

Derek Ferris and Dr. Rob Hellstrom on the Melting Effects of Wind in the Tropical Alpine Valley of Peru.

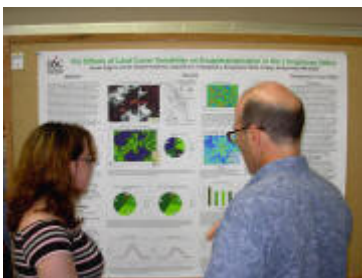


Derek Ferris is a senior geography major from Berkley, MA where he graduated from Bristol-Plymouth Regional Technical High School. His ATP research focuses on the cause behind the rapid melting of glaciers in the Peruvian Andes. His project, entitled "Regional vs. Local Impact of Wind on Glaciers in the Andes Mountains," looks specifically at the influence of alpine topography on warming in the northern Andes of Peru. "Using Microsoft Excel, Integrated Data Viewer, and GIS, I observed different weather patterns such as wind direction and temperature to help gain a better understanding of the area's typical diurnal cycle. This data is a useful for understanding the dynamics of mountain meteorology and the numerous affects that melting glaciers have on the landscape," says Derek

His mentor, Dr. Robert Hellstrom Associate Professor of Geography at BSC for nine years discusses the significance of Derek's research: "Derek is addressing an important concern that has little attention in Tropical Alpine valleys; the impact of local versus regional scale weather patterns. The results will advance our understanding of "U" shaped valleys on the energy and water balance in tropical alpine regions." Dr. Hellstrom's own research interests are in microclimatology, particularly areas with snow and ice cover. Over the past nine years at BSC he has developed cost-effective, automatic observation networks for weather observations in the Cascade Mountains, Peruvian Andes, Harvard Forest, Southeastern MA, and Antarctica. Last year, he was awarded a Presidential Fellowship in 2007 to work with three students in development and deployment of an automatic weather station network to estimate the impacts of urban development on evaporation and climate in southeastern Massachusetts.

Derek's plans for the future: "The work that I'm doing this summer will have a direct impact on my future plans. This project is a stepping stone for graduate school, where I would like to further my education in Geography, ultimately teaching the subject area at the college level."

They've Got it Covered: Aimee Higgins and Dr. Rob Hellstrom Look at Ground Cover and the Hydrological Cycle in Peru.



Aimee Higgins is a Senior Geography major from Norwell, MA where she graduated from Norwell High School. Her ATP research focuses on evapotranspiration and how it varies within a tropical alpine valley. Her project, entitled "The Effects of Land Cover Variability on Evapotranspiration in the Llangunuco Valley" looks specifically at land cover and its effects on the hydrological cycle in

Peru, specifically in the Andes Mountains. "The purpose of doing this research," Aimee explains, "is to help prove that ET [evapotranspiration] is a part of the Andean hydrological cycle as it has been thought to be negligible in tropical regions."

Her mentor, Dr Rob Hellstrom professor of Geography at BSC for eight years explains the depth of the research, "Evaporation loss from the surface is a large portion of the hydrological cycle and predicting how much water remains for consumptive use in the future is a major area of concern in Peru. Aimee is using geographic information systems (GIS), satellite images, and weather data from Peru to determine how land cover influences evaporation during the wet and dry seasons. Results of this project with help hydrologists and meteorologists more accurately predict water resources in the future." Dr. Hellstrom's own research interests are related to the impacts of local land cover and land use on climate change. "I design automatic weather stations to measure weather patterns in areas with complex land cover, including mountains, urban vs. natural areas, and regions with glaciers or seasonal snow cover," he explains. Dr. Hellstrom has collaborated with several leading scientists around the United States and in Europe to develop projects related to climate change and hydrological cycles. "Research work by students at BSC and other universities," he says, "are essential parts of our success."

"I feel the most beneficial part of this summer research is to learn how the research process works within my field. I will be able to use what I have learned in graduate school," Aimee says.

Making an Anti-Federal(ist) Case Out of Things: Christopher Hallenbrook and Dr. Jordon Barkalow, and CATO.



Christopher Hallenbrook is a senior from Halifax, MA and a graduate of Silver Lake Regional High School. His ATP research focuses on the intellectual origins of Anti-Federalist opposition to the Constitution. His project, entitled "Exploring the nature of Anti-Federalist Thought: Republicanism and Liberalism in the Political Thought of Cato" looks specifically at a series of letters published in the New York newspapers under the name of Cato that urged the citizens of New York to reject the Constitution. Chris further

explains, "I am comparing the letters to three works that represent major schools of thought considered to have had an influence upon the Founding Fathers." He continues, "My goal is to shed light on the origins of the principles behind Anti-Federalist opposition to the Constitution."



Christopher's mentor, Dr. Jordon Barkalow professor of Political Science at BSC for five years explains the intrigue of this research, "While scholars have reached a consensus on the nature of Federalist thought, there is no such consensus with regard to the political theory articulated by the opponents of the U.S. Constitution. Chris's project is interesting because by focusing of the Anti-Federalist writer, Cato, Chris allows for us to test for the influence of three other Catos (Plutarch, Joseph Addison, and Trenchard & Gordon). The conclusion that Chris draws in his study could go a long way to not only clarifying the nature of Anti-Federalist thought, but could speak to the

Anti-Federalists political legacy." Dr. Barkalow's research interests intersect with Chris's work. He explains, "I use the writings of the Anti-Federalists in my own work on American citizenship and see their writings as essential to our understanding of the Constitution, the Bill of Rights, and American political thought more generally. The Anti-Federalists are particularly important to our understanding of the political doctrines announced on the eve of The Civil War."

Chris plans to use this research as a major portion of his honors thesis. He plans to pursue graduate school and credits the ATP experience with preparing him for such an endeavor. "My project has also helped to clarify the sort of research I want to do in pursuing an academic career."

Keeping Her Eye on the Ball: Kelly Medeiros and Dr. Cindy King-Frode look at ENDR and Trauma.



