meet criteria for a mental disorder at some point during their lives, yet only a fraction of them will actually seek counseling or other mental health services. One of the major reasons people avoid seeking help is because of the stigma that is associated with having a mental disorder. This seminar will explore this phenomenon of stigma from a variety of perspectives, taking up such questions as: Where does stigma originate? Why are some mental health problems more dreaded or feared than others? Do the stereotypes about mental disorders contain a kernel of truth? What, if anything, can be done to reduce or eradicate the problem of stigma?

01:090:101 section 20 index 08926

The Power of One: Understanding Resilience and Relationships
Caroline Clauss-Ehlers (Education Psychology)

No matter who you are or where you come from, your life is bound to be crowded with challenges. How do individuals successfully overcome challenges? This is the central question of resilience research, research on how people “bounce back,” adjust to change, and overcome adversity. This research shows that having just one important personal relationship is the most important factor that promotes individual resilience. In this seminar, we will explore resilience and relationships in the lives of students. After briefly reviewing the history of resilience research, including the professor’s own investigations in this area, our class discussions will connect resilience research with many types of relationships: mentors and peers in college, family relationships, relationships at work, and romantic relationships. We will also touch on resilience and gender identity.

01:090:101 section 07 index 10002

Emerging Issues in Homeland Security and Public Safety
John Cohen (School of Criminal Justice)
Thomas O’Reilly (Executive Director, The Police Institute - School of Criminal Justice)

This seminar will explore current homeland security related threats/issues facing the United States and how federal, state, and local officials are working to deal with these threats. Specific areas of focus will include homegrown violent extremism, cyber attacks, international terrorism, trans-national drug trafficking, intelligence and information sharing, and immigration. Students will have the opportunity to interact with professionals from the homeland security and law enforcement professions.

01:090:101 section 37 index 21007

Smoke and Mirrors: Political Challenges to Achieving the Tobacco Endgame
Christine Delneo (Health Education and Behavioral Science),
Daniel Giovenco (Health Education and Behavioral Science)

Political realities have allowed Big Tobacco to fend off public health law, evade regulations and use deceptive marketing practices to keep millions of Americans addicted to a defective, deadly product. This course will examine the politics of tobacco over time. Using formerly secret internal industry documents, historical archives of popular tobacco advertisements, and discussion of the current tobacco retail landscape, students will debate Big Tobacco’s assertion that marketing restrictions to protect the public’s health violates the industry’s First Amendment rights.

01:090:101 section 19 index 20007

The Politics of Consolation: Memory and the Meaning of September 11
Angus Kress Gillespie (American Studies)

This seminar will examine issues of cultural trauma and collective memory. We will argue that a key function of American political leaders is to provide consolation in the aftermath of calamitous, unexplainable tragedies. Today, the Twin Towers of New York City’s World Trade Center stand only in our memory, an image that calls to mind sorrow and loss. But during the years that they straddled the skyline, the towers meant many things to many people. In this seminar, we will examine the politics in ensuing years in terms of real estate developers wanting office space, grieving families wanting a memorial, and all of America looking to rebuild to honor the dead.

01:090:101 section 24 index 07787

Si se puede: Latino/a Culture, Family, Race, Ethnicity, and the College Experience
Ebelia Hernandez (Education Psychology)

One in four kids in elementary school are Latina/o, which means that it is worthwhile to understand more about our culture, language, history, identity development, and other factors that play a role in the college experience in unique ways. In this course, students will consider how race and ethnicity may affect how we think about education, decision making, resilience in dealing with challenges, and the differences between Latinas/os and other groups on campus. Class discussions, film viewings, and guest speakers will encourage students to think critically of the ways that society and the educational system interplay with each other; affecting access and persistence in higher education.

01:090:101 section 94 index 15074
Religion and the Origins of Political Order

Tao Jiang (Religion)

This seminar will examine the role various religions, such as Confucianism, Hinduism, Christianity, and Islam, have played in the origination of political order in civilizations around the world. We will use Francis Fukuyama’s recent book, *The Origins of Political Order*, to help us frame the discussion. This book critically examines the role religions have played in shaping the political cultures of ancient civilizations and their modern implications. We will study notions like tribalism, patrimonialism, bureaucracy, rule of law, and the relationship between church and state, contextualized in their historical background, thus helping us to better appreciate the contingency and vulnerability of a variety of modern political norms.

01:090:101 section 75 index 15082

Success in Schools: Why Being Smart Is Not Always Enough!

Ryan Kettler (Psychology), Timothy Cleary (Psychology)

Have you ever wondered why some students struggle in school and what can be done to help these individuals? In this seminar, we provide examples of common barriers to successful learning in schools (learning disabilities, anxiety, lack of motivation, attention disorders), and describe approaches for identifying and solving these school-based problems. Through discussion and class activities, students will be introduced to the field of school psychology and the specific roles and responsibilities of professionals (school psychologists), whose primary job is to work with teachers, families, and children to optimize learning and well-being. The content of the course will provide practical information that will help students not only learn about hot-topic themes in education, but also consider the substantial role that psychology can have in school settings.

