

## **Department of Biology - Matt Gilg**

Professor Matt Gilg took his Ph.D. in Biology from the University of South Carolina in 2002, and he has been a part of the University of North Florida (UNF) faculty since 2003. He teaches Genetics, Evolution, Population Genetics, General Biology I, and Environmental Science to graduate and undergraduate students. His current research interests pertain to evolutionary ecology and ecological genetics. However, one of his primary interests is his students: he does his best to provide them with the opportunities to learn about biology in the above named areas, and to grow in independence and confidence in the classroom as well as in the field and laboratory. Professor Gilg also encourages his students to develop professionally by giving presentations at academic conferences and by publishing in scholarly journals. In addition, he provides them with guidance and assistance in regard to their future careers and life choices.

In an interview with Professor Matt Gilg, he indicates that what he attempts to do in relation to his students is to give them options as to what they want to work on. He makes a sincere effort to provide “students with their own project so that they can have ownership.” He also states that he endeavors to have one student on each project even though its completion may take longer. Dr. Gilg suggests that students tend to become very emotionally and intellectually engaged when they feel the project is indeed theirs, and this helps them to grow professionally as well as personally by their assuming more responsibility for it. Dr. Gilg adds that his students know that he has high expectations of them and that they are not afraid of this. He implies that his students typically feel very comfortable with him which contributes to their ability to exceed his expectations as they often do. Professor Gilg concludes, “I have really had good luck with all of my students”

largely due to their feeling “ownership of the project.” He indicates that he seeks to find a balance between encouraging the students to be as independent as possible, and his being available for their guidance when necessary.

One student of Matt Gilg success story is that of the UNF undergraduate Elaine Gonzales who went to this professor to see if she could do an independent study with him as she only needs two upper level credits to graduate in December of 2006. She states in a personal communication, “What initially began as a project just to graduate became a project that allowed me to learn about a new invasive species and enjoy it at that same time.” Her experience in the lab helped her to learn that Dr. Gilg makes a sincere effort to get to know his students and to help them only when necessary which allowed her to feel comfortable working there. Ms. Gonzales reflects on her experience doing an independent study with him: “What is satisfying about working in his lab is that it is a well organized environment, and the appropriate equipment is provided. And whenever we need help or need him to come to the lab, he will provide his time to help, considering his lab is out in the golfplex, and would have to drive or ride his bike to get out there. I have never been stressed working in his lab.” In a later personal communication she adds, “Dr. Gilg’s teaching methods and research is a whole new experience that students should encounter. There is never a dull moment with him, and his research is very useful and adventurous.” Why Elaine Gonzales refers to her work with Dr. Gilg as being “adventurous” is largely due to the specific project she is working on with him: she and a graduate student

Alyson Urian have been traveling up and down northeast Florida looking for the green mussel species, *Perna viridis*. Elaine reports in a personal communication the following

about her studies and travels with her colleagues in this regard:

This green mussel is an invasive species that is originally from the Indo-Pacific. It was first introduced in Tampa, and now was found in St. Augustine around 2000. So research that I am doing with him is trying to find the dispersal range. We have traveled as south as Cape Canaveral and as north as Brunswick, Georgia. The areas where we have found them to settle are along the jetties of inlets and beaches floating docks, and on some piers. Also, we collect about fifty mussels from each site to determine the age range of that site. Other students working in his lab would dissect the mussels and sequence them. This area is more in the genetics area.

This experience of working in the lab and kayaking in the field with Professor Matt Gilg helps to transform Ms. Elaine Gonzales in quite a dramatic way. She writes, “Because of him, I thought I was going to graduate in December and be done with school, but now I’m considering graduate school to get my master’s degree.” She clearly attributes this life altering decision to her mentor: “Dr. Gilg’s teaching methods and research is a whole new experience that students should encounter.” Now not only will she be presenting the research data she has discovered working with Dr. Gilg in her senior seminar, it is likely that she will explore projects like this one more deeply on the graduate level in the future. Ms. Gonzales adds, “Not only does Dr. Gilg care about his students passing his classes, but he tries to guide those who would want his insight about the future.” Indeed he has guided her into his academic field undoubtedly because of his “passionate and intelligent” approach to his research, as asserted by his student Elaine Gonzales in her

personal communication.

Another Matt Gilg student success story which illustrates a life altering transformative experience, that determines the direction her life will take in the future, is that of Alexandra Soto. Ms. Soto is an undergraduate student who was studying genetics with the intention of going to medical school when she first took the initiative to speak with Professor Gilg in the fall semester of last year. However, after working in his lab for several months, where she immediately proved herself to be an extremely dedicated student, she was struck by a realization described by her professor. Dr. Gilg relates,

The real light bulb moment was in the spring semester in which students have to take a senior seminar. She was going to present material she had been working on. She had just collected her first data. As she started to go over her data for the seminar, and she first saw her data on the screen, she got really excited.