Kelly Medeiros is a senior social work major with a minor in Psychology from Acushnet, MA and a graduate of Fairhaven High School. Her ATP research focuses on a therapy called Eye-Movement Desensitization and Reprocessing (ENDR) and its use in treating childhood trauma. Her project, entitled "Eye-Movement Desensitization and Reprocessing: Implementation and Utilization of EMDR as a Treatment for Trauma" looks specifically at how therapists have been introduced to EMDR, how they decide which clients to use it with, which modifications they may have made to the standard protocol, which approved variations to the protocol have been found to work best, and how effective they have found this method of treatment to be in treating childhood trauma. "It's a relatively new and controversial method of treating trauma," she says, "And as a future social worker who plans to work with children any new knowledge that I can gain on how to help those who have been traumatized will be extremely useful." Her mentor, Dr. Cindy King-Frode, professor of Social Work for fifteen years, mentored Kelly on her project. Dr. King-Frode encouraged Kelly to use exploratory methods to learn about the effectiveness of social work and programmatic interventions. "The findings from exploratory research," she says, "can serve to inform social work practitioners and others of strategies that are effective with particular client populations. They may also reveal limitations of particular methods."

Kelly is confident that her ATP research has prepared her for what she will face in graduate school. "I'm excited that I've been given an opportunity to test out my research and interviewing skills prior to attending graduate school; I've been able to meet with many professionals in the field as well."

It's Not Like it's Rocket Science; Oh Wait, actually it is: Christopher Cepero and Dr. Thomas Kling and the accuracy of Weak Gravitational Lensing.



Christopher Cepero is a Junior Physics major from East Bridgewater where he graduated from East Bridgewater High School. His ATP research focuses on the accuracy of weak gravitational lensing. His project, entitled "Accuracy of Weak Gravitational Lensing" looks specifically at the accuracy of the current model of weak gravitational lensing, the thin lens approximation. He explains, "The thin lens approximation takes into account the state of light (in terms of its distortion) at the start of its path, at the point it passes the lensing object, and at the end of its path." Chris continues, "The goal of my research is to understand the state of the light

throughout the entire duration of its travel which should be more accurate, and compare it with the current approach."



His mentor, Dr. Thomas Kling professor of Physics for nearly five years at BSC, elaborates on the research Chris is conducting, "Chris is writing numerical C++ code that continuously integrates the geodesic deviation equation of general relativity. The output of his code will be an exact version of the thin-lens approximation model that he can use to determine the accuracy of the approximation." Dr. Kling's research interests focus on the application of general relativity to gravitational lensing. He examines the the accuracy of the current approaches and develop new ones that avoid the existing approximations. He adds further, "In my research, I work with undergraduates to perform real research calculations. They are involved in real research problems that I am considering. By working collaboratively with them, we will come to know a little more about gravitational lensing theory." Dr. Kling has coauthored papers with two former ATP students that have been published in top peer-refereed journals.

Chris feels that his research this past summer have provided him with a deeper understanding of the concepts of Physics that he will need no matter what field of Physics he decides to enter when applying to a graduate program. Currently, he is entertaining the idea of becoming an astronaut. I'm learning from every aspect of the research," he adds, "and the experience itself will be helpful for future endeavors. It has also provided me with the opportunity to take what I've been learning in the classroom and apply it to the field."

What Goes In Must Come Out: Jeff Carboni and Dr. Don Padgett, Reptiles, and Ecosystems.

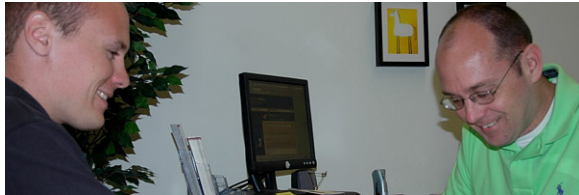


Jeff Carboni is a Senior Biology major from Wareham, MA, and a graduate of Coyle Cassidy High School. His ATP research focuses on the refining the stomach flushing procedure for the painted turtle. His project, entitled, "Dietary Consumption of the Eastern painted turtle with special interests in seed consumption," looks specifically at the collection of fecal samples and identification of all animal and plant matter in the samples to its lowest possible taxa. "One of my main interests in Biology is with freshwater ecosystems and reptiles," he says, "therefore, this project will add to my knowledge and experience of the subjects."



Jeff's mentor, Dr. Donald Padgett, associate professor in the Biology department for nearly ten years, explains the importance of the research, "For aquatic plants, bodies of water are like islands--isolated places that presumably are difficult to venture from to seek out and establish new colonies in other ponds. So, for some aquatic plants, like water lilies, aquatic turtles may be an effective go-between that allows the plant species to establish itself in nearby ponds." Dr. Padgett's own research centers on the ecology and evolution of aquatic plants, particularly the pond lilies. "The research of my students directly addresses questions I've had about seed dispersal in pond lilies," Dr Padgett adds, "Their work adds one more piece to the puzzle, so to speak, about how plants have evolved to interact with and utilize animals for their own survival."

For the Bible Tells him so: Bruce Hunt and Dr. Jordon Barkalow Examine Biblical References in Early American Political Speeches.



Bruce Hunt is a Senior Political Science major from Plymouth, MA and a graduate of Brockton High School. His ATP research focuses on how the early American clergy employed the Bible in the printed political sermons of the colonial and founding periods. His project, entitled "What Happened to God?": An Empirical Assessment of the Continuity Thesis in American Political Thought" looks specifically at existing studies that have found the Bible to be of significant importance to American Political Thought. Bruce explains further, "By examining specifically how different portions of the Bible are used in different situations and contexts, my hope is to develop a deeper understanding of the Bible's relationship with American Political Thought."