01:090:101 section 13 index 05823

Sound Mind, Sound Body: The Last 50 Years of Intercollegiate Athletics

Carl Kirschner (Spanish and Portuguese)

The world of intercollegiate athletics has changed dramatically from the days of regional competitions without media coverage to the present national stage with television and internet coverage. What were the factors underlying the change? What role have the universities played? What role has the National Collegiate Athletic Association (NCAA) played? This seminar will review the history of intercollegiate athletics with a special emphasis on the last ten years. Significant case studies of positive and negative behaviors by players, coaches, and universities, and the reactions (sanctions) by the NCAA will be studied.

01:090:101 section 33 index 05827

More American Than Apple Pie: An Introduction to Economics Through Sabermetrics

Michael Lahr (Planning and Public Policy)

Many people think economics is all about money. But it isn’t; it’s about weighing different choices or alternatives against one another. This class makes economic principles more interesting via baseball illustrations. If you are from the United States, you probably already have an innate understanding of the baseball industry, simply because the sport is so steeped in our culture. Interestingly, baseball outcomes connect economic theory to human behavior in many ways. First, the individual performance of a baseball player can be measured by occupation by official industry statistics, and their salaries and demographic characteristics are publicly available. In fact, researchers actually measure the incremental contribution of players to total company revenue. Indeed, the relationship between inputs (i.e., individual performances) and company outputs (winning percentage) is predictable. Better yet, their skills are traded and vary across performance venues. Few other industries provide readily measurable productivity, have a clear linkage between inputs and outputs, and provide possibilities of exchange. In addition to the basic components of the theory of the firm, major league baseball illustrates a variety of major topics in microeconomics: collusion, antitrust, salary determination, monopsonistic exploitation, the role of unions, the vicissitudes of day labor, and the economics of discrimination. This class will review these economic principles and some practical statistical exercises.

01:090:101 section 35 index 15038
Putting it Together: A Presidential Administration Takes Shape

Ruth Mandel (Political Science)

It’s January, 2017; the election is over and a new President is poised to take the oath of office and get to work. What happens now? In this seminar, we’ll explore the birth of a new administration in real time, watching as it takes shape and exploring questions such as: What happens during a presidential transition? Who’s on the new president’s team both before and in the new administration? What do inaugural events signal about the president and the presidency? What, if anything, can get done in the initial weeks of a new presidency? How does the new president establish and build relationships with Congress, the media, and the American people? We’ll look at past presidencies for context, but focus chiefly on the 45th POTUS.

Mama Mia! Conceptions and Constructions of Motherhood

Judith McCoyd (School of Social Work), Shari Munch (School of Social Work)

Mama, Ma, Mom, Mommy, Mother...few words can evoke such myriad emotions ranging from affection to contempt. Mothers can drive us crazy, yet we can’t live (literally) without them. In this seminar we will examine how mothers are conceived, or how women physically, psychologically, and socially transform into mothers. Our class will also explore how motherhood is constructed, meaning how mothers view themselves and how they are viewed by society. We will consider how societal expectations of mothers and the experience of being a mother has changed dramatically over time and how mothers’ experiences vary according to larger social and economic circumstances. We will learn about moms who face difficult experiences such as postpartum depression, the birth of a medically fragile child, and even the death of a baby. Finally, our class will look at the challenges mothers face in the workplace and in financially supporting their families.

The Ecosystem of Entrepreneurship and Innovation at Rutgers

Gary Minkoff (Management and Global Business), Jeffery Robinson (Management and Global Business)

In this seminar, student participants will be introduced to the entrepreneurs, inventors, supporters, and investors that make new businesses and new ventures happen in New Jersey. We call this the local ecosystem of entrepreneurship and innovation and Rutgers is a central player in this process of new venture creation. We will learn about entrepreneurship from alumni, faculty, and guest speakers from around New Jersey and participants will be able to develop and pitch their own ideas to a panel of entrepreneurial students and alumni.
The Soul on Trial
Julien Musolino (Psychology)
Do human beings have a soul? Something that gives us free will, a moral compass, and is potentially capable of surviving the death of our physical self? A majority of people in the United States believe we do; and a wealth of popular books, articles, TV shows, and gurus of all stripes purport to have found convincing evidence for the existence of the soul. The current scientific consensus, however, flatly rejects any notion of “soul” or “spirit” as separate from the activity of the brain. Francis Crick, co-discoverer of the structure of DNA, explains: “You, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules.” In this seminar, we will explore these fascinating questions, reviewing evidence from biology, psychology, neuroscience, and the physical sciences. Should we give up our soul beliefs?

01:090:101 section 26 index 12828

Between Species: Focus on the Seeing Eye® Dog
Mary Nucci (Human Ecology)
Building upon the instructor’s more than ten years of raising Seeing Eye® puppies (and the only RU faculty puppy raiser), this seminar will focus on the role of the Seeing Eye® Dog in a technological age. As the first guide dog program in the US, this seminar will examine how this Morristown, NJ organization has brought dogs to the table through outreach and advocacy. We will examine the ways in which the Seeing Eye® (founded in 1929) has adapted to new technologies in its 85 year history and consider how Seeing Eye® dogs, starting in our home state of New Jersey, are not only recognized as citizens with full participation in communities, but allow for blind citizens to be active members of our globalized world.

