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PLP News

*From the students of
the Plant Pathology
Department to our com-
munity.
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The NEWSLETTER of the PLANT PATHOLOGY DEPARTMENT at the UNIVERSITY of FLORIDA

Herbert Hice Whetzel (1877-1944) and The First Department of Plant Pathology In The United States.

By: Ronald French



Whetzel

When we go back in time and recall the scientists and personalities that had an influence in early plant pathology, names such as Kuhn, de Bary, Berkeley and Hartig may come to mind. At the turn of the 20th Century, one individual that comes to mind as one of the chief developers of plant pathology is none other than Herbert Hice Whetzel. Not only did he contribute to plant pathology as a scientist but he has been the driving force behind the creation of the first department of Plant Pathology. As head of the Department of Plant Pathology at Cornell University, he set the foundations for undergraduate and graduate teaching, graduate research and extension programs. As a visionary, he had the ability to stimulate and mentor those who would later pass the torch to the next generation of plant pathologists.

Herbert Hice Whetzel was born in a rural farm close to Avilla,

Indiana on September 5th, 1877. He was of early German, immigrant pioneer Pennsylvania Dutch heritage. It was his grandfather who brought the family from the east coast mostly by horse and wagon through mountains and forests until they finally settled in northern Indiana.

Growing up in a farm, Whetzel learned the struggles and perils of being a farmer. Even going to school was not easy; he had to walk five miles to school. However, school was a part of his life that he truly enjoyed. In fact, after he graduated from Avilla High School in 1895, he taught for 2 years in local country schools. Whetzel learned the art of being a self-made man early in his life. Accounts of Whetzel have it that, when he turned sixteen, his father told him, "You are sixteen, you're a man now. Go upstairs and put on your best suit and collect your chief belongings in a bag that you can carry". Upon doing so, his father handed him twenty dollars and let him face the real world on his own.



He would end up teaching school for a period of about two years, then

furthering his education at Wabash College, **Indiana**, at the age of 19. It was at Wabash where Whetzel was introduced to the disciplines of Botany and Mycology, a preview to the world of Plant Pathology. It was at Wabash where Whetzel found his mentor, the man that would serve as a source of inspiration and guidance: Mason B. Thomas. Thomas, a former student of Dudley at Cornell, was a teacher of Botany and Mycology, scholar and investigator. It was at his home where Whetzel lived during part of his college years at Wabash. So impressed was Thomas with Whetzel's persona that he managed to further Whetzel's studies in mycology by "convincing" G.F. Atkinson at Cornell to have Whetzel as his graduate assistant starting in 1904.

What other choice could Atkinson have when part of Thomas' praise for Whetzel included: "Whetzel was the best student of botany ever graduated from Wabash, by reason of his excellent high school preparation, his wide reading, and his extensive field work." By 1902, Whetzel had received his A.B. in Botany; a couple of years later, he would begin his studies at

Cornell. By that time, he had collected and determined 80 slime molds, had taught a course in nature study to city school teachers and had delivered two papers to the Indiana Academy of Science on apple rust and on the genus *Stemonitis*.

Since he had been hired on money for extension of information and research on plant diseases, he conducted surveys of diseases throughout New York State and publishes his first station bulletin on onion blight in 1904. As part of his duties, Whetzel also was given an appointment as instructor responsible for plant disease investigations.

His success as an instructor and investigator led to his appointment as Assistant Professor of Botany and Head of the new Department of Botany in the recently created State College of Agriculture. This new department would handle the plant diseases aspect of Botany. Whetzel, however, felt that this name was not suitable enough. By October 1, 1907 he finally got the Dean of Agriculture and personal friend, Liberty Hyde Bailey, to change his department's name to that of Plant Pathology and his title as Head and Assistant Professor of Plant Pathology. Unfortunately, this bold move prevented him from completing his Ph.D. It was a move that Whetzel felt was necessary to give plant diseases its full due of respect since 85 out of 224 bulletins issued by the college of agriculture dealt directly or indirectly with plant diseases.