Bruce's mentor, Dr. Jordon Barkalow professor of Political Science at BSC for five years elaborates on the reach of Bruce's project, "Two things stand out about Bruce's project," he explains, "The first is the empirical approach he is taking. Such an approach is not the standard in the discipline, but it offers the most systematic way of assessing the decline of religion in American political thought. The second is the potential of the project to contribute to our understanding of American political thought. More specifically, scholars have long recognized the shift from a religiously inspired political theory to a secular, liberal theory. What they have not been clear about is what has allowed this to happen. Bruce's project speaks directly to this concern." Dr. Barkalow's primary research interest lies in American political thought and focuses on the nature of American citizenship in particular. "Bruce's project," he says, "is directly related to my own research. Specifically, if Bruce's hypothesis is confirmed, he provides direct evidence for my argument that American citizenship is properly understood in liberal terms and not religious or some other way."

Bruce plans to incorporate his summer research into his honors thesis which he will begin this fall. "This project has given me a profound interest in the relationship between religion and politics. It has really opened my eyes to the challenges involved with academic research and just how much mental and emotional strength is required to persevere."

Beyond the Chore Chart: Deborah deRaadt and Dr. Cindy King-Frode Look at Time Management in Families with ADHD Families.



Deborah deRaadt is a Senior Social Work major from Vancouver, Canada where she attended Point Grey Secondary School ('78). Her ATP research focuses on the daily tasks and challenges presented to the parents of children diagnosed with ADHD. Her project, entitled "The Challenges of Task and Time Management for the Families of Children with ADHD: Strategies and Successes" looks specifically at the difficulties that parents of ADHD children are faced with on completing tasks and managing their time. "The aim of my study," Deb explains, "is to interview between 10 and 15 families that have children with a confirmed diagnosis of ADHD to examine their experiences of dealing with the daily challenges of homework and chores. I want to explore which strategies they have used, both successfully and not, to aid their child with task completion and time management issues."

Dr. Cindy King-Frode, professor of Social Work for fifteen years, mentored Deb on her project. She explains the significance of Deb's research, "The findings can serve to inform social work practitioners and others of strategies that are effective with particular client populations. As well, they may also reveal the limitations of particular methods." Dr. King-Frode's research interests focus on domestic violence, specifically the efficacy of particular interventions and more generally, in program evaluations of community based programs.

Deb's interest in the project was peaked by the increase in diagnoses of ADHD within the last decade. She finds that her research experience will help her through her graduate studies and beyond when she becomes a school social worker, "I am exploring how best to help students with ADHD address the challenges in ways that work."

Women's History in the Making: Melanie Byam and Dr. Erin O'Connor explore 19th century Latin American Women's Travel Narratives.



Melanie Byam is a senior History major from Bridgewater, MA where she attended Bridgewater-Raynham regional High School. Her ATP research focuses on the methods that Latin American women used to define their place in the nation and advance their status and power. Her project, entitled "Women through Women's eyes: Past and Present," looks specifically at how women from other parts of the world helped to define the status of Latin American women during the 19th century, using the travel logs of their time. "I will be creating my own travel log in Ecuador this summer," she says, "to compare my findings to the writings of the 19th century." Her paper, which is going to be developed into her thesis, considers closely how one's own culture influences and biases evaluations of other cultures.



Her mentor, Dr. Erin O'Connor, associate professor in the History department for nearly six years, explains further, "Melanie is exploring this theme through the lens of travel narratives and experiences. She lived in Cuenca, Ecuador for three weeks, conducted some interviews with women on society, and kept a journal of her own observations and reactions to gender dynamics in current-day Ecuador." Dr. O'Connor's own research interests focus on gender, ethnicity, and nation-state formation in 19th century Latin America, with a specialty in Ecuadorian history. She says about Melanie's research, "her keen interest in the intersection of gender and culture overlapped nicely with my own enthusiasm with the study of history."

Shedding Light on What the Damselfly Likes Best with Chris St. Andre and Dr. Darcy Boellstorff



Christopher St. Andre is a Senior Biology major from Whitman, MA where he attended Whitman-Hanson Regional High School. His ATP research focuses on the habitat preferences of the damselfly. His project, entitled, "Habitat Preferences of Breeding Adult Damselflies: *Calopteryx aequabilis* and *Calopteryx maculate*," looks specifically at locating Damselflies and recording the light intensity where they are found. He says, "Using the light intensity values I will create a model using Geographic Information Systems (GIS) software to predict where damselflies should be found and where they should not be found, along the Taunton River."



His mentor, Dr. Darcy Boellstorff associate professor in the Geography department since 2005, has guided Chris through the method and approach to his research. She says, "I think the most important part is the process. I'm interested in similar types of geographic modeling using GIS in natural resource applications, especially soil properties and land use; the connection between Chris' work and my own interests lie in the approaches and methods."

Of Pond Lilies and Painted Turtles: Dan Schepis and Dr. Don Padgett



Dan Schepis is a Senior Biology major from Norton, MA where he attended Norton High School. His ATP research focuses on the influence local turtles have on the distribution of floating vegetation, specifically Pond-Lilies. His project entitled, "The Role of Eastern Painted Turtles (*Chrysemys picta picta*) in Influencing the Distribution of Pond-Lily (*Nuphar variegata*) by Seed Ingestion in Southeastern Massachusetts," looks specifically at the process by which seeds are distributed through ingestion by an animal. Dan says, "Working with live animals and plants has added complications and unforeseen roadblocks that had to be overcome in unique ways. The regular interactions with live animals, including massive snapping turtles, in the field and the troubles of collecting plant and seed specimens made each step of the process distinctive and exciting." This is Dan's polite way of saying that dealing with turtle poop had its downsides.



Dan's mentor, Dr. Donald Padgett, associate professor in the Biology department for nearly ten years, explains the importance of the research, "For aquatic plants, bodies of water are like islands-isolated places that presumably are difficult to venture from to seek out and establish new colonies in other ponds. So, for some aquatic plants, like water lilies, aquatic turtles may be an effective go-between that allows the plant species to establish itself in nearby ponds." Dr. Padgett's own research centers on the ecology and evolution of aquatic plants, particularly the pond lilies. "The research of my students directly addresses questions I've had about seed dispersal in pond lilies," Dr Padgett adds, "Their work adds one more piece to the puzzle, so to speak, about how plants have evolved to interact with and utilize animals for their own survival."