11:090:101 section 09 index 11078

Fundraising for International Causes: Effectively Utilizing Crowd-Sourcing and other Social Media for Global Causes
Ronald Quincy (School of Social Work)
In this seminar, we will examine the challenges that nonprofit organizations encounter to amass the assets and resources needed to manage their charitable and public services. Traditional and nontraditional fundraising methods will be discussed, along with marketing principles. You will learn the art and science of “asking” for money, inside tips on successful grantsmanship; and how to write winning funding proposals. The seminar will focus on “how to land the big fish.” Readings and discussions will be drawn from newsletters, journals, writings of top fundraisers, and “best practices” scholarship in this field of study. Following the course, students will be able to write grant proposals, and enhance their techniques on how to “ask” for funding.

01:090:101 section 52 index 10240

Urban Adventure
Michael Rockland (American Studies)
Adventure is often associated with escaping community, leaving civilization, and “entering nature,” in part because of the common view that human beings are separate from nature. In this course we will assume the contrary, that the environment humans have built—including cities, highways, and even sewers—is a part of nature and also a place of adventure and wonder. Reading select chapters from books that explore the human built environment (including Looking for America on the New Jersey Turnpike and The George Washington Bridge: Poetry in Steel), we will plan a field trip, perhaps walking the length of the island of Manhattan and crossing the George Washington Bridge on foot, or hiking along the Delaware and Raritan Canal. Beyond following the professor’s research agenda, the goal here is to have fun, to engage your imagination in relation to your immediate surroundings and environment, and to see the familiar world differently.

01:090:101 section 57 index 12895

So You Want to Be a Teacher?: Exploring Education in Urban Schools
Beth Rubin (Education Theory, Policy, and Administration)
Imagine you were given a hundred million dollars to use in urban schools - what would you do? In this seminar, we will think about the complexities and challenges of providing quality education for students in urban schools. What kinds of reforms are required? What kinds of policies and programs will work to further inspire teachers and students? The course combines key readings in urban education with case studies of innovative and successful educational programs in urban settings. Includes field visits to urban schools and possible hands-on training.

01:090:101 section 53 index 12897

Work, Identity, and Class in Latino New York
Aldo Lauria Santiago (Latino and Caribbean Studies)
Issues such as poverty, national identity, and the “invisibility” of Latinos will be the focus of this seminar on the history of the Latino working class in New York City from 1920 to 1980. In a workshop format, students will study current research on the topic and learn about the challenges involved in conducting historical research. Topics such as analyzing census data and relating abstract concepts and cause/effect arguments to empirical materials will be discussed. Students will read archival documents, newspaper and magazine articles, and oral histories in order to discover how these sources are used in the research process.

01:090:101 section 39
The Politics, Power and HERstories of LGBTQ Communities Through Film
Mark Schuster (Dean of Students)

Birrell and McDonald define “articulation” as a barometer of our culture and who we are as social beings. The portrayal of sexually diverse communities will be interrogated through a review of film as a critical lens of the personal and the political power over human beings. Through film, the class will discuss cultural perceptions and why persons who identify as LGBTQ are often forced to hide their authentic identities. A review of films such as: *some Like it Hot, The Celluloid Closet, Boys Don’t Cry, Paris is Burning, Chasing Amy, Broke Back Mountain, Trans America* and *Dallas Buyer’s Club* will focus on the evolution of previously “otherized” communities. Bisexuality is virtually untreated in film and media criticism. This seminar will focus on the central role of bisexuality in screen culture, vampire films, “bromances” and fluid cinema eroticism. Diverse affectational preferences will be explored in the context of film that empowers all members of our very complex and evolving American identity.

01:090:101 section 60 index 11077

Public Art in the Americas: Visualizing Local Knowledge
Marcy Schwartz (Spanish and Portuguese)

We gain knowledge of our surroundings, establish local identity and recognize others’ identities through visual experiences. Not only through the media but also in our day to day experiences, the visual determines much of the politics of public space, neighborhood branding, gangs and their territories, and our sense of belonging. This seminar will explore alternative visual culture, outside of museums and conventional arts institutions, in cities in Latin America and the US. The seminar activities will expose students to dynamic arts initiatives such as Philadelphia’s 3000 public murals painted by community groups, creative writing distributed on public transportation, and alternative publishers who bind their books in hand-painted recycled cardboard. Many of these projects support environmental sustainability and rely on the public to join in their design and implementation. We will take advantage of our own local urban surroundings to experience public arts initiatives. The course’s highlight will be a field trip around New Brunswick to tour some of the city’s murals and graffiti art.

