

# Computational Times



Newsletter for the Wittenberg University Department of Mathematics and Computer Science

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## VIEW FROM THE DEPARTMENT CHAIR

This has been a busy semester. Jim Noyes officially retired in December but his course in Computational Models and Methods was covered by Eric Stahlberg who is doing an excellent job of teaching the course along with a second course in Bioinformatics while at the same time piloting the Computational Science program. And although Jim Noyes has technically retired, he's been around enough for this chair to seek him out for advice on various departmental matters.

We were able to run a successful search for Jim's replacement. Steven Bogaerts, a new Ph.D. in Computer Science from Indiana University with a concentration in artificial intelligence, will be joining us in August as an Assistant Professor of Computer Science. The fall newsletter will have more on Steven.

I am especially pleased with the two teaching awards garnered by members of this department. Adam Parker was awarded the ODK Teaching Award at Wittenberg's Honor Convocation in April 13<sup>th</sup> while on the same day at the spring meeting of the Ohio Section of the M.A.A. (Mathematical Association of America) which was held at Shawnee State University in Portsmouth Ohio, Bill Higgins was awarded the Ohio Section Award for Distinguished College or University Teaching. Details on both awards are given in this newsletter. I should mention in passing that this department has always played an active roll in the life of the Ohio Section of the M.A.A. and that Wittenberg will host the fall meeting of the section during the last week-end in October.

As the semester comes to a close we'll be saying good-bye to a number of seniors, 15 in all, who are graduating with majors in mathematics or computer science. I hope that they (and you) will keep us posted on their (and your) activities.

Brian Shelburne

## IN THE SPOTLIGHT: TWO TEACHING AWARDS!!!

### Bill Higgins (by Indraroop Roy Mohanti)

The department is thrilled to announce that Dr. Bill Higgins was awarded the Ohio MAA Section Award for Distinguished Teaching. The Ohio Section gives this award each year to one person from the hundreds of mathematician members in Ohio and northern West Virginia. It is truly a deserving honor.

Since he started teaching 25 years ago, Bill has

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*Drs Parker and Higgins with their awards*

### Adam Parker (by Doug Andrews)

I was delighted and not at all surprised that Adam won the Omicron Delta Kappa award this year for best new faculty member. Our department has featured several ODK award recipients over the years, and Adam promises to be one of the best picks ever. Adding him to our ranks has brought youth and energy and enthusiasm and new ideas to a department that hadn't had a new tenure-track hire since I came on board in the late 1980's. His addition is one of several major changes designed to rejuvenate our department's programs and hence better serve our students.

Students rave about Adam -- and not just because he's younger than the rest of us dinosaurs. At the Honors Convocation, the ODK president cited all sorts of anecdotes that detail Adam's commitment to his students, both in and out of the classroom. As part of our departmental personnel review process, I've

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## COMPUTATIONAL SCIENCE IN YOUR FUTURE!

Computational science is in your future. In fact, computational science is in your past and in your present. The car you drive, the fuel you use, alternative sources of energy and new medicine are all developed with the aid of computational science. No longer limited to high-end laboratories and research facilities, computational science is having an impact on a daily basis in retirement and financial planning, managing the flow of traffic, and even the use of the Internet. The number of applications involving computational science is growing everyday.

It's commonly known that computers are faster today than ever before. Think about it. The computational power in your laptop, and in some cases even your cell phones, match the capabilities of supercomputers less than a generation old. With advances in computing power and associated software, today you have the ability to do more in an hour than what took a week to accomplish years ago.

So, where do we go with the future of computational science at Wittenberg? The answer is a combination of three key areas: technology, data and applications.

- **Technology** – the technology involving computing, not just computers, but innovative algorithms, software and computational models are what make wide-scale computational science possible. New interest in energy efficient and parallel computing solutions is fueling a wave of change.
- **Data** – frequently obscured in the development of new models is the critical role that data, data integration and data analysis play in advances in algorithms and computational models. The increased automation in the laboratory, combined with the increasing use of empirical data from a multitude of sources across many disciplines, will continue to guide the development of new computational science technology.
- **Applications** – in a world where computers are almost everywhere, the opportunities to pursue computational science are nearly endless. Developing new sources of energy, balancing land use and preservation, improving efficiency of transportation, and finding causes and cures for diseases are global challenges where the solutions increasingly involve computational science. Locally, creating a stronger and more economically vibrant Springfield community and shaping the future of medical care with the construction of a new hospital are prime opportunities for computational science to make a contribution.