As the head of the first department of plant pathology in the U.S., his knowledge, administrative ability, and teaching skills would help him build a well balanced department based on solid research, extension and instruction. Not only did he participate in the department as its administrator but also as an educator and mentor. Although initially in charge of teaching mycology, he transferred the



responsibility to Fitzpatrick in order to teach the elementary course in plant pathology. It was under this new teaching responsibility that Whetzel would be able to create the foundation for future plant pathologists, as he could determine those students who were to be the promising figures in plant pathology.

So influenced was Whetzel by his mentor and friend, Mason B. Thomas, that he followed in his same lines. He would select a few undergraduates and choose one to work in his garden and conduct house chores (in exchange for room and breakfast). Others were not as lucky as his chosen one since they would end up with other faculty members. Under his supervision, these students or "boys", as he would call them, would be surrounded by a world of labor, friendship and direction. In fact, accounts tell of Whetzel driving several of "his" students and making them learn the art of gardening and labor by dropping them off at the homes of many of the faculty who were in "desperate" need of garden improvement, as well as some plant disease management. One of the "girls" -if there was such a term- that Whetzel influenced was **Cynthia Wescott**, whom he advised to go into private practice in plant pathology. In fact, she was one of the first to succeed as a plant doctor.

Mentoring and forging students with a solid foundation in plant pathology had to go hand in hand with strengthening the department as well. With the help of Liberty Hyde Bailey, he set on a course of gathering funds to improve the departments' infrastructure, educators, extensionists and researchers. He gathered funds for training and hiring new plant pathologists, of which Wabash College was a beneficiary. These funds would come from growers, industry and government. Whetzel, unlike many contemporaries, believed that Plant Pathology had to go hand in hand with not only the growers but industry as

well. In fact many of the students who came for graduate studies at Cornell were under industrial fellowships. It is of no surprise that research on fungicides was an important component in the graduate curriculum and research. As for the growers, he was able to develop a relationship with them to such an extent that many would not mind when Whetzel would speak on for two hours on a plant pathogen (ie. onion blight) during many of his extension trips.

"Prof" Whetzel, as he was called, had spent sixteen years as head of the department of plant pathology when he decided to step down but continue his role as mentor, instructor and researcher. Not only did he continue as the instructor of the introductory course in plant pathology but was free to conduct research and publish on the Sclerotiniaceae and its 15 known genera at that time. He was also active outside the department, as a faculty representative on the board of trustees and as chairman of the student conduct committee.

One of his greatest contributions to U.S. mycology was that of being a driving force behind the establishment of the Mycological Society of America (MSA) in 1931, of which he was president in 1939. He also served in the editorial board of *Mycologia* for 7 years. In the field of plant pathology, his contribution was as important. "Prof" Whetzel was a charter member of the American Phytopathological Society (APS), member of its first Council, an editor for 2 years and its president in 1915.

As for his University responsibilities outside the department, he was a faculty representative on the board of trustees and chairman of the student conduct committee. Although he was never able to complete his doctoral degree, he did receive two honorary D.Sc., one from the University of Puerto Rico (1926) and



the other from his alma mater, Wabash College (1931). His early experiences with collecting slime molds translated into him being responsible for establishing and organizing the Cornell Mycological Herbarium which had 31,000 specimens when Whetzel died on November 30, 1944, at the age of 67.

His death marked the end of one of the most versatile figures that have been seen in the scientific world. A true visionary, mentor and innovator. For many, one of the best (if not the best) professors of the college of agriculture.



Positive Feedback on Whetzel

"None of his colleagues put on a more entertaining show or more interest compelling presentations of his subject"
 "Whetzel showed genius at solving old problems in new ways"
 "...reversing the distrust that many farmers had for university scientists."

References

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- Fitzpatrick, H.M. 1945. Herbert Hice Whetzel. *Mycologia* 37:393-413.
- Whetzel, Herbert Hice. 1918. An Outline of the History of Phytopathology. W.B Saunders Company. Ithaca, New York. 130pp.

Faculty, staff, students, alumni, and colleagues of our department...