01:090:101 section 63 index 20985

The Politics of Mandarin: Sociolinguistics and Education in China and Taiwan
Richard Simmons (Asian Languages and Cultures)

This seminar will explore the sociolinguistic issues behind the establishment of Mandarin as the Standard Language of China and Taiwan. In this seminar we will explore the history of Mandarin and consider the following questions: How did Mandarin come to be the standard? How was the standard for Mandarin produced and promulgated through education? What are the roles of academia and government in spreading the standard? Who determines language used in the Chinese canonical works in traditional and modern China? No knowledge of Mandarin is needed to take this seminar, only the desire to know more about this fascinating language.

01:090:101 section 66 index 11079

Language Games and Talking Heads
Karin Stromswold (Psychology), Kristen Syrett (Linguistics)

Despite the diversity among the thousands of languages spoken in the world, there are striking similarities in the “tricks” that people and languages use. This seminar will explore what makes human language so special, the language games we play in communicating with each other, and what happens when communication goes wrong. Questions we will address include: What makes human language distinct from animal communication? How can brain damage and disorders affect language? Why can speakers get two very different interpretations out of the exact same string of words? Why do we end up singing song lyrics that are creative but absurd? Are speech errors really Freudian? What kinds of strategies do we use when we wish to convey—or avoid conveying—information? We will also explore how technology relates to language—why even the smartest computer programs still mangle the simplest sentences, how technology has infiltrated the way we communicate, how advances in technology allow us to investigate how children and adults acquire, process, and represent language.

01:090:101 section AB index 15067

Addiction
Mark West (Psychology)

Do people become addicted to technology? Although some students have direct or indirect experience with substance abuse, all will have experienced the lure of the iPhone, TV, web surfing, texting or playing video games. This seminar will encourage students to describe the behaviors they observe in themselves or others. We will explore the cognitive processes involved in starting, repeating or perseverating in technology related behaviors. The goal will be to discuss whether these behaviors are similar to or different from DSM V criteria for addictive behaviors such as substance use, binge eating disorder, or gambling. We will come to understand the scientific knowledge created by clinical and preclinical researchers on addictions, including the neural underpinnings of behavioral and cognitive processes of the drug user. Ultimately, students will learn to identify warning signs in themselves or others when succumbing to self-defeating behaviors related to technology.

01:090:101 section 69 index 11292

Knowledge Brokers as Essential Link Between Science and Policy
Itzhak Yanovitzky (Communication)

The seminar will explore the flow and exchange of knowledge between science and policy, highlighting the role of knowledge brokers or intermediaries. It is based on an active research program that is funded by the William T. Grant Foundation, which explores the knowledge brokering role of the news media in the context of the societal response to the childhood obesity epidemic. Knowledge brokering is an example of the 21st Century type of jobs that students may pursue upon graduating from college.

01:090:101 section 73 index 15085
Can Exercise Change Your Brain?
Brandon Alderman (Exercise Science and Sports Studies)

Almost everyone knows that exercise is good for them, yet most people are inactive. A more effective approach to get people off the couch and moving might be to inform them of the mental and cognitive health benefits of exercise. In this seminar, we will explore the underlying neurobiological mechanisms that help to explain the beneficial effects of exercise on brain health, covering topics from depression to ADD to Alzheimer’s. We will also explore the paradoxical effect of physical inactivity despite scientific claims of a “feel better” phenomenon following exercise.

Genes, Drugs, and Models: Something Old, Something New, and a Systems View
Ioannis Androulakis (Biomedical Engineering)

The good news is that we live longer. The bad news is that we live longer! The longer we live, the sicker we may get with diseases, some of which never existed before. At the same time, life and physical sciences are getting much better at understanding how we (humans) function, how/why we get sick, and how/if we can be treated. However, the more we learn, the more we realize there is so much we do not know. We begin to appreciate that getting sick is not as simple as one may have thought in the past and that many things, some of them somewhat vague, such as “stress,” have the ability to make us sick, or sicker. Researchers have argued that the only way we can move our understanding forward is if we start looking “at the forest” and not just “the tree.” In this seminar, students will be introduced to disciplines such as systems biology, systems medicine, and systems pharmacology, which argue that we have to consider events at the “human/host” level and look at a patient from a holistic point of view, and not only at the level of specific molecule or gene. What this requires is that we bring together biology, physiology, engineering, and computational sciences in ways that we still do not know, so that we can put together all the sometimes confusing information we obtain when we study diseases, patients, and drugs and look at the entire “SYSTEM.” We will draw from our research experience and interactions with physicians, pharmacologists and biomedical scientists and engineers, to provide an overview of what might be the “next” frontier in medicine.