The role of computational science is expanding with each passing day. Career opportunities are growing tremendously for individuals with backgrounds in technology, data analysis, and applications. The impact transcends traditional disciplines, forging unique and never before seen opportunities for innovative projects unifying many interests. Where the University unites its mission of service and leading technology, computational science is in your future. In preparing students for expanding career opportunities in computational science in the classroom and in internships, we bring the world to Wittenberg and Wittenberg to the world.

### Problem Corner

Two friends, whom we will call Arthur and Robert, were curators at the Museum of American History. Both were born in the month of May, one in 1932 and the other a year later. Each was in charge of a beautiful antique clock. Both the clocks worked pretty well considering their ages, but one of them lost 10 seconds an hour and the other gained 10 seconds an hour. On one bright day in January, the two friends set both clocks at exactly 12 noon. "You realize," said Arthur, "that the clocks will start drifting apart, and they won't be together again until—let's see—why, on the very day you will be 47 years old. Am I right?" Robert then made a short calculation. "That's right!" he said.

#### Who is older, Arthur or Robert?

*Send your answers (with reasoning) to whiggins@wittenberg.edu by November 30 2007. We will randomly select one person from all correct entries to win a home-made cheesecake from Dr. Higgins!*

### Adam Parker In The Spotlight (cont.)

talked with Adam quite a bit about pedagogy and curriculum and visited him in the classroom, and I can corroborate all the good things that students say about his teaching. Adam really is the kind of professor who connects with students and genuinely cares about student learning, and who knows how to get it done effectively.

Adam is also very quickly becoming embroiled in the life of the university at large -- though committee work, club advising, and participating in all sorts of academic, co-curricular, and social activities with students and with fellow faculty and staff members. (This way-cool departmental newsletter is one of his creative products, and is further evidence of his service to the department.) What students may not know is that Adam is also very active in the math world outside of Witt, brewing up projects of his own for professional presentations and publications.

It's great that the current ODK students have formally recognized what we in the department already knew: Adam is a great catch for our department in particular and for Wittenberg in general. Congratulations to Adam on this well-deserved award!

## DISTINCTIVELY WITTENBERG: THE NEW BA CURRICULUM

The department is happy to present a new, updated BA mathematics degree. Now, for the first time, students will be able to choose from one of three “tracks”: a traditional mathematics track, an applied mathematics track, and a math/statistics track.

The traditional track is similar to the major that has existed in the past - with the exception that now Math 227-Data Analysis is a required course. The applied mathematics and statistics tracks are brand new and unique to our department. No other school in the NCAC has such a track system in place .

All three tracks have a common core group of six required classes after which the tracks diverge. Each sequence has a set of required classes and electives that students can draw from in order to create a personalized major within each track. The new major also includes a senior capstone – an experience designed to draw from major coursework and bring closure to their studies. Whereas in the past every senior had to take Math 490 Senior Seminar, now they also have the option of taking an

independent study or honors thesis to satisfy this senior experience.

After remaining largely unchanged for the past 12 years, the department decided that a change was due. The new curriculum incorporates suggestions from the MAA Committee on the Undergraduate Program in Mathematics (CUPM) as well as reflects the strengths and distinctiveness of the department.

By choosing one of the three tracks a student can better focus their studies to prepare for a career or graduate program that interests them. Moreover the program chosen will recognize their emphasis within the department.

This brings the number of programs offered by the department to an impressive TEN! Besides the above three majors, we offer three minors that mirror the new major tracks (a math minor, a computational science minor, and a statistics minor respectively). Students can also elect a BA and minor in computer science and a BS in both mathematics and computer science.

### THE NEW CURRICULUM

Core Requirements

201, 202, 205, 210, 227, Comp 150

Track

MATHEMATICS

APPLIED MATH

STATISTICS

Track Requirements

2 of  
360  
365  
370-

215  
260  
1 of  
320  
345

228  
2 of  
327  
328  
337

Track Electives

3 courses with at least 1 at 300 level; not 327 or 337

2 courses, both at the 300 level

2 courses, with at least 1 at the 300 level

Senior Capstone

2 or more hours from one of 460, 490, 499

Please see our website for course descriptions.

