OWA OFFICE FOR WOMENS AFFAIRS
majority report
newsletter

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The road from apprentice to journey status:

Women making good use of CTC program

It's been fifteen years since Lisa Hammer became one of the first women apprentices with the Indiana University Physical Plant. Working her way through the Indiana University Apprentice Program (IUAP), she earned journey status after completing a four-year electrical apprenticeship and now works on construction at IU. Since her entrance into the predominately male world of the skilled trades, seven other women – Karen Voliva, Diana Pate, Diane Crider, Jill Kenealy, Shelly Silcott, Cheryl Browning, and Marjorie Robinson – have entered the field. In 1991, Voliva completed the apprenticeship program, earning journey status in the heating field.

SHOWN ABOVE (L-R): Diane Crider, Electrician Apprentice; Diana Pate, Electrician; Jill Kenealy, Electrician Apprentice; Cheryl Browning, Plumber Apprentice; and Shelly Silcott, Electrician Apprentice. Not shown is Marjorie Robinson, Elevator Apprentice. Photo courtesy of Cynthia P. Stone, Training & Communications Coordinator, Indiana University Physical Plant.

According to Cindy Stone, Training and Communications Coordinator for the IU Physical Plant, there are two ways that an employee can gain entry into the IUAP, a program established in 1978 to develop qualified, skilled craftworkers for the Bloomington Campus. "Direct Entry" is the primary route and is available only to current IU employees. Under this heading, employees must earn six or more Direct Entry points in their respective craft. Some do this by participating in craft-related classes provided by the Physical Plant's Training and Development Office. For every 30 hours of successfully completed class work, the employee earns one Direct Entry Point. Once they accumulate sufficient points,

See "CTC Program," Page 5

Celebrate Women's History Month - March 2000

Women in Science 1999-2000

Noble Prize Women in Science, Part 2

Women's History Month is a time to honor women. Part II in this series features the remaining five women that have succeeded in the world of science and won the Nobel Prize.

Rita Levi-Montalcini studied the nervous system in embryonic chicks in Italy. Her studies laid the foundation for her discovery of growth factors, molecules that influence the development of immature cells. Nerve growth factors (NGF) may play a vital role in certain degenerative diseases of the central nervous system, such as Alzheimer's. Rita completed medical school at the University of Turin in 1936, two years before Benito Mussolini issued "The Manifesto for the Defense of the Race," which prohibited Jews from pursuing professional careers. Levi-Montalcini was forced to perform her experiments in a secret, homemade lab. In 1946, Rita arrived at the Washington University in St. Louis as a visiting researcher, but she remained there and became a full professor in 1958. She was elected to the National Academy of Sciences in 1968, and, in 1986, received the Nobel Prize for Medicine and Physiology, with colleague Stanley Cohen, for their work on nerve growth factors.

Dorothy Crowfoot Hodgkin won the Nobel Prize in Chemistry in 1964. Dorothy reinvented the use of crystallography by using it to determine the structures of molecules, including penicillin, vitamin B_{12}, and insulin. She helped establish the use of molecular structure to explain biological function. In 1947, she was admitted to the Royal Society of London, the nation's most prestigious scientific organization, and in 1965 she received the Order of Merit from Queen Elizabeth, making her the only other woman since Florence Nightingale to receive this honor.

Gertrude Belle Elion graduated with highest honors in chemistry from Hunter College in 1937. She received her master's degree in chemistry from NYU. In 1945, Elion began working for George Hitchings on the purine bases adenine and guanine, which are the building blocks for DNA and RNA. In 1950, she synthesized 6-mercaptopurine, which, combined with other drugs, could treat childhood leukemia. Other drugs her team discovered include Imuran, which is used on kidney transplant patients so their bodies don't reject the organs, and Zovirax, which is used against Epstein-Barr virus, psuedo-rabies in animals, and herpes. In 1988, Elion won the Nobel Prize in Medicine with George Hitchings for demonstrating the differences in nucleic acid metabolism between normal cells and disease-causing cancer cells, protozoa, bacteria, and viruses. She also received the National Medal of Science in 1991 and was elected to the National Academy of Sciences.