Radio Astronomy: Jersey Roots, Global Reach
Andrew Baker (Physics and Astronomy)

Just like Rutgers, the field of radio astronomy—the investigation of the universe and its contents through observations of radio waves—has “Jersey Roots, Global Reach.” This seminar will introduce students to the history and practice of radio astronomy with a special emphasis on discoveries made right here in New Jersey, which include the construction of the first radio telescope and the discovery of the cosmic microwave background (i.e., the afterglow of the Big Bang). Students will also learn about scientific and technical advances made by modern radio astronomers, including those on the faculty at Rutgers, and will have the opportunity to work with real data from a radio telescope.
Biology of Women

Joan Bennett (Plant Biology and Pathology; Associate Vice President for Promotion of Women in Science, Engineering, and Mathematics)

The language describing human anatomy and physiology was largely written by men. Perhaps for this reason, much of the medical jargon describing women’s biology can be misleading or have negative connotations. This course will give a basic overview of women’s biology and will cover male and female reproductive anatomy, the menstrual cycle and menopause, birth control, pregnancy, labor and delivery, childbirth anesthesia, lactation, sex determination, and diseases of the reproductive system. The class is meant to be a non-technical introduction to obstetrics and gynecology, with commentary of changes that have occurred in recent years. Demonstration materials will be used in each class session.

11:090:101 section 02 index 12843

Beyond Dolphin Tales and Moby Dick: What Do We Know About Marine Mammals and How Do We Know It?

Patricia Buckendahl (Center of Alcohol Studies)

We have many books, movies, TV shows, plus media that describe marine mammals. Some are educational, some pure fantasy, and some highly controversial. Public opinions are varied with regard to marine mammals, whether as entertainment (SeaWorld or other aquarium features), competition for fisheries (seals and seal lions versus salmon fishermen in the Northwest; dolphin safety versus tuna fisheries). Whaling and sealing have wide international implications, too. Research funding needed to understand these fascinating animals is in even shorter supply than for other branches of science. This class will explore some of the history, current events, and research that contribute to those opinions and our understanding of the lives of these fascinating animals.

01:090:101 section 06 index 05819

Oysters Then and Now: Revolutionary Seafood Research at Rutgers

David Bushek (Marine and Coastal Sciences), Daphne Munroe (Marine and Coastal Sciences)

Ever wonder where the shellfish on your plate comes from? If you are eating oysters, clams or scallops, the likely answer is New Jersey. Rutgers shellfish scientists have played a major role in the development and sustainability of the farms and fisheries that produce these delicious seafoods. From discoveries of the best ways to culture and harvest shellfish, and studies of the diseases that affect the wild populations, to genetic innovations that grow a better oyster and help protect wild ecosystems — Rutgers has been at the forefront of academic innovation of shellfish food production for over 125 years. This seminar will focus on the shellfish resources and industry in New Jersey — its history and the role that Rutgers researchers have played in helping shape it. The costs and benefits of these foods will be discussed in terms of human health, production costs, and ecological interactions. Field trips to Rutgers research facilities will allow students to explore first-hand the shellfish industry in New Jersey and the research that continues today.

11:090:101 section 04 index 12845

Stem Cells and Bioengineering

Li Cai (Biomedical Engineering)

Bioengineering and regenerative medicine seek to develop new therapies for patients with injuries and degenerative diseases. The source of cells for these therapies remains a hot topic of interest. The unlimited potential of stem cells has ignited the creativity and imagination of scientists across multiple disciplines. Future development of this technology depends on increased understanding and effective utilization of stem cells. This seminar will introduce students to the biological, biomedical, biomaterial, and bioengineering of this new discipline. Students will be introduced to the world of stem cells. We will discuss their definition, origin, and classification, as well as applications of these cells in regenerative medicine. Upon completion of this seminar, students will know the intellectual and conceptual vocabulary required to further pursue an interest in stem cell research and the regenerative medical profession.

01:090:101 section 16 index 15036

Obesity Today: Health, Environment, and Society

Sara Campbell (Exercise Science and Sports Studies)

Obesity has become a significant health and societal issue reaching pandemic levels. Our environment appears to favor obesity and as such has been defined as “the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations.” To date most of the strategies aimed at obesity focus on prevention and treatment, specifically pharmacological and lifestyle interventions. We will focus on investigating and understanding the environments that promote high energy intake and sedentary behavior and their physiological consequences. Students will learn about making healthy eating choices and exercise plans.

01:090:101 section 09 index 05820

Energy is Conserved: The First Law of Thermodynamics and the Environment

Fuat Celik (Chemical and Biochemical Engineering)

When your smartphone battery dies, the first thing you look for is undoubtedly an outlet. But what about the energy needed to fuel our everyday needs and luxuries? Where does it come from? In this seminar, we will explore the conversion and conservation of energy in the modern economy. We will understand primary sources of energy such as the sun, fissionable atomic nuclei, and fossil carbon, and how these sources are converted into different forms in order to make them useful for a variety of applications, including transportation, residential and commercial heating, electricity generation, and manufacturing. We will complement our study of these topics with field trips to a coal-fired power plant, a fusion energy research facility, and Rutgers’ state-of-the-art natural gas cogeneration and solar power plants.

01:090:101 section 08 index 08928
Wars of the Future: Chemical and Biological Weapons
Donald Gerecke (Pharmacology and Toxicology)

In this seminar we will examine potential weapons of biowarfare—including biological, chemical, and nuclear weapons—from several perspectives. Topics include their mechanism of action, biological impact, detection and recognition, epidemiology, and treatment. Using risk assessment and critical thinking, we will evaluate the potential dangers and effectiveness of using these types of weapons. We will also investigate strategies for defense against attacks, and the bioethical challenges of anti-bioterror research.