**We’d love to hear from any departmental alums. Please take a few minutes and drop a line to [dandrews@wittenberg.edu](mailto:dandrews@wittenberg.edu) to let everyone know what you’re up to these days. And are there some fellow alums you’d like us to help track down? Send us a few leads, and we’ll do our best to help find your old buddies. Thanks!**

## FACULTY NOTES

### Jim Noyes retires from teaching

Last semester, the Mathematics and Computer Science Department was sad to announce the retirement of Dr. Jim Noyes after 22 years of teaching at Wittenberg. He is an outstanding researcher, a superb professor, and an invaluable colleague.

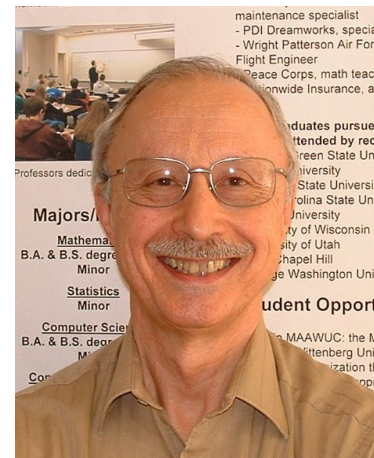
Dr. Noyes received his Ph.D. in computer science from the University of Wisconsin, Madison. He spent a year teaching mathematics at Wayne Township High School in Huber Heights, Ohio and joined Wittenberg after working for 18 years at Wright Patterson Air Force Base as a mathematician, programmer, operations analyst and Branch Chief.

During a research career spanning 41 years, he has made contributions to topics such as expert systems, neural networks, optimization methods and mathematical software development and evaluation. His research has been sponsored by grants from the NSF, the Air Force Office of Scientific Research and the National Academy of Sciences National Research Council. This research has been presented in numerous papers and talks.

Among students, Dr. Noyes has always been known as a great lecturer and his enthusiastic approach towards teaching has inspired students to reach and explore deeper into the field of computer science. He is known for his informative lectures and for writing the online text that he used in most lectures as well as the college text, *“Artificial Intelligence with Common Lisp.”*

He was instrumental in developing and managing the computational science minor at Wittenberg, as he realized the importance of this field extremely early. Computational science is the field of study that integrates behavioral and natural sciences, computer science and applied mathematics in order to better solve complex problems. Wittenberg’s computational science program attempts to produce computationally competent scientists and familiarize them with reliable analytical and numerical methods. The computational science minor has drawn a lot of attention recently after it received a \$1million grant from the Department of Energy Funds through an earmark from Congressman Hobson. Since receiving the grant less than a year ago, Wittenberg has already utilized it to fund scholarships for students, training for science faculty, modeling software, funding for high-tech student internships and research. Upon his retirement, Dr. Noyes became “Professor Emeritus of Computational Science.”

Now that he has retired from teaching, Dr. Noyes plans to maintain a full social life and will also concentrate more on his hobbies and interests, which include hiking, bicycling, nature photography, reading and analyzing computer models. The department wishes him all the best and will miss him greatly.



Dr Jim Noyes

### Bill Higgins In The Spotlight (cont.)

been immersed in the promotion of excellence both among his students and in the general field of mathematics. Enormously popular with students, he is involved in a range of activities – directing research projects and Honors theses, presenting colloquium talks and being elected to the office of President of the Ohio Section of the MAA are but some of these activities. Even so, he still finds time to interact with students on both a professional and personal level, playing on the intramural volleyball team fielded by the department and making a mean cheesecake!

In class, Bill is known for the high quality of his lectures and for his ability to work with all types of students. He constantly finds new ways to get students involved with the subject matter and works hard to leave no one behind. One of his Fundamentals of Analysis students wrote, “That was the most difficult course for me to understand, as it was for many of us in that class. Dr. Higgins was persistent in making sure I understood the material by asking questions and expecting answers in return. If the correct answer was not given, he would explain that particular concept again until I did provide the correct answer. At times, there would be two or three of us in his office to ask him to explain something again, and he was very patient.”

Outside of class, Bill has been active in sharing his passion for mathematics. He is a member of the Ohio Council of Teachers of Mathematics and has given more than 20 talks and presentations at professional meetings. He has also served as ambassador for mathematics to Ohio junior high schools during his 18 years as Ohio Director for the AMC 8. At Wittenberg, Bill has served on numerous campus wide committees, has encouraged students to push themselves further and inspired them to participate in various REU programs.

This award merely recognizes what we in the department already knew: Bill’s service to Wittenberg and his students has been invaluable both inside and outside the classroom. We congratulate him on this great honor.



