HAIR TRANSPLANT FORUM INTERNATIONAL

forum

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Ergonomics in Follicular Unit Transplantation: A New Design for Stereoscopic Dissection Tables

Bernard P. Nusbaum, MD Miami, Florida

The labor-intensive nature of follicular unit transplantation (FUT) creates a setting for ergonomic intervention strategies. Fatigue, cramping, chronic back pain, and upper extremity disorders have been associated with factors such as: repetitive tasks, job specialization, awkward posture, finger movements with flexion or extension of the wrist, and "pinch" hand posture (Table 1).

Table 1. Ergonomic Measures in Follicular Unit Transplantation

FACTOR	POSSIBLE INTERVENTION
Repetitive Tasks	(?) Inherent to FUT
Job Specialization	Job Rotation
"Pinch" Hand Posture	The Hair Implanter Pen (In graft placement)
Awkward Posture	Ergonomic Chair (Arnold)
Finger Movements with Flexion or Extension of the Wrist	—Mantis Scope —New Dissection Table

Specifically, microscopic dissection has biomechanical similarities to a factory workstation and lends itself well to ergonomic interventions. Currently there are two choices of microscopes: the Mantis and the binocular stereoscope. The author has designed a dissection table that provides for the superior optical features of the binocular stereoscope while achieving the favorable upper extremity ergonomics of the Mantis (Table 2). Specifically, creating a flat working surface to avoid finger movements with flexion or extension of the wrist, an activity associated with cramping, tendinitis, and carpal tunnel syndrome.

Recessed "cut-outs" that match the shape and height of the microscope base are placed at 18¾ inch intervals (Figure 1). With stereoscopes placed into the "cut-outs," the microscope cutting surface is flush with the rest of the table (Figure 2). This allows the dissection process to take place with the wrist in a neutral position (Figure 3, A–D). If a backlighting device or loupe dissection is desired, the recessed area is filled with appropriately shaped inserts, restoring the table to a conventional design (Figure 4).

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In every issue...

In this issue...

President's Message

Marcelo Gandelman, MD
Sao Paolo, Brazil

Why do so many people dream of living on an idyllic desert island with their best friends? Because on an island you can establish your own rules and laws, abolish all villains, and appreciate each other's best qualities as they bloom. As there are few deserted islands, human beings create groups that agree to be on the same level—nobody superior or inferior: Boy Scouts, Freemasonry, and most of the clubs.

In the medical area, gathering in societies is a vital survival factor. The medical profession has rules and laws that differ from business organizations. A physician's identity depends on his education, his character, and on his capacity to produce ideas. A physician is not proud of what he possesses, he is proud of what he knows and what he is.

In our specialty, everything is a product of collective ideas. I acquire ideas from others and with them my mind produces new concrete techniques. ISHRS was clearly born from a basis of study, research, and information exchange—the *Forum*.

Instead of the implacable competition found in business organizations, a research and informational society such as the ISHRS is non-competitive because it is a network of fraternal, non-hierarchical relationships. Encounters with colleagues, especially with those who share our ideals, are essential, interrupting our boring routine.

Besides the technical aspect, our Society tries to maintain a high ethical standard because our profession is based on services and not products. In a relationship based on services, ethics has a singular role as warranty. We already have a Bylaws and Ethics Committee. However, where will we look for daily advice on decisions that appear in our Society: publicity in the *Forum*, banners on the Website, grants, awards, disloyal conduct of a colleague?

In the same way that the human being inherits not only genetic characteristics but also cultural knowledge, we develop professionally receiving feedback from the more experienced doctors. We can apply this principle to the issue of past-presidents. As unfamiliar situations are difficult to manage, we count on this admirable constellation of contributors for mature guidance. As Sheldon Kabaker said in his past *Forum* letter, "Their struggle for values and not for personal objectives, shows dedication to the ISHRS as a lifetime contribution to the field."

In conclusion, we have everything on our ideal island: rules and laws made and approved by all, interchange of information bringing us new ideas to improve our knowledge and professional performance, advice of experts, and above all a pleasant fraternal conviviality. If those rules and laws are not followed, the spell is broken and there goes our idyllic island.✧

Marcelo Gandelman

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The ISHRS Golden Follicle Award sculpture, as seen on the cover of this issue, was designed by Francisco Abril, MD. Dr. Abril offers for sale, copies of a small bronze hair follicle sculpture (10" high). For more information, please contact: Clinica Dr. Francisco Abril, PO dela Habana, 137, 28036 Madrid, Spain. Phone: 34-1-359-1961; Fax: 34-1-359-4731.

Editors' Message

The article "Finasteride Revisited" (page 69) by Ed Epstein, MD, in this issue of the *Forum* should be mandatory reading for all hair transplant surgeons. Dr. Epstein makes a cogent case for encouraging us all to offer this therapy to our patients. We are rapidly reaching the point where significant fears as to medico-legal implications of future side effects cannot be justified. Side-effect levels are very low and have often more to do with psychological fear of sexual side effects than the actual development of the effects.