Dan credits receiving the ATP grant for the invaluable experience he has received, "Throughout the ATP summer grant project I have gained confidence and experience that will be valuable during future academic and professional endeavors."

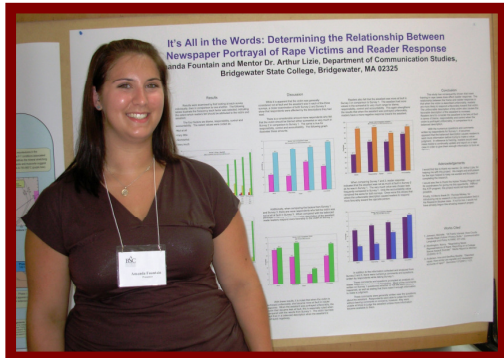
Images May Appear Larger...: Louis Bianchini and Dr. Thomas Kling, General Relativity, and Weak Gravitational Lensing.



Louis Bianchini is a Senior Physics and Mathematics major from East Bridgewater, MA. and graduate of Bridgewater-Raynham Regional High School. His ATP research focuses on the distortion of beams of light as they travel through space. His project, entitled "Modeling Image Distortion Using the Optical Scalar Equations" looks specifically at the continuous distortion of light beams as they travel through curved space-time, caused by the presence of a large body of matter. "This effect," he says, "is referred to as weak gravitational lensing. And, by studying the optical scalar equation of general relativity," he continues, "I will be performing calculations which show how the light emitted from a distant point source is distorted and rotated as it passes near the large body of matter, or gravitational lens." Lou adds, "This research project is similar to learning a new branch of Physics since the concepts of general relativity are new to me." He adds further, "This particular topic is interesting, it's not easy to think of light as being affected by gravity."



Lou's mentor, Dr. Thomas Kling professor in the Physics Department for nearly five years explains the importance of Lou's research, "His calculations will provide a completely new way to analyze certain aspects of gravitational lensing that no one has done before." Dr. Kling's research interests focus primarily on the application of general relativity to gravitational lensing. He examines the the accuracy of the current approaches and develop new ones that avoid the existing approximations. He adds further, "In my research, I work with undergraduates to perform real research calculations; they are involved in real research problems that I am considering. By working collaboratively with them, we will come to know a little more about gravitational lensing theory." Dr. Kling has coauthored papers with two former ATP students that have been published in top peer-refereed journal.



Research on Framing in Media by Amanda Fountain with Dr. Arthur Lizie

Amanda Fountain is a senior Communications major from Middleboro, MA, where she graduated from Middleboro High School. Her ATP Summer Research Grant funds work on framing in media. Her project, entitled “It’s All in the Words: Determining the Relationship Between Newspaper Portrayals of Rape Victims and Reader Response,” looks specifically at

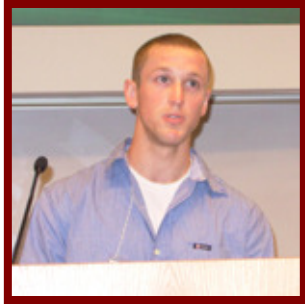
the effects of “spin” in rape cases. She looks at the ways victims and suspects are held responsible for the act of rape via framing. Dr. Arthur Lizie, Amanda’s mentor, describes framing as the way in which a story is presented. “For example, is that person who just killed someone else a freedom fighter or a terrorist? Same person, different news frames,” Dr. Lizie explained.

What is significant about Amanda’s research project is best said by Dr. Lizie: “We need to understand how our word choice influences how and what we communicate to ourselves and others. More specifically, it’s important that the media respects the rights of all parties involved in legal pursuits, especially those involving potential physical and psychological damage, such as rape.”



Dr. Lizie, an assistant professor of Communication at Bridgewater for the past seven years and mentor to numerous undergraduates, shares Amanda’s interest in the role framing plays in media. This summer Dr. Lizie is working on a documentary film entitled “What Happened to Tom,” funded in part by a BSC CART Summer Research Grant. His film “investigates how language frames the ways in which we understand ourselves and our environment, including our friends.”

About her summer research, Amanda had this to say: “the experience of taking on such an extensive research project has increased my enthusiasm and willingness to challenge myself in coursework. It has been both challenging and exciting.” Amanda’s project involves surveying readers, developing the survey instrument, and analyzing the data culled from her survey. “These are skills important to my future in graduate school.”



Research on the Wind Power Debate by Joseph Coleman with Dr. Robert Wolk.

Joseph Coleman is a senior Business Management major from Barnstable, MA, where he graduated from Barnstable High School. His ATP Summer Research Grant funds work on the wind power debate. His project entitled, “Colliding Fronts: Making Sense of the Wind Power Debate” looks specifically at how public opinion has been influenced by the marketing tactics of several groups. Joe says of his project, “It is my intention to gain exposure from completing this project. I will use that exposure to add depth to my resume in regard to entering the field of business management or continuing my studies as a graduate student.”

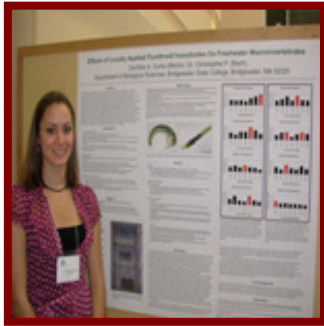


Dr. Robert Wolk, assistant professor in the School of Business at BSC for the past eight years, shares Joseph’s interest in how technology interacts and affects society. He says, “The overall theme of how technology interacts with and affects society is a central theme to my research. Joseph is exploring how the World Wide Web is used in the Wind Farm Debate for Nantucket Sound.

A survey of BSC students will complement his secondary research.” Dr. Wolk recently mentored another ATP summer grant recipient whose research won “Best Paper” at the Information System Educators Conference in Dallas, Texas.

Joseph believes that his work will be well received. “The work I have done has been rewarding,” he says, “It is interesting to see the manner by which technology, such as the wind turbines, affect society. My project examines both the content of the information that is marketed to the public as well as how the public reacts to it. A project of this size has been a challenge, the guidance and support of Dr. Wolk has been crucial throughout this past summer.”