01:090:101 section 23 index 05825

Traditional Organic Food and Farming Systems
Joseph Heckman (Plant Biology and Pathology)

Before supermarkets and the modern obesity crisis, we were closer to the source of our food. Fresh foods from fertile soil were consumed raw or specially prepared by fermentation. Milk, meat, and eggs were obtained from animals on pasture. Soils were maintained with compost and by keeping livestock and crops together. In this course, we will study traditional organic food and farming systems through field trips and from selected writings of organic pioneers. We will also explore the challenges and rewards of producing and preparing traditional farm fresh foods on an organic homestead, and learn how to connect with local organic farmers to secure these nutrient rich foods.

11:090:101 section 05 index 10255
Kitchen Chemistry and Food Physics
Richard Ludescher (Dean of Academic Programs, SEBS; Food Science)
What’s really in that cheeseburger? Foods are complex and heterogeneous mixtures of bio-molecules (starch, fat, protein, vitamins, colors, flavors, etc.) that provide nutrition and, of course, are tasty to eat. The quality of foods is related to many factors: safety, physical properties (texture), chemical and physical effects of processing and cooking, stability, sensory appeal, and more. This course will investigate how fundamental concepts in biology, chemistry, and physics are used to describe, explain, and manipulate the properties and ensure the high quality of foods. In the seminar, we will prepare some foods, play with some food ingredients, watch videos, discuss issues related to genetic engineering, and go behind the scenes in a commercial kitchen, all the while analyzing specific topics and foods of interest to students in the class. The course will culminate in a group project where students analyze a food of their choice and present their findings to the class.

What Is Plastics Engineering? And Why Should We Care?
Jennifer Lynch (Materials Science and Engineering), Thomas Nosker (Materials Science and Engineering)
Americans have a love-hate affair with plastic. We often look down on plastic imitations of natural products, yet we use plastic every day—and there are more than 10,000 kinds of plastic! This seminar focuses on the importance of plastics recycling and engineering for creating structural materials. We will discuss the development of recycled plastic lumber—an advancement that resulted in structural plastic lumber—and its infrastructure applications. Advanced materials research at Rutgers has resulted in patented and licensed recycled plastic blends used in railroad ties, pilings, I-beams, bridge substructure, and decking. The seminar culminates in a field trip to a vehicular bridge in New Jersey composed of a recycled plastic lumber blend or to a plant where recycled plastic lumber is manufactured.

Climate Change: Identifying Solutions Through Supply Chain Archaeology
Kevin Lyons (Supply Chain Management and Marketing Science)
Supply chain management and archeology are two academic disciplines that rarely cross paths. Archaeology is the scientific study of past cultures and the way people lived based on the things they left behind or discarded as post-consumer waste. Supply chain management involves the movement of man-made materials as they flow from their source to end-users (customers). In this course we will explore and learn how to combine these two disciplines to research and discover opportunities to address climate change impacts by studying product life/death-cycles, consumption, and our discards. We will conduct in-class and virtual archaeological digs at waste and dumpsites globally to look for climate impacts while identifying new eco-product design solutions.

Climate Change: Identifying Solutions
Kevin Lyons (Supply Chain Management and Marketing Science)
The seminar will introduce students to the study of climate change and its impacts on our planet. We will explore the causes and effects of climate change, as well as discuss strategies for mitigation and adaptation. Students will engage in hands-on activities, such as building models and conducting experiments, to gain a deeper understanding of the science behind climate change. This seminar is designed for students interested in environmental science, as well as those who want to make a difference in addressing the challenges of climate change.

Spinal Cord Injury and Stem Cells: Pushing the Frontiers, Raising the Ethical Questions
Patricia Morton, Martin Grumet, and Wise Young (Cell Biology and Neuroscience)
Rutgers is home to one of the leading centers for spinal cord injury research in the nation. Drawing on the expertise of our world-class research center, this seminar will introduce students to scientific, social, and political issues related to spinal cord injury and stem cell research. Leading experts will present lectures to address the challenges and state of spinal cord injury research, clinical trials and the China SCI Clinical Trial Network, the capabilities of stem cells, and the role of public advocates in scientific research and stem cell legislation in New Jersey. Special presentations by people who have spinal cord injuries will help students understand what it is like to live with a spinal cord injury.

Water Resources Engineering: A Close-Up Look at the Raritan River
Monica Mazurek (Civil and Environmental Engineering)
Water resources have been essential infrastructure for societies settling along the eastern coast of the United States. In particular, the Raritan River and its watershed has been crucial for the growth of commerce and communities in Northern New Jersey since before the American Revolution. This course combines field trips along the Delaware-Raritan Canal to examine hydrologic and chemical properties of the Raritan River. We will view US Geological Survey monitoring sites along the Raritan, examine ongoing water quality/water quantity parameters, and visit a drinking water treatment plant. We will explore Raritan River water property data using Geospatial Information Software (GIS) to understand the hydrologic and chemical information needed to manage the Raritan River as an essential regional resource for the present and future.