Rosalyn Sussman Yalow, received her Ph.D. in nuclear physics in 1945 from the University of Illinois in Champaign-Urbana. Her work with Solomon Berson on the development of the radioimmunoassay (RIA) procedure, which revolutionized endocrinology and the treatment of hormonal disorders like diabetes, earned them the Nobel Prize in 1977. RIA uses radioactively tagged substances to measure antibodies produced by the immune system. It allows doctors to detect underactive thyroid glands in babies, hormone-secreting cancers, and other endorcrine-related disorders. In 1975, Rosalyn was elected to the National Academy of Sciences and she received the National Medal of Science in 1988.

Christiane Nhsslein-Volhard attended the University of Thbingen in Germany. After receiving her master's and doctoral degrees, she moved to Basel, Switzerland and began studying the genetics of fruit flies. In 1978, Nhsslein-Volhard moved to Heidelberg to lead a small research group at the new European Molecular Biology Organization laboratory (EMBL) with friend and colleague Eric Wieschaus. They studied the genes that affect the development of the fruit fly's embryonic pattern. In 1981, she returned to Thbingen as a small group leader at the Friedrich-Mieshcher Laboratory of the Max Planck Society, Germany's biggest basic research institution. In 1985, she became the director of the Society's Developmental Biology Laboratory. She received memberships in the National Academy of Sciences and the Royal Society and honorary degrees from Yale, Princeton, and Harvard universities. In 1995, Nhsslein-Volhard won the Nobel Prize in Medicine with Wieschaus for their work on the genetics of fruit flies.

-Mindy Criser
Women in Science Program

The Majority Report

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The majority of students enrolled at IU Bloomington are women, who constitute 53.9% of the student body.

Majority Report Index Sources:

1 & 2, USA Today website; 3, 4, & 10, Harper's Index, January 2000; 5, National Parks Website; 7 & 8, Center for American Women and Politics website; 9, Institute for Women's Policy Research.

Women and the Sciences:

Why Women Pick Math and Science Majors

Why do some college women decide to major in science, mathematics, and engineering while other equally talented women shy away from these traditionally male fields? Jillian Kinzie, a Ph.D. candidate in Educational Leadership and Policy, might be able to shed some insight onto this selection process.

Kinzie, along with School of Education Faculty Member Fran Stage and former graduate student Patty Muller, have been addressing this question by using a longitudinal data set maintained by the U.S. Department of Education. The data tracks approximately 25,000 students from eighth grade through college, asking many questions that relate to math and the sciences.

For Kinzie, the most intriguing questions involve the problem of getting more women to select male-dominated majors, especially when they sometimes do not have a strong mathematics and science background from high school. The data has shown that female students typically have lower mathematics and science achievements and tend to take fewer courses in these areas during high school. Another problem is that men and women are taking different courses. Female students tend to opt for earth science, general science, biology, and chemistry, while male students are taking physics in lieu of either earth or general science.

Of course, if women arrive at college with fewer prerequisites for science, mathematics and engineering majors, they are behind. They may then have to take courses that they missed during high school – which can be a problem, especially in the "hard sciences" where a full four years of course work is already required for the major.

Who Majors in Math and Science?

Kinzie has participated in two studies that are trying to expand on the traditional models of who will major in mathematics, science, or engineering. In general, mathematics achievement is the strongest predictor of who will select one of these majors. However, this prediction is based on a study that combines all cases regardless of gender or race.

Once this is broken down by gender and race, other factors become apparent. For white men, mathematics achievement is still the strongest predictor. For white women, mathematical ability is still a predictor, but two other factors are important. A positive math self-concept – thinking "I do well in math" – and an expressed interest in a science career as early as eighth grade are both indicators for these women.

For African-American women, mathematics achievement is still an important factor, but socioeconomic status is a significant predictor. Furthermore, science and mathematics behaviors – time spent studying or devoted to homework outside of class – is another predictor. According to Kinzie, this may be an implication of resilience because these students are making a conscious effort in learning about math and science.

"What is significant is how much math achievement is still a filter for these women," noted Kinzie.

What about "Surprise" Majors?