Research on the Effect of Pesticide on Non-target Species such as Freshwater Insects and Crustaceans by Caroline Curtis with Dr. Christopher Bloch.



Caroline Curtis is a senior Environmental Biology major from South Hadley, MA where she graduated from South Hadley High School. Her ATP Summer Research Grant funds work on the effects that pesticide have on non-target freshwater species such as insects and crustaceans. Her project, entitled “The Effect of Anvil 10+10 Run Off on Non-Target Species,” looks specifically at the amount/concentration of pesticide required to cause fatalities in non target species. She conducted her research by collecting freshwater macro invertebrates and systematically exposed them to varying dilutions of pesticide. Caroline hopes to collect enough data to establish a range of concentrations that is fatal for macro invertebrates, and compare that to the amount that is potentially reaching freshwater systems following a spray.



Dr. Christopher Bloch, associate professor of Biological Sciences, discusses mentoring Caroline’s work, “Caroline hopes to determine what concentration of Anvil is necessary to kill non-target species, and whether this concentration is greater than or less than what typically enters water sources. This information is important to determine how well current regulations work and will be useful for the development of future policy. In addition to the important management implications of Caroline’s work, I find it interesting because of its broad-scale implications for the structure and functioning of aquatic ecosystems. If a great deal of mortality occurs, there could be considerable changes in species composition, susceptibility to invasion by non-native species, and the rates of important ecological processes such as nutrient cycling.” Dr. Bloch conducts research on the ecology of animal populations. He has co-authored three papers on research he has conducted with the Luquillo mountains Long-Term Ecological Research (LTER) program in Northeastern Puerto Rico.

Caroline credits the ATP research project for her readiness to continue work in her field, “Running this research project from conception to completion is an experience that I could not have attained with any other program at the undergraduate level,” she continues, “I feel that this program is not just about finding results and presenting them, but instead it emphasizes the cultivation of tools, skills and critical thinking, all of which are essential for continuing work in every field, but are often overlooked in regular course work.”



Research on Different Techniques used by Modern Playwrights in Creating a One Act Play by Colleen Farrell with Dr. Ann Brunjes.

Colleen Farrell is a senior English and Music major from Brockton, MA where she graduated from Brockton High School. Her Summer Research Grant funds work on analyzing the different techniques used by modern playwrights in creating a one act play. Her project, entitled, "Mourning

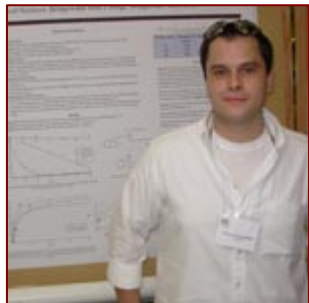
Recap", is a one act play that she wrote and directed after researching the various structures and dialogues used by modern playwrights.



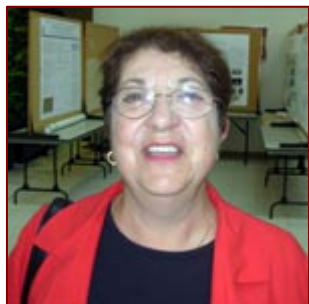
Dr. Ann Brunjes, and associate professor in the English Department for ten years and Chair of the English Department, mentored Colleen on this project: "Colleen likes pushing her limits and testing herself. In addition to writing the play, she assembled the cast, chose the music, the sets, and directed the whole shebang. It's impressive. She's impressive." Colleen is hoping to use this piece as her Honors Thesis. "Having an Honors Thesis will make me a more competitive candidate for a graduate program. This play has

helped me to create a stronger portfolio," she says, "The play started off as a challenge for me, a project I needed to complete and understand in its entirety. As the summer progressed, I saw that this summer was not about finding a cure for a deadly disease and having it ready for mass production but, instead was about learning through experimentation and exploring new ideas."

Research on the Effects of a Synthesized Compound as an Enzyme Inhibitor to the Parasite that Causes African Sleep Sickness Disease.



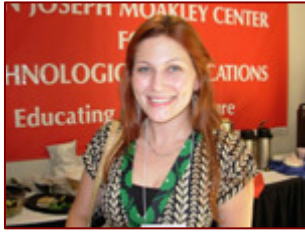
Pedro Garcia daSilva is a junior Biology major-Cell/Molecular Concentration from Lisbon, Portugal where he graduated from a private High School in the center of the city called, Colegio Moderno, or Modern College. His ATP Summer Research Grant funds work on the analyzing of compounds that show some potential as new compounds to treat African sleeping sickness. His project, entitled, "Effects of Methyleneoxindole (MOI) Derivatives on Trypanothione Reductase Activity and Viability of Procyclic Trypanosoma brucei" looks specifically at how a compound which was originally synthesized by a professor in the Chemistry Department serves as an enzyme inhibitor in the parasite that causes African sleep sickness disease. Pedro says that the relevance and importance of this study is that if the enzyme proves to be a good inhibitor, it could represent a cure for an otherwise incurable disease which affects both humans and domesticated animals.



Dr. Patricia Mancini, associate professor of Biological Sciences for six years at BSC mentored Pedro on his project. She explains, "Pedro is examining the cytotoxicity (ability to kill) of glutathionyl methylene oxindole and is analyzing as to whether or not the mechanism of killing involves inhibition of a key metabolic enzyme of the parasite." She adds, "It has provided him with the opportunity to experience the complicated process by which new drugs are researched rational drug design and exposes him to the strategy understanding a pathogen's biochemistry as well as its physiology is the route to finding ways to prevent or cure infectious disease." Dr. Mancini has mentored students who have presented both at local and national meetings of The American Society for Microbiology and The American Chemical Society. Her students have also participated in NCUR and in the CUR Poster on the Hill session in Washington, DC.

Pedro credits the ATP research project with serving a double purpose of expanding his theoretical knowledge as well as being able to use it in a lab environment. He feels that this experience has given him a peek into what grad school will be like for him, "even though the work is long and very meticulous, I am more motivated than ever to go to grad school."