Matt Pettersen delivered his M.S. exit seminar on February 6, 2001. His seminar was titled "Tobacco Mild Green Mosaic Virus, U2, (TMGMV U2) as a Potential Bioherbicide of Tropical Soda Apple (*Solanum viarum* Dunal). Matt's advisor is Dr. Charudattan and the members of his committee are Drs. Hiebert and Zettler. Way to go, Matt!!!



Dr. Raghavan ("Charu") Charudattan, participated in the second International Organization for Biological and Integrated Control (IOBC) Global Working Group Meeting on Biological and Integrated Control of Water Hyacinth in Beijing, China, October 9-12, 2000. Charu presented a keynote talk on the use of plant pathogens as biological control agents of water hyacinth. The meeting was organized and hosted by the Chinese Academy of Agricultural Sciences and the Chinese Institute of biological Control. Charu visited the institute as well as the U.S.D.A./A.R.S Sino-American Biological Control Laboratory, both located in China.



Alvaro Urena successfully defended his doctoral thesis in December of 2000. Alvaro has accepted a position with Chiquita Brands International and will be based in Costa Rica. Congratulations and keep in touch!!!

Pete Timmer's lab at the CREC, Lake Alfred, will have two visitors over the next few months: Natalia Peres and Juan Pedro Agostini.

Natalia Peres, a doctoral candidate at the University of Sao Paulo in Botucatu, Brasil will spend from February to July working on *Colletotrichum acutatum*, the cause of postbloom fruit drop of citrus. She is collecting isolates from South America, Central America, the Caribbean, and Florida and will be doing molecular studies in the laboratory of K.-R. Chung to determine the population dynamics and origin of the pathogen. She spent several months in Lake Alfred last year evaluating the activity of benomyl in control of postbloom fruit drop and the development of resistance to the fungicide.

Juan Pedro Agostini, plant pathologist at INTA, Montecarlo, Misiones in Argentina will spend an 8-month sabbatical in Lake Alfred. Juan Pedro is a former student in the department and did his M.S. with Pete on *Phytophthora* and his Ph.D. on *Colletotrichum*, the cause of postbloom fruit drop. His current research involves investigation of decline diseases of citrus. He will spend from March to September conducting research primarily on the environmental effects and epidemiology of melanose on citrus.

Coffee Break Schedule

Friday Coffee Break

- 2-16 Kucharek & Song
- 2-23 PD Clinic & Zettler
- 3-02 Bartz, Berger & Stiles
- 3-09 Charudattan & Hiebert
- 3-16 Gabriel & Jones
- 3-23 Kimbrough & Rollins
- 3-30 Kucharek & Song
- 4-06 Pring & Chourey
- 4-13 Office Staff
- 4-20 P.D Clinic & Zettler



Recent Publications

Carrington, M. E., Roberts, P. D., Urs, N.V.R.R. McGovern, R. J., Seijo, T. E. and Mullahey, J. J. 2001. Premature Fruit Drop in Saw Palmettos Caused by *Colletotrichum gloeosporioides*. Plant Disease 85:122-125

Gottwald, T. R., Hughes, G., Graham, J. H., Sun, X., and Riley, T. 2001 The Citrus Canker Epidemic in Florida: The Scientific Basis of Regulatory Eradication Policy for an Invasive Species. Phytopathology 91:30-34

Legard, D. E., Xiao, C. L., Mertely, J. C. and Chandler, C. J. 2001. Management of Botrytis Fruit Rot in Annual Winter Strawberry Using Captan, Thiram, and Iprodione. Plant Disease 85:31-39.

Seebold, K. W., Kucharek, T. A., Datnoff, L. E., Correa-Victoria, F. J., and Marchetti, M. A. 2001. The Influence of Silicon on Components of Resistance to Blast in Susceptible, Partially Resistant, and Resistant Cultivars of Rice. Phytopathology 91:63-69.