Experimental Physiology
Gary Merrill (Cell Biology and Neuroscience)
Physiology is a classic natural science. It is recognized by the Nobel Committee, in part, through the annual Nobel Prize in Physiology or Medicine. For example, Selman Waksman was awarded the Nobel Prize in Physiology or Medicine in 1952 for his discovery of streptomycin, the first antibiotic (a term Waksman coined) effective against tuberculosis. Waksman is the only Rutgers University faculty member (thus far) to have received this honor. Physiology is also an experimental science. Prof. Merrill’s interests have focused on the cardiovascular system and its regulation in health and disease. For example, experimentation in our laboratory at Rutgers was the first to demonstrate previously-unknown, but significant, cardiovascular effects of the popular analgesic, acetaminophen. In experimental animals, acetaminophen is both cardioprotective and cerebroprotective against the damaging consequences of ischemia/reperfusion injury, myocardial infarction, and simulated stroke. In this course, students will be exposed to a combination of lectures on classic cardiovascular physiology, discussion of related topics of interest to medicine, and innocuous experiments designed to improve one’s appreciation for the human cardiovascular system and how to care for it.

A Close-Up Look at the Raritan River
Monica Mazurek (Civil and Environmental Engineering)
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First-Year Seminars: Sciences
Illusions: A Royal Path to Brain Research
Thomas Papathomas (Biomedical Engineering; Laboratory for Vision Research)

In the famous “figure-ground” drawing, a black-and-white image appears to be a vase or two profiles facing each other. Which is it? The answer depends on factors we will study in this course. This seminar presents an interdisciplinary approach to brain research using visual and auditory illusions. First, we will examine how the brain organizes information that it gathers through sight and sound by using psychophysical methods and brain imaging. Next, we will use illusions in vision and audition to test the hypothesis that perception is not only an automatic, data-driven (“bottomup”) process, but it is also subject to cognitive, schema-driven (“topdown”) influences. Examples will include an “ever-ascending pitch illusion,” the “hollow mask illusion,” striking 3D art pieces (“reverspectives”) that appear to move as one moves in front of them, as well as some of the instructor’s own illusions. One of the classes will be a guided tour of the Zimmerli Museum.

Global Environmental Health:
Rutgers’ Global Reach!
Mark Robson (Entomology; Plant Biology and Pathology)

The world uses over five billion tons of pesticides every year, and twenty percent of these chemicals are used in the U.S., largely for agriculture. What are the consequences of pesticide exposure for human health and the overall health of our planet? In this seminar, we’ll discuss global environmental health issues, in particular those dealing with problems such as water and air pollution, food production and safety, and infectious and occupational diseases. Professor Robson will share experiences from developing countries in Southeast Asia and West Africa. Case studies and current research will be used as illustrations.

Understanding and Preventing Food Poisoning
Donald Schaffner (Food Science)

The United States Centers for Disease Control and Prevention estimates that foodborne pathogenic microorganisms cause 9.4 million illnesses and over 1,000 deaths in the U.S. every year. The 250 year history of Rutgers University includes one notable food poisoning event. In November 1964, a food poisoning outbreak struck Rutgers. More than 200 students were sickened by food served at a university dining hall, and in response to this event, a food safety program was put in place to prevent such an occurrence from ever happening again. Students in this course will learn how foods are tested for foodborne bacteria, and how food safety microbiologists and others assure the safety of food supply.

Radioactivity: What It Means for You
Stephen Schnetzer (Physics and Astronomy)

Radioactivity plays an important role in our everyday lives and impacts important societal decisions regarding our energy and climate future. It is important that the public be well informed about what radioactivity is and the effects it has on us. Despite its importance, there is a great deal of ignorance and misinformation surrounding radioactivity. In this seminar, we will explore the underlying nature of radioactivity. We will investigate its health and environmental effects and we will discuss its actual, as opposed to imagined, dangers. We will also learn some little known, amusing facts about radioactivity, including the origin of helium used in party balloons.

Introduction to Chaos and Pattern Formation
Troy Shinbrot (Biomedical Engineering)

In this seminar we will discuss several examples of chaos and pattern formation from physics, chemistry, and biology. We will explore examples such as the dripping faucet—which we will show undergoes a transition to periodic, at low water flow, to period doubling to chaotic as the flow rate increases. We will discuss the history of the field starting with Poincaré’s revelation that planetary orbits in the solar system are not stable, leading through Lorenz’s discovery that models for the weather exhibit strange attractors, and culminating in modern studies that reveal chaos and pattern formation in the heart. The seminar will be example-oriented, using simple models that only require elementary algebra.