Research on the Relationship between Propaganda, Politics, and Art in Iran, Palestine, and Israel by Nicole Rando with Dr. Beatrice St. Laurent.



Nicole Rando is a senior Art major with concentrations in both Art History and Fine Arts from Berkley, MA where she graduated from Bristol-Plymouth Regional Technical High School. Her ATP Summer Research Grant funds the study of the relationship between propaganda, politics, and art in the Middle East. Her project entitled, "Political Art and Propaganda in the Modern and Contemporary Middle East." looks specifically at the use of politics and propaganda and their social consequences as interpreted and documented by artists living in the Middle East while also exploring the works of contemporary fine artists from the region who have been forced to live in exile.



Dr. Beatrice St. Laurent, assistant professor in the School of Arts and Sciences, mentored Nicole's research. She adds, "The topic is interesting because there is no established methodology or examination of the topic in past or current research of these regions of the Middle East and there has been no comparative examination of these regions."

Dr. St. Laurent's research is focused on the Art History of the Middle East. She recently spent much of the summer in Jerusalem photographing the Dome of the Rock, among other things. "My current research is on the politics of the restorations of the Dome of the Rock in Jerusalem from 1560 to the present.", she explains. Dr. St. Laurent's travel was partially funded by a Marion and Jasper Whiting Foundation Grant as well as a CART Summer grant which supported her travel to the Library of Congress to conduct supplementary research. She is currently working on creating a program for study in Istanbul with colleagues at the Istanbul technical University.

Nicole found her ATP summer research experience aided her in developing a methodology and establishing a research timeline. While conducting her research, Nicole had the opportunity to visit a collection of Iranian Art at New York University and has spent many hours in the Widener Libraries at Harvard University.

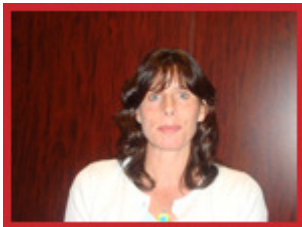
Research in Physical Education by Christopher MacPherson with Dr. Karen Pagnano-Richardson.



Christopher MacPherson is Post Bac Physical Education major from North Eastham, MA. After graduating from Wachusett Regional High School in Holden, MA, he went on to complete a year at Worcester Academy before enrolling at Skidmore College where he graduated in 1996 with a degree in Physical Education. His ATP Summer Research Grant funds research in the field of physical fitness as it pertains to middle school students. He investigates how students in grades 3-6

respond to the physical education program that is in place at intermediate grade levels. His study is to examine what students know about fitness, how they feel about using high-tech equipment, such as heart rate monitors, as well as how teachers can best implement the program to their ever-growing class size.

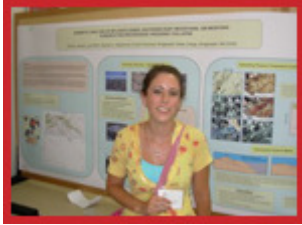
Chris, who has future plans to teach Physical Education, feels he is getting as much out of his research as he is giving. Because he wishes to teach in the future, he can put his research experience to use once he is in the classroom setting full-time, maybe even using models that were created based on his research. Chris's mentor, Dr. Karen Pagnano-Richardson describes Christopher's work as being able to, "provide insight into how an effort to improve a physical education program is working for both the students and the teachers. His work will provide teachers with some clear recommendations for designing fitness units of instruction using high-tech equipment that are both meaningful and do-able, an important cause given that childhood obesity is on the rise in US." Dr. Pagnano-Richardson has held a keen interest in the role that school-based physical education plays in preventing childhood inactivity and obesity. She has worked for the last four years on a grant sponsored by the CDC its purpose is to promote physical activity in middle school students.



Dr. Pagnano-Richardson has been teaching at BSC for four years in the Movement Arts, Health Promotion and Leisure Studies Department, where she teaches physical education pedagogy classes to both undergraduate and post-bac students. More of her research can be found in the following works: *Journal of Physical Education, Recreation, and*

Dance (2007), *Teaching Elementary Physical Education*, 17, 4, 12-14 (2006), *Journal of Teaching in Physical Education New Zealand*, 39(1), 34-46 (2006), and *Journal of Teaching in Physical Education*, 24(4), 302-325.

Research on Mylonite Zones in The Southern Ruby Mountains, Montana by Jessica Sousa with Dr. Michael Krol.



Jessica Sousa is a senior Earth Science major from Raynham, MA where she graduated from Bridgewater-Raynham Regional High School. Her ATP Summer Research Grant funds work on the analysis of Mylonite zones in the Southern Ruby Mountains in SW Montana. Her project, entitled, "Kinematic Analysis of Mylonite Zones, Southern Ruby Mountains, SW Montana: Evidence for Proterozoic Orogenic Collapse," looks specifically at the aspects of Mylonites to determine the sense of motion that they underwent also using key minerals found within the rock to determine the pressure and temperature conditions of deformation across the zones where they are present. Jessica plans to develop a general tectonic model for the region as part of her research based on her findings.



Dr. Michael Krol, an associate professor of Earth Sciences at Bridgewater for six years, mentored Jessica on her research. He discusses the project, "This summer's study will shed light on the significance and kinematic history recorded in several ancient fault zones within the Ruby Mountains of Montana. From this we can reconstruct the tectonic history this region experienced 1.7 billion years ago." Dr. Krol also explains that the work Jessica has conducted this summer involves geologic field mapping of the rocks and their geographic distribution throughout the study area, as well as a microscopic investigation using shear-sense indicators to determine the movement history. Dr. Krol has mentored 8 students in the ATP program and has taken 6 students into the field. He says, "I strongly believe in getting students involved in real scientific research and letting them immerse themselves into a project."

Jessica describes her experience, "This has been a wonderful opportunity and I am grateful to have been awarded. Working on this project has increased my interest in Geology even more and I am excited to continue. I want to thank the Adrian Tinsley Program and its sponsors for providing students with such a wonderful and rewarding opportunity. This has enabled all of the students working under the program to take their undergraduate careers to the next level and has provided them with a great stepping stone for all of their future endeavors."