A second study is looking at what distinguishes women who major in mathematics, science, and engineering from women in other fields. Of particular concern are those women who expressed an interest in a math or science major in tenth grade but did not select one of these majors in college and women who did not have an interest in tenth grade but did select a math or science major in college ("surprise majors").

Those women who expressed an interest in math and science majors in the tenth grade and go on to major in these fields tend to have higher math achievement in high school, have consistently earned good grades in science, and have a strong belief in their math and science ability. Those who expressed an interest but did not major in math or science appear to have a lower level of mathematical achievement.

When looking at "surprise majors," one factor that is significant is that these women tended to have negative attitudes associated with math and science in high school. They were also less likely to take the full compliment of math and science courses offered in high school. At the college level, this could have several implications. For instance, how will the university ensure that these students have the classes and support that they need? Will a lack of support lead these women to "drop" their math or science major later in their college career?

This "drop" group is also a concern because it is the hardest to predict. "It's not simply a matter of negative math beliefs. It's much more complex than this," noted Kinzie.

Improving Our Understanding

It is not enough to simply use statistics to "predict" who will major in the math and sciences. The studies could help improve our understanding of the factors that contribute to a student's decision to enter these fields, especially those students who are traditionally underrepresented – namely women and minorities. "If we can better understand the factors that influence students to enter and remain in science and math education, then we might be better able to encourage and support underrepresented students in these fields," noted Kinzie.

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Returning Women Overcome Obstacles

The path to a college education may be filled with obstacles, but returning women students are doing an outstanding job facing down the challenges of financial considerations and childcare. This semester, approximately 850 returning women are setting their fears aside and working on their degrees at IU.

According to Sally Jones, Program Developer and Coordinator for the IUB Division of Continuing Studies, "Female students who are older are reluctant (rightfully so) to take on large amounts of loan debt to complete their education. Since most of them return to college to boost their earning potential after a divorce or death of a spouse, their current financial situation is usually not strong."

The lack of a "parental safety net" can also be an obstacle that many returning women have to overcome. When emergency expenses for medical care or car repairs come up, they cannot turn to their parents for money.

Childcare costs can be another problem for returning women students. Many returning women who are mothers face special problems in finding quality care for their children while they work and go to school. Although there are programs to help these women offset the cost of childcare, the waiting lists are long and many women students have to borrow money to cover the cost of caring for their families.

Evening childcare is an even bigger hurdle. Many returning women students, especially single mothers, have to take evening classes to fit their work schedules, or need time to attend study sessions, group projects, or go to the library.

Returning women students also have to readjust to living life as a student and may need to take review classes to bone up on study skills. "This is offset by their motivation and maturity which is an asset to their work as students," said Jones. "I am inspired by how well returning women do academically. They tend to be very demanding of themselves.

"Because their lifestyles and responsibilities differ from those of traditionally aged-students, many returning women students feel isolated on campus when they begin school," Jones added. "This adjustment period can be tough. Meeting other returning students is an important part of establishing a support network during this time. Our

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Women's History Month Events

March 22, 2000

Fedwa Malti-Douglas, the Martha C. Kraft Professor of Humanities in the College of Arts and Sciences, presents: "Clinton, Lewinsky and the Great Books"

Whittenberger Auditorium, Indiana Memorial Union -- 3:30 p.m.

Reception at the Faculty Club, 250 Indiana Memorial Union -- 5 p.m.

Sponsored by the Office of the Vice President and Bloomington Chancellor and The Research and the University Graduate School

March 23, 2000

Over a Cup of Tea – A Discussion on "Asian-American Women in Non-Traditional Roles"

Asian Cultural Center, 807 E. 10th Street -- 7 p.m.

Sponsored by the Asian Cultural Center

March 31, 2000

Suesan Stovall presents her collection, "No Longer Shall Others Speak for US"

Also featuring a performance of theatre and song

African American Cultural Center, 7th and Union Streets -- 7 p.m.

Reception following

Sponsored by the Black Graduate Students' Association

Teleconference

"Women's Lives, Women's Voices, Women's Solutions: Shaping a National Agenda for Women in Higher Education"

Oak Room, Indiana Memorial Union -- 3 p.m. to 5:30 p.m.