The Climate Change Debate:
Is It Knowledge or Politics?
Elisabeth Sikes (Marine and Coastal Science),
Cymie Payne (Human Ecology)

Ninety-seven percent of scientists agree: climate change exists, it is human-caused, we can do something about it. Why haven’t we solved the problem? Scientists might say “politics have gotten in the way of the knowledge”—Politicians might say “how does this affect my constituents?”—Lawyers might say “once you’ve decided what the problem is, let me know: I can help you organize the behavior of billions of people.” What do you think? What do you know? Why do you think you know it? We will explore the current climate science, the link between science, law, and what the global community wants. We will do this through discussion, reading and virtual visits to oceanographic sea cruises, labs and international negotiation sessions. We will see where our knowledge comes from and how it’s used to understand global warming and address its drivers and consequences.
Food for the 21st Century: Can We Feed 11 Billion People?
Paul Takhistov (Food Science)

Feeding the world’s growing population is not an easy task. It is estimated that there will be 11 billion people on the planet by 2100. Can we produce enough food for all people sustainably and can we afford it? With modern science and technologies the food industry has gained a whole new set of tools to improve certain properties of food and associated processes that are necessary for food production. However, food production should never come at the expense of human health. In this seminar we will discuss principles of the food supply chain, the modern approaches to design food products, and the ways to create a sustainable food future. We will also discuss applicability of new sustainable sources of food such as algae, insects and biologically derived polysaccharides as food supplements. During the course, students will have an opportunity to prepare some formulations using new food materials and technologies, such as edible films, 3D printing, and more.

11:090:101 section 12 index 11529

Green-Fluorescent Protein: Applications of this Amazing Protein
William Ward (Biochemistry and Microbiology)

Green-fluorescent protein (GFP) is one of the most important reporter proteins in all of biology and biotechnology. Unlike the chromoproteins, hemoglobin, cytochrome C, and chlorophyll-containing plant proteins, GFP is the only chromoprotein that makes its own chromophore. In this seminar, we will discuss the importance of this feature for molecular biologists who can genetically label any colorless protein, or any cell, tissue, organ, or organism with a single gene that codes for GFP. For example, labeling cancer cells with the GFP gene allows a scientist to follow metastasis wherever the cancer cells move. The label is genetically replicated, so all progeny cells are brilliantly fluorescent. You may have seen photographs of fluorescent plants, fish, pigs, or cats. More than just novelties, these fluorescent plants and animals produce offspring that are equally fluorescent. Join this seminar for an opportunity to work with an expert in the biochemistry of GFP.

11:090:101 section 13 index 11596

Metabolism: From Lavoisier to Metabolomics
Malcolm Watford (Nutritional Sciences)

How often have you heard the statement “I am fat because I have a slow metabolism”? In this course we will study all aspects of metabolism from the first studies of Lavoisier in 1776, when he placed a guinea pig, named Gina, in a calorimeter, to the present day field of Metabolomics. We will consider how metabolism is changed in conditions such as obesity, diabetes, and cancer, and how understanding such changes may lead to innovative treatments. Each topic will begin with some historical details, but the main part of our discussions will focus on the potential of individualized medicine and nutrition to maintain a healthy metabolism. Topics will include: Brown Fat, the fat that makes you thin; Leptin, the cure for obesity (that wasn’t); the Warburg effect in Cancer cells; and treatment of diabetes by gene therapy to change metabolism. The answer to the opening question posed here? A slow metabolism is not the reason you are fat, the evidence for which will be discussed in class.

11:090:101 section 14 index 11614

Jingang Yi (Mechanical and Aerospace Engineering)

Most people know that robots are automated machines that do our bidding, including cleaning our floors, building our cars, and traveling millions of miles to other planets to do our research on alien environments. In this seminar we will explore both the hardware aspects of a robot (including structure, function, components, and materials), and the software side of robotics (the brains behind how a robot functions). Of course, no robotics course would be complete without the fun of building robots in the lab, so anticipate that too! In this interactive seminar, you will find out what is out there in the commercial world of robotics as well as what is being developed in the university.

01:090:101 section 45 index 21008

Harry Potter and Potion-Making Science
Lei Yu (Genetics and Center of Alcohol Studies), Ying Sun (Visiting Professor, Center of Alcohol Studies)

Humans have been using nature-made ingredients (herbs, extracts of plants and animals, and minerals) to treat various diseases and disorders since ancient times. In modern day science, medicine-making is one of the largest industries and job markets for the college-educated. In this seminar, we will use examples of potion-making from the Harry Potter book series as a literary platform to introduce scientific approaches for medicine-making science and processes. This class will involve extensive class participation and discussion. The focus will be to introduce the students to medical research and to develop skills in critical thinking.

01:090:101 section 71 index 12616
ABOUT BYRNE SEMINARS

The First-Year Seminars at Rutgers–New Brunswick were launched in fall 2007, and the program was re-named the Byrne First-Year Seminars in fall 2008 to honor a generous donation by Mr. and Mrs. John J. Byrne. Mr. “Jack” Byrne graduated from Rutgers College in 1954. Byrne Seminars were created to realize the Byrne family vision of introducing students to research faculty in a small seminar setting at the outset of their academic journey.

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