Research on How the Global Economic System has Impacted Children in Colombia, Indonesia, and Kenya by Curtis Holland with Jonathan White.



Curtis Holland is a senior Sociology major from Plymouth, MA where he graduated from Plymouth South High School. His ATP Summer Research Grant funds work on the global economy and its impact on children from third world countries. His project, entitled, "How has neo-liberal globalization affected the rights and welfare of children in the third world: a comparative study of Columbia, Indonesia, and Kenya," looks specifically at the children of the third world nations to determine whether the quality of life is improving, remaining the same, or worsening since the new form of globalization has taken hold of the world's economy. Curtis says, "The conclusion of my research will outline the necessary changes needed to be made in order to reverse the negative effects that are impacting the children living in these countries."



Jonathan White, an assistant professor of Sociology at BSC and mentor to Curtis's project, discusses the importance of this research, "Curtis' paper is offering a critique of the new global economic order as he determines that it has been less than effective in accomplishing one of the major pieces it was to have accomplished-alleviating the worst forms of poverty and exploitation. Curtis is offering some alternatives to the current global economic paradigm while bringing a highly sophisticated level of thinking to his research and is piecing together elements of the global economic puzzle that offer great insight into the rights and lives of children." Dr. White had co authored and published many articles, books, and pamphlet series that focus on globalization, human rights, war affected youth, etc.

Curtis credits the ATP grant in providing him with an "eye-opening" opportunity that has furthered his understanding of the world in many ways. He says, "The research has been mentally stimulating, and I have learned an incredible amount for the short time in which I was afforded to conduct it."



Research on gender differences in water usage among the populations in the Caribbean by Quetti Catherine Jean with Dr. Diana Fox.

Quetti Catherine Jean is an Anthropology major in her junior year at Bridgewater State College. Quetti is a native of Haiti, but, in the US, she calls New York City her hometown where she attended the Science Skills Center High School in Brooklyn Heights. Her ATP summer grant project, entitled, "A Collaborative Ethnography of Toco, Trinidad, and Tobago and Delmas, Haiti", looks specifically at the gender differences in water usage among the populations in the Caribbean. Quetti is planning on becoming a civil right's attorney. She credits the work that she is completing in her major-especially her field experiences this past summer-as "a stepping stone to becoming a graduate student".

Dr. Diana Fox, an associate professor in the Anthropology department mentored Quetti in her research. She reflects on the project, "Quetti is immersed in another way of life, having to adapt to new norms, values and practice while simultaneously honing her observation and communication skills." Dr. Fox feels that she could help Quetti with her research because she has spent most of her career publishing and seeking grants in this area of study. "It is the story of my career", she says. Most recently, Dr. Fox received a 2005 Fulbright Award to teach and conduct research at the University of the West Indies in Jamaica and the University of the West Indies in Trinidad. She is most recently published in the May 2007 issue of the *Caribbean Review of Gender Studies* with her essay entitled, "A Gift from God: Gender and the Ethnography of Water in Three Trinidadian Communities."

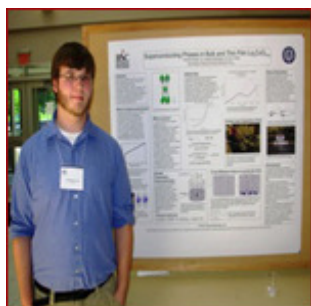
Quetti's project brought her back to her native Haiti, where relatives could offer help and support as she conducted her research. She calls her experience, "life-changing".

Research on various properties of thin films by Louis Bianchini and Brandon Green with Dr. Hashini E. Mohottala.



This summer, Louis Bianchini and Brandon Green both physics/mathematics majors worked on separate but related research projects. Louis's project entitled, "Synthesizing and Characterizing of Sr₂FeMoO₆ (SFMO) Bulk Materials and Thin Films" looks specifically at determining if SFMO thin films are half-metallic oxides. Louis explains how he spent the ten weeks, "making a powder sample of SFMO, forming a pellet for use in a laser chamber

that can make thin films, which are nanometer scale thick layer of SFMO on a substrate and taking magnetization, resistivity, x-ray diffraction and spin-resolved photoemission to determine the magnetic and electrical properties."



Brandon's project is entitled "Separate magnetic and Superconducting Phases in La₂CuO_{4+y}." Brandon explains his research, "I am studying the superconducting properties of La₂CuO_{4+y} bulk material as well as thin films. We grow the material using a Pulsed Laser Deposition (PLD) Chamber. After, we study the magnetic moment of our samples using the Superconducting Quantum Interference Device (SQUID) Magnetometer."

Dr. Hashini Mohottala, an assistant professor in the physics department, has recently joined the faculty at BSC. She is most recently published in the May 2006 issue of the prestigious science journal, *Nature*. She was also awarded the *Academic Achievement Award for Best Graduating Senior Woman in 2007* by the University of Connecticut and Connecticut Governor, Mary Jodi Rell. Both students plan on developing a new method to oxidize these thin films by building an ozone generator and growing the thin films in an ozone rich environment. The students are grateful to Dr. Mohottala for gaining access to the physics lab at her alma mater, UCONN so that they could conduct their research at a level that wouldn't have been possible at the BSC campus. Dr. Mohottala noted that "working at UCONN helped Brandon and Lou to think big. They are working with some instruments that they have never seen in their lives. I think it lays the foundation for their future careers in science." Both students valued the real world experience that the summer grant gave them. Lou reported that "getting to see what a real physics lab does makes the theoretical concepts somewhat concrete, not just a bunch of equations. Realizing that theory and experiment are two different things was very important and useful. It was also good to see how real graduate students live. ATP has let me see what the real experience would be like and [the experience] looks good on an application, too." Brandon agreed, adding that "Living in CT for the summer, renting an apartment, meeting actual physics grad students, working with this equipment that we never would have gotten to work with at BSC. It's been great."