## FACULTY NOTES (cont.)

**Doug Andrews:** Now that my terms have expired as regional Chapter Rep for the American Statistical Association and as member of the ASA's national Committee on Career Development, all of my professional energies outside of Witt are focused on the second biannual US Conference on Teaching Statistics (USCOTS), which will take place about a week after Witt's commencement. I'm on the program committee, and I've been reviewing scores of proposals for participation in a neat interactive poster/demo session which blends elements of pedagogy, curriculum, and educational research. I was one of a handful of statistics educators selected to lead 90-minute workshops at the inaugural event in 2005, and overall I found USCOTS to be the most rewarding and engaging professional conference I've ever attended. I'm eager for another dose this year.

**Bill Higgins:** It was very rewarding being able to advise (along with lots of help from Adam Parker) Emily List on her senior honor's thesis on knot theory. And it was great fun to see her present the results of her work on in talks given at the spring meeting of the Ohio Section MAA meeting, and at a department colloquium.

At the end of the spring Ohio Section MAA, my term as President of the Ohio Section began. This fall we will host the Ohio Section meeting at Wittenberg and I hope we will be able to get many students involved in helping out with the arrangements and attending the sessions.

In last semester's newsletter, I mentioned that it would be a good idea to bring the "Problem Group" back to life. I found out that a small number of students are interested in working on recreational math problems and the "Problem Group" and were willing to meet for an hour or so three evenings this past semester. I hope that the group will pick up again where we left off next fall. We're still looking for a better name.

**Adam Parker** finished up his second year at Witt with a flurry of activity. In March Adam presented a talk in the Wittenberg colloquium entitled, "More than Meets the Eye—An Invitation to Moduli Spaces". In April, he was awarded the ODK Excellence in Teaching Award at the Wittenberg Honors Convocation and was also nominated for Outstanding Faculty Member by the Wittenberg Greek Community.

He is also particularly proud to have a paper entitled "An Elementary GIT Construction of the Moduli Space of Stable Maps" accepted to the Illinois Journal of Mathematics. It should appear next year.

Adam will also be getting married in Detroit, Michigan on June 30th to Bernadette DeGuzman. He's VERY happy.

**Nancy Saks:** Over spring break, I attended SIGCSE 2007 in Covington, Kentucky. (SIGCSE is the Special Interest Group in Computer Science Education of the ACM.) While there were a lot of interesting papers on student research and teaching techniques, I was especially happy with Microsoft's vendor presentations. Microsoft is apparently very concerned about the nationwide decline in computer science enrollments and has established several initiatives to help capture student interest in the subject. They have several programming kits that they're providing free for student use, including one on game development and another on robotics. I hope to work with these kits a lot over my sabbatical next year. I'd also planned to take a Ruby on Rails workshop while at the conference, but unfortunately it was cancelled (so that's yet another area to explore on my own).

**Brian Shelburne:** Yet again, Brian finds most of his time taken up by "chair-type" duties such as leading the search for a new computer scientist, updating both the mathematics and computer science curricula, and planning for the fall meeting of the MAA. However he still found time to attend professional math and computer science meetings. He attended the SIGCSE conference in Kentucky as well as the spring meeting of the Ohio MAA. While at that MAA conference he was elected to serve on the Program Committee for the Ohio Section.

**Al Stickney** is on sabbatical during the 2006-07 academic year. He is doing research into factors that might be related to students' performance in beginning calculus courses at Wittenberg. In particular, he is considering placement exam scores, previous mathematics coursework, and familiarity with calculator technology.

Recently, Dr. Stickney presented workshops at two national conferences: the 19th International Conference on Technology in Collegiate Mathematics to be held in Boston in February, and the Teachers Teaching with Technology International Conference in Chicago in March. He also presented a workshop at the Teachers Teaching with Technology Regional Conference held in Lima, Ohio in April. He is looking forward to getting back into the classroom next fall after his sabbatical.

## ALUMNI NOTES

**Jonathan Stewart** ('06) has been “living in New York for about nine months now and it’s really beginning to feel like home. At the Federal Reserve I work a lot with our internal (and confidential) economic forecast especially getting it finalized before each FOMC meeting in Washington, DC. I also work with economists on their research projects in areas such as the New York market for vacant land, forecasting federal and state & local spending, and the effect of revisions on an index of the price of homes that have been sold more than once. Outside of work I’ve become involved in a few organizations in New York. I’m singing in a semi-professional church choir (a few members, not including myself, are professional vocalists) at Holy Trinity Lutheran Church. There’s also a lot going on culturally in New York, and I’ve tried to take advantage of that as much as I can. Most notably, I’ve been developing a newfound interest in jazz music – a hard thing to escape in the city! There are plenty of good jazz clubs here, and I like that I have so much to learn about that kind of music.”