Do you want a nifty source of concise, easy-to-read-and-digest reviews of current topics in plant protection? Then look up the Special Issue of the journal Crop Protection, volume 19, Nos. 8-10, Sep.-Dec. 2000. This issue contains about 50 articles based on keynote talks and papers presented at the 14th International Plant Protection Congress (IPPC) held July 1999 in Jerusalem, Israel. It is a good source of useful references. (R. Charudattan)

Plant Path in the BBC

By: Dr. Raghavan Charudattan

Plant pathology on the CBS' 60 Minutes? Well, not quite. But plant pathology was on the center stage last October during a BBC show -- an investigative report titled, "Britain's Secret War on Drugs." The show was featured in a program called the "Panorama," which is somewhat like the 60 Minutes show that is well known on this side of the Atlantic. The show was about the use of mycoherbicides to control the illegal narcotic plants, coca, opium poppy, and marijuana. Since the idea of using fungi to attack crops of narcotic plants has the strong support of some U.S. federal agencies and U.S. scientists, the show's producers interviewed several bureaucrats and scientists involved with funding and research on mycoherbicides, including myself. For one morning last August, my lab was turned into a mini television studio, and I was asked, on camera, some "hard-hitting" questions about my views on "the U.S.-sanctioned biological warfare," namely, the possible unleashing of a coca-killing *Fusarium oxysporum* over Colombian forests by air. My interview ended up, as the saying goes, on the "cutting floor," and except for some silent video clips taken in my lab, nothing of what I said was used in the final show -- a blessing indeed as it turns out! Lest I spoil your curiosity, I'll refrain from commenting on the show's contents except to say that it is worth watching. The show will be played during a Plant Pathology colloquium session; watch for its announcement in the Spring Colloquium Series. To those at the RECs, if you want to borrow the tape, please feel free to contact me.

Did you know...

The first couple to be shown in bed together on prime time television were Fred and Wilma Flintstone.

Coca-Cola was originally green.

Every day more money is printed for Monopoly than the US Treasury.

Men can read smaller print than women; women can hear & smell better.

The state with the highest percentage of people who walk to work : Alaska

The percentage of Africa that is wilderness : 28%

The percentage of North America that is wilderness : 38%

The cost of raising a medium-size dog to the age of eleven : \$6,400

The average number of people airborne over the United States at any given hour : 61,000

Intelligent people have more zinc and copper in their hair.

San Francisco cable cars are the only mobile National Monuments.

Each king in a deck of playing cards represents a great king from history
 ...Spades - King David
 ...Clubs - Alexander the Great
 ...Hearts - Charlemagne
 ...Diamonds - Julius Caesar

$111,111,111 \times 111,111,111 = 12,345,678,987,654,321$

If a statue in the park of a person on a horse has both front legs in the air...the person died in battle.

If the horse has one front leg in the air...the person died as a result of wounds received in battle.

If the horse has all four legs on the ground...the person died of natural causes.

Only two people signed the Declaration of Independence on July 4th : John Hancock and Charles Thomson. Most of the rest signed on August 2...but the last signature wasn't added

until 5 years later.

"I am." is the shortest complete sentence in the English language.

The term "the whole 9 yards" came from WWII fighter pilots in the South Pacific. When arming their airplanes on the ground, the .50 caliber machine gun ammo belts measured exactly 27 feet, before being loaded into the fuselage. If the pilots fired all their ammo at a target, it got "the whole 9 yards."

Hershey's Kisses are called that because the machine that makes them looks like it's kissing the conveyor belt.

The phrase "rule of thumb" is derived from an old English law which stated that you couldn't beat your wife with anything wider than your thumb.

The name Jeep came from the abbreviation used in the army for the "General Purpose" vehicle....(G. P.)

The cruise liner, Queen Elizabeth II, moves only six inches for each gallon of diesel that it burns.

The only two days of the year in which there are no professional sports game (MLB, NBA, NHL, or NFL) are the day before and the day after the Major League all-stars Game.

The nursery rhyme "Ring Around the Rosey" is a rhyme about the plague. Infected people with the plague would get red circular sores ("Ring around the rosey"), these sores would smell very badly so common folks would put flowers on their bodies somewhere (inconspicuously), so that it would cover the smell of the sores ("a pocket full of posies"). Furthermore, people who died from the plague would be burned so as to reduce the pos-

sible spread of the disease ("ashes, ashes, we all fall down").