Professor Gilg describes Ms. Soto as also becoming more confident upon seeing the results of her own work in the lab. He states, this was “a true transformation.” Ms. Soto’s description of the changing of her life course, as communicated in a personal communication, follows below:

My personal experiences with Dr. Gilg have actually been great. It started out by me being a genetics student majoring in Biology planning to continue to Medical School. But, after talking to him about his research and becoming part of his lab, I started to think maybe I would rather be a scientist instead of being a medical student. After just a couple of months working in his lab and being able to talk to him about my goals in life is

when I realized what I really wanted to do after graduation.

Alexandra also reports how Dr. Gilg has helped her in other ways in the same communication:

Dr. Gilg has helped me tremendously and is personally a great mentor. He helped me get a research position at the Mayo Clinic, Jacksonville and helped me put together a poster for a presentation we will be attending at an annual Biology meeting in Tampa, Florida this weekend. This meeting opportunity he asked me to be a part of is just another step to my success that I owe to him....Dr. Gilg has impacted my life in a positive way.

This experience of Alexandra Soto is parallel to that of Elaine Gonzales making a change from not wanting to attend graduate school to aspiring to do just that. Alexandra Soto is moved to make a career change from medical school to that of being a scientist largely due to the guidance, support, and encouragement of Professor Matt Gilg, and not only to the excitement she felt in response to seeing her own data in the lab for the first time. Dr. Gilg describes how he feels about this experience of observing Ms. Soto grow and change: “She is special because one always wants students to follow in one’s footsteps.” Alexandra Soto is indeed on her way to becoming a scientist just like her professor and mentor. It is this very weekend of October 28, 2006 in fact, that she and her professor are attending the Biology conference in Tampa, Florida referred to above. In the interview with Dr. Gilg, he indicates that he always encourages his students to attend these international Biology conferences even when the students are undergraduates. While graduate students need to make professional contacts, so do undergraduates such as Ms. Soto. Professor Gilg maintains that there is always the possibility that students can

discover the best graduate program to attend at these conferences; be made aware of the availability of funds for furthering one's education; in addition to experiencing the meaningfulness of simply meeting other professionals in one's chosen field of study. Undoubtedly Dr. Gilg is making certain that Alexandra Soto is making all such connections at the conference and is continuing to observe her build and demonstrate her confidence and devotion to her chosen field.

The career stories of Elaine Gonzales and Alexandra Soto illustrate transformative experiences of some kind which serve to redirect each of these women onto the trajectory of Biology largely through the influence of Dr. Matt Gilg, their professor and mentor. There is at the very least one more story of transformation related to the impact that this young man has had on the lives of students at UNF although this student decided to remain on the career path of medical school she was on when she met her professor. The main distinguishing factor of the career story of Melissa O'Connor, a spring 2006 UNF graduate, is the fact that she published the findings of her undergraduate research in *The Osprey Journal*, a UNF scholarly publication, as a result of Dr. Gilg's encouragement. This publication, however, is not the only way in which Professor Gilg has influenced the life and career of this young woman. The October 24, 2006 letter which Melissa O'Connor has written on behalf of her professor in testimony as to how he has enhanced her life is provided in its entirety below. Not only is Ms. O'Connor comprehensive in regard to the effect he has had on her life in particular, but she also expresses much of the feeling and points that other students make about his effect on their lives as well. Ms. O'Connor shares the following experiences in a personal communication:

As a first year medical student at the University of South Florida College

of Medicine, I can sincerely say that Dr. Matt Gilg made a tremendous impact on where I am today in my educational career. I remember meeting with Matt in 2004 as a second year Biology student looking for a chance to get involved with a research project in some way or form. I approached Dr. Gilg, told him that I didn't have any research experience, that I had just started my biology courses, and just wanted a chance to learn and hopefully be an asset to this research endeavors. He informed me that he just started getting his lab together and probably the summer after I took his genetics class he would see what was available for me to do.

That summer I was able to start doing research and that simple act of training and teaching me the various techniques in his lab really impressed me and motivated me to want to do extremely well in his lab.

As a biology major, it can be noted that the science labs and classes rarely allow students the opportunity to perform a lab more than once so that one will have the opportunity to fully understand the concepts and grasp the laboratory techniques that are involved in various experiments.

Therefore, when I realized that I would be able to work in a lab, perform scientific procedures that were presented in class, and start a genetically based research project, **I knew that this was a once in a lifetime opportunity.** While working in the lab those last few months, I came to understand the purpose for various biological processes and how to

troubleshoot my laboratory techniques when my results did not seem to be consistent. Not many students are able to get involved with endeavors like that and grasp these scientific methods because of lack of funding, resources, or even mentors that would be able to assist them with their plans.