Sponsored by the Office for Women's Affairs

CTC Program, *continued from Page 1*

they move to an interview and skip all testing and screening procedures.

Another way to earn these points is through the Cross-Training for Careers (CTC) Program. Originally called the Custodian to Craftworker program, it offers service maintenance staff expanded job opportunities with better pay and hours. For every 500 hours of work completed, the employee earns one Direct Entry Point.

"The CTC and Direct Entry programs have been of great benefit to our staff and the university," noted Gary R. Kent, Assistant Vice President for Facilities Operations. "We are creating a pool of highly skilled people to replace staff that retire or accept jobs away from IU. This provides a means of advancement, development, and career opportunities for all that participate.

"For many years, we tried to attract women into the skilled trades area, but those efforts met with little success. I think we've now found a successful route to this goal and the university is enjoying the advantages of expanding opportunities to all those qualified and committed to becoming highly trained and skilled trades people," Kent added.

Working through the CTC Program

Pate was the first female to work through the CTC program and achieved journey status as an electrician in 1999. Crider and Kenealy, both electrician apprentices, Browning, a plumber apprentice, and Robinson, elevator electrician apprentice, also went through the CTC program.

The CTC program has both challenges and rewards. Kenealy, who started working for IU as a custodian in 1989, started the CTC program in 1992. Although she was still working the night shift, she would come in early to attend classes. "It was helpful that I had Diana to go through the program with," she noted.

Kenealy noted that when she first entered the CTC program, she picked the electrical field because even if she did not get a job at IU in the crafts, she could use what she learned at home. "Fortunately, this has blossomed into more for me," she commented. As an apprentice, Kenealy is doing jobs such as running conduit, pulling electrical wiring, and installing light fixtures and electrical outlets.

Robinson also started out as a custodian, working first in Swain Hall West and later in the Law Library. "I had been cleaning for seven years before going into the CTC program," she noted.

She spent a year in the CTC program, initially training to be an electrical apprentice. Over the year, she changed her mind and now works with the elevator program.

Robinson's main incentive for enrolling in the CTC program was the chance to improve her earning ability. In addition, her father had been a journeyman at IU and encouraged her to make the switch.

Entering through External Recruitment

When apprenticeships cannot be filled through Direct Entry, the Joint Apprenticeship Committee (JAC) conducts external recruitment. The JAC announces open apprentice positions in local newspapers and the IU employment bulletin. Although she was already an IUB custodian, Crider became an apprentice through this process because she had already earned an associate's degree in electronics from Ivy Tech State College.

Silcott was another female apprentice who used this route. Previously, she had been a dispatcher with a company in Bedford. When she was laid off from her job, she went back to school for an associate's degree at Ivy Tech. Prior to coming to IU, she worked for a Bloomington company, Contec.

Silcott's main challenge was the interview process itself. Characterizing it as an "overwhelming" experience, she noted that she had avoided the IU campus her entire life – so she ended up getting lost when looking for the Physical Plant's office. When she did find the office, Silcott was the only woman in the room during her interview.

Now that she's here, however, life has gotten easier. "I have no problems with any of the people I work with," said Silcott.

A Changing "Culture"

"One of the biggest changes I have seen is that there are more women working in the physical plant," noted Kenealy.

Over the past 21 years, there have been 131 apprentices to complete the IUAP program with only four of these being women. In the last couple of years, however, there has been a dramatic turnaround with the CTC playing a significant role.

"Women have used the CTC program very effectively," Stone commented. Although only seven out of 225 craftworkers are women, 20 to 25 percent of the CTC participants are women.

While many women are afraid to make the switch over to a predominately male field, the female apprentices noted that the "culture" within the physical plant has become more positive over the past 10 years. Both Kenealy and Robinson commented that once they had "proven" themselves, people were willing to work with them.

Kenealy's advice to other women who are considering a switch to the crafts at IU is to find a goal and work for it. "Start taking the classes and see if you like it," she said. "Do the CTC program."

Women's History Fact

Sarah Parke Morrison earned her bachelor of arts degree in 1869, making her the first woman to graduate from IU.

Women's History Month: Perspective

EDITOR'S NOTE: The following is an excerpt from the July 1943 issue of *Mass Transportation.* This was serious and written for male supervisors of women in the work force during World War II — a mere 56 years ago!