Biotech Briefs

Molecular plant pathology in the era of genome sequencing

The publication and analysis of the sequenced genome of *Arabidopsis thaliana* in the December 14, 2000 issue of Nature should be of interest to plant biologists from all fields and specialties. Not only have detailed articles about each chromosome been published, but also the entire December issue of Plant Physiology reviewed recent work in the model plant. Reviews and news briefs in academic journals and laymen science publications such as Scientific American have brought the spotlight to plant biology.

The authors estimate that the genome contains 125 Megabases of DNA and use computer modeling to predict that the genome encodes 25,498 genes. The article analyses the complete genome, giving plant biologists a grand view of the potential proteome of an entire plant species. Between the article and the sequence database available at <http://www.mips.biochem.mpg.de/proj/thal/>, biologists can search for and find information like never before. Here I'd like to highlight some predictions that I believe are of interest to plant pathologists. The bulk of this information is discussed in the Recognizing and Responding to Pathogens section written by J. Dangl and J.D.G. Jones.

Out of the entire proteome, 11.5% of the predicted proteins can be classified as having plant defense-related functions. This significant number reflects the amount of resources plants must allocate to defense, as they cannot flee from environmental stresses. Plants, animals, and yeast contain both similar and dissimilar signal transduction pathways and defense



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generating methods. For instance, animals employ mostly receptor tyrosine kinases for general signals; *Arabidopsis* instead has made

more extensive use of serine/threonine receptor kinases. Upon looking at the entire *Arabidopsis* genome, many classes of proteins are under- or over-represented when compared to the other sequenced organisms: *Drosophila*, Yeast, and *C. elegans*.

Essential to defense against pathogens is the ability to recognize diverse pathogens. The *Arabidopsis* genome encodes many polymorphic disease resistance genes at several loci, in order to distinguish many different pathogens. The sequencing of the genome allows identification of potential resistance genes due to their similarity to known genes. Through genetic screens, proteins that have unknown roles in defense can be found, and then their homologs can also be analyzed. This will aid in delineation of the activation pathways for defense mechanisms triggered after pathogen recognition.

Through sequencing the entire genome, the evolution of disease resistance genes can be studied. It seems that resistance gene evolution occurs through duplication and diversification of linked genes. Most resistance genes occur as singletons (46), while 50 are in pairs, and seven are in three-gene clusters. There are single clusters of 4, 5, 7, 8, or 9 genes. Resistance genes that occur in gene clusters may be as either direct (~60%) or as inverted (~40%) repeats. Divergence between linked genes can give rise to new disease resistance.

The largest class of resistance genes encodes intracellular proteins with a nucleotide-binding site (NBS) and a C-terminal Leucine Rich Repeat (LRR) domain. The variable amino-terminal carries either a TIR domain or a putative coiled coil (CC) domain. The *Arabidopsis* genome encodes 85 TIR-NBS-LRR re-

sistance genes at 64 loci and 36 CC-NBS-LRR at 30 loci. Seven genes, at six loci, lack an obvious TIR or CC domain. There are also 15 TIR-NBS genes and 6 CC-NBS genes; these lack the LRR domain. The function of these truncated proteins in disease resistance is unknown, but they are often linked to full-length disease resistance genes.

Other classes of disease resistance genes involved in recognition or response are also known. Another potential class involved in recognition of the pathogen is the LRR transmembrane kinases. There are 174 LRR transmembrane kinases encoded within *Arabidopsis*, however, only one of these has a known role in disease resistance. These can now be systematically disrupted and screened for phenotypes. There are also 122 genes for LRR proteins without kinase domains. The genome encodes 860 Serine/Threonine kinases, some of which may have a role in disease resistance like the tomato protein PTO.

Proteins that function downstream of the resistance protein are also known, such as NDR1, EDS1, and PAD4. There are 28 additional genes like *NDR1* and 3 genes like *EDS1/PAD4*. *NPR1*, involved in the development of Systemic Acquired Resistance (SAR) has 5 additional homologues in *Arabidopsis*. There are two *LSD1* homologues and numerous cysteine proteases. Cloning, characterization and targeted knock-out of these homologues has the potential to reveal signal transduction cascades common to multiple types of resistance.