**Katie Joseph** ('03) works as a statistician at the US Office of Personnel Management. “I work with a team that chooses random samples and analyzes data for governmentwide surveys. I use SAS to provide civilian workforce employment data from a large database to government agencies, educational institutions, the news media, and the general public. The database I use covers over 1.8 million current federal employees and gives me the opportunity to study one of the largest employee databases in the world. SAS programming is a big part of my job and I have attended training courses at the SAS Institute and a user’s group conference in Philadelphia last fall. I received my masters degree in statistics from the George Washington University in 2006. In my free time, I enjoy watching the Food Network and trying out new recipes.”

**Elizabeth Hardesty** ('03) took time away from studies and textbooks for a year by working as a florist near Lansing, then started work on Masters degree in Geological Sciences at Michigan State, which she finished last spring. “My advisor and I spent 5 weeks in the northwest corner of Argentina (Salta area) and southern Boliva (Camargo area) collecting rock samples and mapping the structures of the area.” She then rewarded herself with a 33-day backpacking trip through nine countries in Europe with her best friend Sara, “enjoying lots of European delicacies including the best German sauerkraut ever and good local French wine.” She enjoys traveling all the time now – on the job as exploration geologist for the On-Shore US Shale Gas Team with Shell Oil, for whom she had interned one summer in Houston. In what little free time remains, Elizabeth has “enjoyed the Texas weather by visiting Galveston and the beach, going to the theater, and attending as many Astro baseball games that I can.” She makes it back to Ohio “about once a month for weddings and holidays” and catching up on the changes here at Witt. “Hopefully, fellow alumni will write in and keep us all up to date on your lives – HINT HINT! I can’t wait to hear from you.”

**Chris Woodruff** ('94) got a Master’s in Computer Science from Ohio State, then “took a job with a small company in New York called IBM.” After working in their Global Consulting group and other consulting positions for a couple years, he founded Sagax, Inc. to start independent consulting on his own. In 1999 he landed his “first (and last) client”, Banc of America Securities. “After two years, the Banc told me to either become an employee or they would have to terminate my consulting contract. This worked out well for me as the dot com bubble had just burst and consulting jobs were scarce.” Chris now works as Application Architect for the Banc – remotely from his home in Westerville, Ohio, and traveling to New York City one week per month. “My wife of nearly three years, Molly, has recently returned to her job as an artist at the Columbus Dispatch newspaper. Dylan Cade was born on Jan 23, 2007 and has brought much excitement and joy to our home. Without a doubt, Dylan has been my best development project.”

**Susan McManus** ('92) got a Master’s in applied statistics from OSU and is now Associate Vice President of Internet for Nationwide in Columbus, OH. She has been with Nationwide since 1993 and has held various positions in marketing, sales, information technology, billing, operations, and business strategy development. Since 2004, she has responsibility for www.nationwide.com and developing Nationwide's consumer Internet strategy for insurance, banking, and financial services. Under her leadership, www.NationwideInsurance.com was ranked #1 insurance website by Dalbar, Inc. (2002); Most Usable Insurance Website by Kasina (2001); and ranked #2 best U.S. insurance carrier website by Gomez (2003). Additionally, her Electronic Business Intelligence (eBI) reporting and analysis group was awarded the Best Practice – Web Analytics Award across all industries by The Data Warehouse Institute (2002). In 2006, McManus was recognized by the Women for Economic and Leadership Development as one of “12 Women You Should Know” for making a big difference in Ohio’s business and professional communities.

## MAJOR NEWS

**Maggie Petit** will pursue a graduate program in Biostatistics at North Carolina State University—one of the top such programs in the country. While there, she will enjoy a full tuition waiver and an assistantship. Maggie was also awarded the Richard A. Little award which is given to outstanding junior or senior majors in the department.

In a coincidence, former major **Ellen Petersen ('06)** is also at NC State pursuing her Ph.D. in applied mathematics.

**Erin Beeler** and **Elizabeth Volz** will be working at Sygma Network as purchasers for restaurants. Sygma is located in Dublin, Ohio (outside Columbus) and we hope to still see them around the department!

In yet another coincidence, former major **Gina Flocken ('06)** also works at Sygma, though Erin and Liz didn't find this out until after they found the jobs!