Eleven Tips on Getting More Efficiency Out of Women Employees

There's no longer any question whether transit companies should hire women for jobs formerly held by men. The draft and manpower shortage has settled that point. The important things now are to select the most efficient women available and how to use them to the best advantage.

Here are eleven helpful tips on the subject from Western Properties:

1. *Pick young married women. They usually have more of a sense of responsibility than their unmarried sisters, they're less likely to be flirtatious, they need the work or they wouldn't be doing it, they still have the pep and interest to work hard and to deal with the public efficiently.*
2. *When you have to use older women, try to get ones who have worked outside the home at some time in their lives. Older women who have never contacted the public have a hard time adapting themselves and are inclined to be cantankerous and fussy. It's always well to impress upon older women the importance of friendliness and courtesy.*
3. *General experience indicates that "husky" girls - those who are just a little on the heavy side - are more even-tempered and efficient than their underweight sisters.*
4. *Retain a physician to give each woman you hire a special physical examination - one covering female conditions. This step not only protects the property against the possibilities of lawsuit, but reveals whether the employee-to-be has any female weaknesses which would make her mentally or physically unfit for the job.*
5. *Stress at the outset the importance of time - the fact that a minute or two lost here and there makes serious inroads on schedules. Until this point is gotten across, service is likely to be slowed up.*
6. *Give the female employee a definite day-long schedule of duties so that they'll keep busy without bothering the management for instructions every few minutes. Numerous properties say that women make excellent workers when they have their jobs cut out for them, but that they lack initiative in finding work themselves.*
7. *Whenever possible, let the inside employee change from one job to another at some time during the day. Women are inclined to be less nervous and happier with change.*
8. *Give every girl an adequate number of rest periods during the day. You have to make some allowances for feminine psychology. A girl has more confidence and is more efficient if she can keep her hair tidied, apply fresh lipstick and wash her hands several times a day.*
9. *Be tactful when issuing instructions or in making criticisms. Women are often sensitive; they can't shrug off harsh words the way men do. Never ridicule a woman - it breaks her spirit and cuts off her efficiency.*
10. *Be reasonably considerate about using strong language around women. Even though a girl's husband or father may swear vociferously, she'll grow to dislike a place of business where she hears too much of this.*
11. *Get enough size variety in operator's uniforms so that each girl can have a proper fit. This point can't be stressed too much in keeping women happy.*

-- Courtesy of Cindy Stone

Math and Science, ***continued from page 3***

Since the middle school and high school years are a critical period for students to become interested in and begin their pursuit of science education, we ought to focus our efforts on these junctures. Kinzie noted that it is not enough to try and recruit students into science in college. However, it is critical to ensure that beginning students in science are supported.

Furthermore, it is important to support women who are pursuing graduate level science degrees. While undergraduate numbers of women and minorities in science, math, and engineering majors have increased, the numbers going into graduate school have dropped. This does not bode well for changing the composition of faculty members in science and mathematics.

Returning Women, ***continued from page 4***

office tries to facilitate this."

Time management is also a struggle, but Jones noted, "Most returning women students are remarkable in their ability to juggle their many responsibilities and excel in college. Many work, take care of their families – including aging parents – and volunteer in the community and on campus in addition to being students."

"Women returning to college also bring with them many strengths," she concluded. "In addition to their academic talents, they bring motivation, life experience, a sense of humor, and maturity that helps them overcome these challenges and excel in college."

New Women Faculty, Part Three

Amy Dittmar has joined the faculty of the Department of Finance within the Kelley School of Business. Dittmar received her undergraduate degree in Finance and Business Economics from Indiana University and is completing her Ph.D. in Finance from the University of North Carolina at Chapel Hill. She will be a Lecturer in Finance, converting to Assistant Professor of Finance upon completion of her Ph.D. Dittmar's areas of research and teaching interests are corporate finance and financial institutions. Her dissertation examines the capital structure and financing choices of corporate spin-offs. Additional research examines stock repurchases and executive compensation.