Research on Education through the Visual Arts for the Visually Impaired by Mandy Lyons with Dr. Rob Lorenson.



Mandy Lyons is a returning student who has come back to school after, as she says, "many years absent". Her ATP summer project entitled, "Visual Arts for the Visually Impaired through Education," investigates and renders important works of art in a manner that allows for access to the visually impaired.

Mandy takes pieces of art and renders them "touchable" for the visually impaired, almost a Braille-like equivalent of the work of art. Mandy speaks on the importance of such a project, "Due to new education laws and the increase in the number of handicapped students who are now mainstreamed into regular classes, I will eventually work with visually impaired students. I will be ready to include these students in the lessons I present."

Dr. Rob Lorenson, an associate professor of Art at Bridgewater for the past eight years and mentor to numerous undergraduates. As an artist and educator who has worked with a variety of special needs students throughout his 15 years of teaching at Professor Lorenson finds Mandy's research very important. He says that Mandy's project, "serves an underserved community in a way that has never been done before."

Mandy credits the inspiration for the project to a course she once took with Dr. Lynn Yeaman, Introduction to Teaching. She says that the ATP research is "an extension of her passion project that she tackled in that class." She says that because her project was so well received, she is considering holding workshops on her method.

Research on Developing a Small Scale Reactor to be used to Create Biodiesel from BSC's Vegetable Oil Waste by Julianne Martell with Dr. Ed Brush.



Julianne Martell is a sophomore Chemistry major from Wilmington, MA where she graduated from Wilmington High School. Her ATP Summer Research Grant funds work on the development of a small scale reactor that can produce a few liters of biodiesel from the used vegetable oil taken from BSC campus dining halls. Her project, entitled, "Development of a Lab Bench Research Reactor to Investigate

Improved Chemical Methods of Producing Biodiesel from BSC Waste Vegetable Oil" looks specifically at how using certain waste products, such as used vegetable oil, can be recreated as biofuel.

Dr. Ed Brush, associate professor of Chemical Sciences at BSC since 1998, mentored Julianne on this project. He says of her research, "Her reactor design will produce about 6 liters (a bit more than 1.5 gallons) of biodiesel per run, and will make it easier to scale-up to pilot-plant scale of 100 liters (26 gallons) or more. Her design is simple and uses readily available and sometimes recycled materials." Dr. Brush and Julianne hope to make the design plans available to other colleges and universities as well as high school students in order to promote an interest in and encourage research into the development of biofuels.

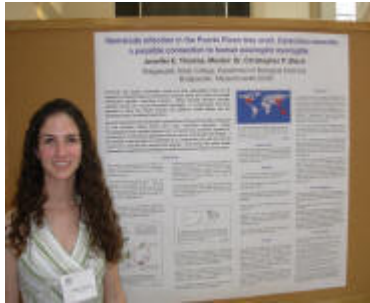


Dr. Brush's research interests have evolved throughout his nine years at Bridgewater. His more recent interests have been focused on green chemistry methods, renewable energy, and chemical sustainability. He says, "Having the flexibility to change ones research interests and direction is a huge advantage of conducting research at a primarily undergraduate institution like BSC, where our mission in the sciences is the research training of undergraduates, preparing them to go on to professional careers in grad school and beyond." Dr. Brush chairs the Department of Chemical Sciences and is co-coordinator of the BSC Center for Sustainability with Dr. Michele Wakin from Sociology. Julianne's goal is to find a more proficient and greener way to make biodiesel, limiting the excess waste and corrosive chemicals. She discusses these interests: "This research has already shifted my interest from just Chemistry to a bio-chem. concentration. I am even more passionate about how

Chemistry is related to and affects the environment. The only setback has been that everything that had the potential to go wrong, did. But, it has been exciting finding different alternatives."



Research on Nematode Infection in the Puerto Rican Tree Snail, *Caracolus Caracolla*: a Possible Connection to Human Eosinophil Meningitis by Jennifer Thomas with Dr. Christopher Bloch.



Jennifer Thomas is a senior Biology major from Hanson, MA. She attended High School at Notre Dame Academy in Hingham, MA. Her ATP Summer Research Grant funds work on the possible connections between the Puerto Rican tree snail and human eosinophil meningitis. Her project entitled, "Nematode Infection in the Puerto Rican Tree Snail, *Caracolus Caracolla*: a Possible Connection to Human Eosinophil Meningitis", looks specifically at which parasites are present in a population of tropical tree snails. She conducted her research by first identifying a type of parasite that appears to be a species which can cause a type of meningitis in humans. She is currently performing genetic studies to confirm that the species identity is correct. She says of her studies, "This research will provide the basis for my honors thesis here at BSC. Many students at other colleges do not have this type of research opportunity."



Dr. Christopher Bloch, associate professor of Biological Sciences, discuss the mentoring of Jennifer's work, "Jennifer is using her research opportunity to learn techniques for making microscope slides of tissue sections so she can search for parasites within the snails' tissues rather than looking solely for organisms attached to the interior of the digestive tract." Because much of Dr. Bloch's work has focused on how terrestrial snail populations respond to hurricanes in the rain forests of Puerto Rico, his research intersects the work that Jennifer is conducting. He explains, "Currently, the most common explanations for changes in snail abundance following a disturbance relate to local climatic conditions and resource availability. Jennifer, however, wonders if stressful conditions following a disturbance may make organisms more susceptible to parasites. If so, that could be an important mechanism driving changes in population size over time—one that I'd never before considered exploring." Dr. Bloch conducts research on the ecology of animal populations. He has co-authored three papers on research he has conducted with the Luquillo mountains Long-Term Ecological Research (LTER) program in Northeastern Puerto Rico.

Jennifer is in the process of applying to joint DVM-PhD. programs and she credits undergraduate research with giving her the experience she feels she will need. She says, "This experience gives me a large advantage over the other applicants. The ATP summer grant has allowed me to spend a large amount of time in the laboratory studying a variety of techniques. As a result, I can now walk confidently into graduate level laboratories knowing that I am fully prepared."