**Sam Antwi** will be working as a financial analyst, hopefully in New York.

The department would like to congratulate **Natalie Banks** because she will be getting married this summer! After things quiet down from the wedding, she will either move into management at Wal-Mart, or find another job in the Springfield area.

**Natalie Coakley**, **Mark Huelsman** and **Kevin Schalnaf** each will be teaching high school math having completed their math majors and education minors. Mark plans on building on the successes of coaching boys basketball in Urbana by also coaching the high school team where he will be working. Kevin also hopes to coach, however for him it will be baseball.

**Kevin Magley** will be moving to Washington D.C. for a position at the headquarters of GEICO insurance. While there, he will work towards his actuary certification. At the spring Honors Convocation, Kevin was awarded the Paul Hessler award for outstanding achievement from the math department as well as the Economics Prize from the Economics Department. In more good news, he too will be getting married (though not until December '08.) We expect an update from him before then!

**Emily List** will be attending the University of Massachusetts, Amherst where she will pursue a Ph.D. in mathematics. She also completed department honors this spring by writing a Thesis entitled "Virtual Reidemeister Moves" under the supervision of Bill Higgins and Adam Parker. At the Honors Convocation Emily was awarded the Dodson Award from the math department, given to a major that has shown excellence in preparing to teach mathematics at any level. Unfortunately she was unable to attend as she was presenting her research at a conference.

After being accepted to several graduate programs, **Steve Dennett** will be attending the mathematics Ph.D. program at Wesleyan University in Middletown, Connecticut. While there, he will also enjoy a teaching assistantship.

**Kathy Johnson** will be teaching Math 120—elementary functions at Wittenberg next semester in addition to continuing to coordinate the math workshop. This spring, she was awarded the Paul Hessler award—given for outstanding achievement in mathematics or computer science. The department is happy to have her on board!

**Erin Ellis** will attend a graduate program in German at Bowling Green State University where she will enjoy a full tuition scholarship and teaching assistantship. As part of this program, she will spend a year at the University of Salzburg in Austria. This spring, Erin was awarded Greek Woman of the Year by the Greek Community.

## Award Winners!

We would like to congratulate the following majors that won departmental awards at this year's honors convocation.

<u>Paul Hessler Award:</u>	<u>Richard A. Little Awards</u>
Kathy A. Johnson	Emily J. Emmons
Kevin R. Magley	Brian J. Ervin
<u>Norman E. Dodson Award:</u>	Margaret E. Pettit
Emily N. List	Inderroop Mohanti

We would also like to congratulate all of the other majors and minors that were inducted into the various honor societies. We're very proud of you!

## ALUMNI NOTES (cont).

**Shyam Guthikonda ('06)** will be attending graduate school at USC (Univ. of Southern California) in Fall 07. The program is a MS in Computer Science in their Viterbi School of Engineering, and the specialization is in Game Development. His concentration - which he has yet to settle upon - will most likely be "Immersion", or "Cognition and Games". He is very excited to find this program, because it was one of the few graduate level programs in the country with a focus in this area. The curriculum seems well grounded and well thought out. He is also very excited about the location in southern California.

**Considering a Donation ?**

If you would like to make a donation to the math department, you can make a donation to the "MATH DEPARTMENT GIFT FUND" at

The Wittenberg Fund  
 Wittenberg University  
 PO Box 720  
 Springfield, Ohio 45504-0720

Make sure to designate your donation to the math department. Your gifts help support undergraduate research, travel, and the general mission of the department. We appreciate all of your help.



**Welcome!**

The department would like to welcome all of our new majors and minors that have declared during the spring. We're happy to have you in the department!

**Mathematics Majors:**

- Lauren Baxter '09—Newark, OH
- Sally Hawthorne SCE—Springfield, OH
- Brett Herlekson '09—Pomfret Center, CT
- Erin Meredith '09—Noblesville, IN
- Brenna Noll '09—Wexford, PA
- Lauren Ramey '09—Chippewa Lake, OH
- Ben Scott '09—Strongsville, OH
- Troy Winner '09—Greenville, OH

**Mathematics Minors:**

- Leo Virgilio '10—Laredo, TX
- Danielle Carey '10—Virginia Beech, VA
- Janelle Mahowald '10—Parma, OH
- Louise Niu '10—Jinan Shandong—China

**Computer Science Minors:**

- Emily Emmons '08 — Zanesville, OH
- Tim Kuss '08—Springfield, OH

**Computer Science Majors:**

- Aaron Holloway '09—Columbus, OH
- Nam Vu '10—Han Noi, Vietnam

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