Through research in other plant species, especially those of agronomic importance, numerous resistance genes have been found. If homologues of these important resistance genes can be found and studied in *Arabidopsis*, the resistance mechanism can be more easily teased out due to all the available data on disease resistance in *Arabidopsis*. Now it is clear that *Arabidopsis* does have homologues to other resistance genes, such as

the *Mlo* gene of Barley. These *Arabidopsis* genes can be characterized, the signaling pathways can be worked out, and then the homologues can be targeted in species that have fewer scientific resources. Now, multiple defense pathways are being worked on in *Arabidopsis*, which allows the synthesis of a bigger picture of disease resistance.

Arabidopsis lacks clear homologues of many mammalian defense genes and contains no homologues to genes in mammals that regulate apoptosis. The *Arabidopsis* genome contains homologues of some of the genes required for the oxidative burst in mammals, but lacks others. Therefore, it is possible that defense mechanisms have evolved independently since the last common ancestor, although in some cases the final product is similar (oxidative burst, nitric oxide production). The potential novelty of the plant defense response increases the challenge and pertinence of the research.

The sequencing of the genome is another resource for this plant species. Obviously, not all research can be done in *Arabidopsis*, but studies in this model organism are essential to discoveries important to all of plant biology. This is the briefest review of the extensive Nature article about the sequencing of the genome. The article is full of interesting tidbits and observations, and is worth checking out, available free online at www.nature.com.

The *Arabidopsis* Genome Initiative. Analysis of the genome of the flowering plant *Arabidopsis thaliana*. *Nature* **408**, 796-815 (2000).

December 2000 issue of *Plant Physiology*

Anita Snyder is a M.S. student in the Plant Molecular & Cellular Biology Program and works with Dr. Wen-Yuan Song in the Department of Plant Pathology, Gainesville.

USPS Profile: The Other Lucious Mitchell



Everybody in the department knows **Lucious Mitchell**, but not everybody knows about the active double life he leads after hours. Here in Fifield Hall, during normal working hours, Lucious works as a Senior Laboratory Technician, helping us all, doing a myriad of different tasks, efficiently and without fanfare. He is especially active on behalf of our teaching programs by providing Xeroxing service, keeping the lab in room 2306 and the library spotlessly clean and secure, ordering teaching supplies, preparing media, videotaping seminars, and even occasionally providing limousine service (He has a chauffeur's license.) But as the sun begins to set, and the doors of Fifield are locked, an altogether different Lucious emerges as he begins his other job on the east side of town in the area surrounding Duval Elementary School, where he has lived for most of his life. There, he becomes a coach, mentor, and role model for children ranging in age from 8 to 17. For almost 30 years, since 1972, he has been working for the Gainesville Recreation and Parks Department, first as a volunteer and then as a Recreational Aide, coaching girl's softball, boy's baseball, basketball, volleyball, and "Pop Warner" and flag football. Managing such a variety of sports ensures that Lucious, or "Lou" to his kids, is busy throughout the year, a fact that did not elude Michelle Brown, Sun Staff Writer, who wrote an article about him in the Gainesville Sun, July 30, 1990, entitled "A Coach for All Seasons."



Lucious, of course, is not just active, but extremely successful as well. An entire wall of his home is devoted to the more than 80 trophies and honors bestowed upon him through his many years of service, including the "Man of the Century" Award he received in June 2000 in recognition for his help in guiding the youth of the local community. Such recognition, of course, is well deserved considering the enormous impact he has made on youngsters he supervises. Some of his former protégées include Michael Harris, Tyrone Baker, Victor Bradley, Ian Scott, and Vernell and Johnell Brown, who now play or once played football for the Florida Gators and the basketball stars, Vernon Maxwell and Orion Green. Football and basketball players in other schools include Josef McNeal, Timothy Carter, Willie Powers, Jr., Darian Noble, Franklin Young, Leon Payne, and Elijah Hooker. Many others, of course, have pursued different careers and are now prominent citizens of the community. Last year, one of his former student athletes, George Burke, established the "Lucious J. Mitchell, Jr., Foundation," which provides fellowships each year to deserving pre-college students in the local community.