With the help of Dr. Gilg and the College of Arts and Science, I was even able to travel to Canada to present my research at the 2006 Benthic Ecology meeting. **That was definitely a lifetime experience!**

Not to mention, my work was published in the UNF research journal entitled *The Osprey Journal*. While currently with his help, motivation, and numerous letters of recommendation, I am now embarking on the next stage of my life as I start the steps towards becoming a physician.

Matt has done so much to advance not only my educational career, but he has also instilled in me many lifetime lessons that will enable me to be successful in my career and personal endeavors. **Matt encapsulates the mission that UNF is trying to portray, where we have professors that are taking the time to build into student's lives to help them succeed and in turn help the university and the community make a change for the better.**

I do not think that this letter can fully express the extent of my gratitude of Matt's actions in my life and with that I will always be grateful for him.

This heartfelt and moving letter by Melissa O'Connor in praise and thanks for her professor reveals that she is a transformed individual, from one who was an inexperienced student on her way to medical school to an academically experienced and more confident one in medical school. All of her experiences of working in the lab -- with a caring professor with outstanding teaching abilities, to delivering a paper at a formal academic conference in Canada, to publishing her scientific research in an academic journal -- have enabled this student to grow into a member of the community who will undoubtedly lead as well as help others, just as her guiding example does. If students are looking for a mentor in the field of Biology, and seek the ultimate compassionate yet demanding, passionate and disciplined professor who will help them take many of the correct courses of action to achieve their goals -- and ideally become transformed by the experience -- seek out Professor Matt Gilg in the Department of Biology at UNF.

The methods of teaching described by Professor Gilg as well as his students completely fit the definition of a Transformational Learning Opportunity (TLO) Directed Independent Study (DIS). The criteria for such an opportunity as stated in the Executive Report for this TLO follows: “(1) develop and/or nurture the ability for independent study; (2) increase self-motivation, curiosity, sense of self-sufficiency and self-direction in planning and carrying out the student’s education; and (3) nurture academic excellence through academic independence.” Elaine Gonzales, Alexandra Soto and Melissa O'Connor are three students who live the story which qualifies the Directed Independent Studies Professor Gilg offers.

Below are additional testimonies of UNF students who have had the privilege of

studying with Matt Gilg. Their words also hint at opportunities for transformation:

In the first personal communication provided below from the undergraduate Mike Levin, note that this student refers to Dr. Gilg as being “one of the best teachers and mentors I had during my undergraduate experience at UNF.” The entire personal communication follows:

I worked with Dr. Matt Gilg from January 5 - April 6. I worked on a project involving fish genetics, in which our goal was to identify molecular genetic markers to distinguish between two different species of fish living in a hybrid zone off of the first coast. The project had moderate success, however, I learned a lot about genetics research and the scientific research field in general.

Dr. Gilg was an excellent mentor, often giving up as much time as necessary to ensure complete understanding of the research. He also wrote me an excellent letter of recommendation, and always offered his help for scholarships or graduate school in any way possible.

Outside of school, Matt was a great host, having several “research team” get togethers, where he and his wife hosted us at their home, cooked for us, and one time, took us out on his boat.

**Overall, Dr. Gilg was one of the best teachers and mentors I had during my undergraduate experience at UNF.** His teaching style ensured that you understood the material, not simply memorized it. As a mentor, he offered guidance and wisdom. I feel very lucky to have had

him as both.

The UNF graduate student Iara Gonzalez shares her uplifting and encouraging experiences with Dr. Gilg in a personal communication:

I am Iara Gonzalez and I'm a graduate student in my fourth semester looking to graduate in Spring 2007. Matt has been my advisor since I started in Spring 2005 and his guidance and help throughout the entire graduate learning experience has been of insurmountable value. My research at UNF involves genetics in fish and when I first started my knowledge in that area was very minimal. Matt was able to explain everything with precise direction and made the learning process a whole lot easier than what I had expected. At his ecological genetics lab I have learned new techniques and skills that I know will help me long term in my academic career. I always recommend him whenever students ask which professor is good to do research with.

Also I just recently gave an oral presentation about my research at a meeting in Savannah, Georgia. This was my first time presenting and I was extremely nervous to say the least, but Matt's support and suggestions led me to present what I considered a successful presentation.

Overall I am thankful that Matt is my advisor, not only for his guidance and support, but for his vast knowledge and effective way of communicating ideas. I have confirmed this after taking several of his classes...

Finally, we conclude with the short and sweet but powerful words of the UNF

undergraduate Sura Jermanus. She indicates in a personal communication that Professor Matt Gilg is “a teacher who truly cares about his students; he’s challenging and pushes his students to do their best. I have had the opportunity to do research with him: I have learned so much from him, and it is such a great experience.”

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