Mary Ann Hart has joined the School of Music as an associate professor. She received her Diploma with Distinction in Lied and Oratorio from the Hochschule fur Musik und Darstellende Kunst in Vienna, and her M.M. degree from the University of Illinois in Champaign-Urbana. She has served on the faculties of the Mannes College of Music, Vassar College, and has maintained a private studio in Manhattan since 1985. Hart made her New York Philharmonic debut under the direction of Kurt Masur in his first season as Music Director. She won first prize in the Concert Artists Guild International Competition, and was the second prizewinner in the 1987 Carnegie Hall International Competition. Recital appearances have taken her to 26 countries. Out of sight, she sang six roles in Ravel's L'Enfant et les Sortileges for the Netherlands Ballet Theatre production at the Metropolitan Opera and did voice characterizations for the Disney animated films Beauty and the Beast and Pocahontas. Hart has recorded widely under the auspices of the Chandos, Albany, Eterna, Arabesque, Telefunken-Decca, and Musical Heritage labels.

Sarah Queller joined the psychology department as an assistant professor. Queller earned her B.S. in Biology/ Genetics in 1984 from the University of Illinois at Urbana-Champaign and her Ph.D. in 1997 from the University of California, Santa Barbara. She was awarded an NIMH postdoctoral fellowship which allowed her to pursue her research at Purdue University from 1997 to 1999. Her research interests focus on (1) the representation and processing of social information involved in stereotype learning and change, and (2) inter-group processes such as the effects of in-group identification on perceptions of fairness.

Jane E. Goodman joined the Department of Communication and Culture this fall. Goodman received her Ph.D. in anthropology in 1999 from Brandeis University. Her teaching and research interests center on performance, textuality and discourse, aesthetics and politics, and colonialism/postcolonialism with a focus on North Africa and France. She has written on "Berber Pop" (a world music genre developed in Algeria) and its relation to both colonial forms of representation and contemporary Berber identity. This academic year, Goodman is offering an undergraduate course that looks at the connections between performance, culture, and power in the Middle East and North Africa as well as a graduate seminar that explores colonial and postcolonial formations worldwide. She also directs and will be redesigning the department's multi-section introductory course on interpersonal communication.

Karma Lochrie has joined the English Department as a Full Professor. Lochrie received her B.A. from DePauw University and her M.A. and Ph.D. from Princeton University. A specialist in the English Middle Ages, she has particular expertise in the theory and history of gender. She has published three books: Margery Kempe and Translation of the Flesh, Covert Operations: The Medieval Uses of Secrecy, and with James Schultz and Peggy McCracken, the co-edited volume, Constructing Medieval Sexuality. Her current book-length study probes the categories of sodomy and heterosexuality in the medieval period. Lochrie has previously taught at the University of Hawaii and at Loyola University.

Kimberly L. Geeslin joins the Department of Spanish and Portuguese as an assistant professor in Spanish. Geeslin received a B.A. in Spanish from the University of New Hampshire in 1993, a M.A. in 1995, and a Ph.D. in 1999 in Theoretical Linguistics and Second Language Acquisition from the University of Arizona. At IU, she will be teaching a graduate seminar on second language acquisition theory as well as a senior-level methodology course for students preparing for teaching internships at high schools this spring. Geeslin's research and teaching interests include second language acquisition theory and the applications of theoretical linguistics to the study of acquisition. In particular, she is interested in the second language acquisition of grammatical aspects of Spanish by speakers of English.

MAJORITY REPORT INDEX

Percentage of women that receive at least 11 e-mails a day 60

Percentage of men that receive at least 11 e-mails a day 49

Number of World War I battleships said to have been built from the steel donated by U.S. women from their corsets 2

Chance that a U.S. woman over the age of 40 made love in her clothes in the 1940s ..... 1 in 3

Year that the First Women's Rights Convention was held in Seneca Falls, NY 1848

Year that U.S. women received the right to vote 1920

Number of women currently serving in the U.S. Senate 9

Number of women currently serving as governor of a U.S. state 3

Largest percentage of women representatives serving in a state legislature ..... 39.5 in Washington State

Number of New York City children issued Civil Defense dog tags by 1952 to identify them after a nuclear attack ..... 2.5 million

Sources are printed on page 2.

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