We all know Lucious as a patient, wonderfully even-tempered, conscientious, individual, willing to offer each and every person in the department with any help he can provide. But he can be tough when the occasion demands. He served for 2 years in the U.S. Army and,

from 1968-1969, was on active duty as a Sargent, in Vietnam, where he kicked the cigarette habit (Cigarettes draw sniper fire, especially at night.). After his stint abroad, he joined the National Guard and continued to serve until 1998. Clearly, The military skills Lucious picked up in the army are put to good use as he helps maintain order in the Kimbrough and Zettler lower division megacourses with young and captive audiences as large as 300 or more students.

Thus, Lucious richly deserves our respect and gratitude for all that he does during normal work hours, after hours, on weekends, and throughout the year. Michelle Brown summed it up nicely in her newspaper article: "It's 8 p.m., and Mitchell walks from the football field to the softball diamond to help coach Carter's team. The schedule, of course, is nothing new. He probably won't get home until 9:30 p.m., he said. A complaint? No. He was smiling." Lucious and his wife, Betty, have two children, Kendra and Lamar, and a granddaughter, Akacia. The following poem, submitted by his wife, can only help but to epitomize Lucious' positive approach towards life:

Drinking From My Saucer

Haven't got a lot of riches, and sometimes the going's tough.
But I have loving ones around me, and that makes me rich enough.
I thank God for his blessings, and the mercies He's bestowed.
I'm drinking from my saucer because my cup has overflowed.

Faculty Profile: Jeffrey Rollins

This month we would like to acknowledge our new fungal molecular scientist, Dr. Jeffrey Andrew Rollins. He joined the plant pathology faculty team

last August of 2000. Dr. Rollins obtained both his B.S. in biological sciences (1988) and M.S. in plant pathology (1991) at North Carolina State University. His thesis was entitled: Light inducible and mutational changes in the *in vitro* translated polypeptide patterns of *Ceraspora kikuchii*. He then went to Purdue University where he received his Ph.D. in plant pathology (1996) working on the characterization of chromosome variability in *Glomerella graminicola*. He then obtained a post-doc position for the next four years at the University of Nebraska-Lincoln in plant pathology working in Dr. M.B. Dickman's lab.

Dr. Rollins' position is 80% research and 20% teaching. His research right now is exploring the basic molecular mechanisms essential for fungal pathogenesis. His fungal pathogen of choice is *Sclerotinia sclerotiorum*, and the idea is to study the factors that allow this fungus to cause disease and the molecular signaling pathways that regulate those factors. *S. sclerotiorum* secretes high levels of oxalic acid and numerous cellulytic enzymes that are essential for pathogenicity. Since it has been well documented that oxalic acid and enzyme production are regulated by environmental pH, it is Dr. Rollins's hypothesis that pH serves as the signal regulating genes regulating these and other processes relating to pathogenesis and development. Recently Dr. Rollins has cloned the *pac1* gene in *S. sclerotiorum*, which encodes a zinc finger-containing peptide with structural and functional homology to the *Aspergillus nidulans* pH-responsive transcription factor PacC. He is currently working on elucidating this and other signaling pathways involved in *Sclerotinia* pathogenesis and the downstream gene products activated by these pathways. His 80% teaching will be focused on instructing the course entitled: Molecular Mechanisms of Plant Pathogenesis. He is in the process of developing a complimenting semester long course with Dr. Song. The idea is that Dr. Song will teach a semester long course looking at the molecular mecha-

nisms of host-pathogen interaction from a **host** perspective while Dr. Rollins will teach another course in molecular mechanisms involving the host pathogen interaction from a **pathogen** viewpoint.

On a more personal basis, Dr. Rollins moved to Gainesville with his wife Monica, son Andrew (3 years) and daughter Michaela (1 ½ years). From March 13-18th, Dr. Rollins will be attending the Fungal Genetics Conference in California, where he will be giving a poster and oral presentation on "Involvement of a PacC homolog from

Sclerotinia sclerotiorum in sclerotial development and virulence."

If you would like to contribute an article, a short piece, or a suggestion, please mail us at:

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