Patient satisfaction is high if the proper explanation of likely outcomes has been discussed. Patients still frequently tell us that finasteride failed because they saw no increased hair growth in the first 3–4 months of therapy! It is useful to describe the first year of therapy as "stabilization therapy." This educates the patient by emphasizing that stabilization is the primary and expected goal in the short term. This is a successful outcome. Increased hair growth is a bonus. We find that patients do understand the benefit of allowing the surgeon to operate in a potentially "stable" environment as it lessens the possibility of multiple future surgeries (and expense). In addition, we emphasize that surgically adding hair to their current amount of remaining hair will, in most cases, provide a superior result than waiting or allowing further loss to occur by refusing medication. Patient acceptance of these arguments, and therefore compliance, is high in our experience. In contrast, the compliance rate noted of all physicians who prescribe finasteride showed less than 50% of patients complete the first 12 months.

Russell Knudsen, MBBS
Sydney, Australia

Dow B. Stough, MD
Hot Springs, Arkansas

The recently released 5-year results of the placebo-controlled trial of finasteride are both impressive and encouraging. Using hair counts, 65% of participants had stable or increased hair counts. Using photographic assessment, 90% of participants had stable or increased growth. Why the discrepancy? Presumably, the hair shaft diameter of the remaining hairs had increased providing greater coverage. While these figures are impressive, caution must be used in their interpretation as only 668 patients completed the 5-year trial (placebo) that finished last year. Over 1,500 patients commenced the 2nd–5th year extension trial with 60 placebo controls, so it is intriguing to note the high "drop-off" of patients during the trial.

It is reaching the point where the refusal to discuss or offer finasteride to men with hair loss could be interpreted as less than the standard of care for the community of hair transplant surgeons. All patients need to have the costs and benefits fully explained to them so they can make an educated choice.✧

Russell & Dow

"Very simple ideas lie within the reach only of complex minds."

—Remy De Gourmont

To Submit an Article or Letter to the Forum Editors

Please send submissions via a 3½" disk or e-mail, double space and use a 12 point type size. Remember to include all photos and figures referred to in your article. For e-mail submissions, be sure to ATTACH your file(s)—*do not* embed it in the e-mail itself. **We prefer e-mail submissions with the appropriate attachments.**

Submit all North American entries (Canada, USA, Mexico) to:
Dow Stough, MD
One Mercy Lane, Suite 304
Hot Springs, Arkansas 71913
e-mail: sstough@cswnet.com

All other entries to:
Russell Knudsen, MB, BS
Level 3, 4-10 Bay Street
Double Bay
Sydney NSW 2028
AUSTRALIA
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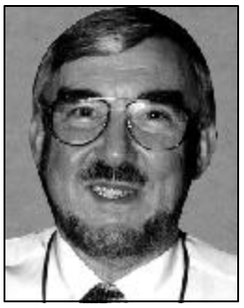
Submission deadline for the July/August is June 10; for September/October, August 10.

Notes from the Editor Emeritus



Richard C. Shiell, MBBS
Melbourne, Australia

Interim Report on the Korean 1st Traveling Workshop

As the May/June *Forum* was going to press, 16 members of the ISHRS winded their weary way homeward from Taegu in South Korea.

I was among the invited Faculty of this First Traveling Workshop, which also included Past Presidents Paul Straub, Russell Knudsen, and Sheldon Kabaker. The meeting was convened by Professor Jung Chul Kim and his capable staff at the Kyungpook National University Hospital, and jointly sponsored by the ISHRS and the WHS.

The workshop was well attended by over 250 physicians, mostly Korean, from a wide variety of medical disciplines. The meeting was organized by Dr. Kim's associate Dr. Sungjoo Hwang, and he did a first-rate job with most sessions running to time and a minimum of A.V. computer "glitches." This is a remarkable achievement considering it was their first attempt at this type of program.

The mornings were devoted to didactic lectures and the afternoons to live surgery with three procedures running simultaneously in spacious and well air-conditioned operating rooms. The pictures were carried by landline to the adjoining auditorium where the procedures could be viewed at leisure and questions asked of the surgeon.

It was not all work, however, and the social side of the meeting was well covered. There were daily tours for spouses of participants and excellent dining for all. After dinner each evening a number of "stayers and players" departed by bus to a Karaoke Bar where drinking and singing went on until the early hours of the morning. I can inform *Forum* readers that they can forget the story about Asians not being able to hold their liquor—it was the Caucasians who skipped breakfast and boarded the bus wearing dark glasses the next morning!! The Koreans remained "bright eyed and bushy tailed" through three nights of heavy socializing.

Dr. Kim and his associates are a truly remarkable group and I look forward to presenting more details of their work in the July/August issue of the *Forum.*✧

Richard Shiell

Congratulations to the Latest Recipients of the ISHRS Five-Year Meeting Pin

We launched a new initiative that began at the ISHRS Annual Meeting in Hawaii this past year. In an effort to honor those members who contribute and participate in ISHRS Annual Meetings, we recognized those individuals who have attended five ISHRS Annual Meetings with a special lapel pin.

In Hawaii, we distributed 115 pins to recipients that had earned their Five-Year Pin from attending at least five meetings during the years 1993–2000.

The following 19 members who attended the Annual Meeting in Hawaii have now earned their Five-Year Pin as a result of the 2000 meeting. The ISHRS wishes to congratulate these individuals for their dedication and participation in the ISHRS! Pins will be distributed at the next Annual Meeting, to be held October 18–22, 2001, in Puerto Vallarta, Mexico.

Alfonso Barrera, MD
Glenn Michael Charles, DO
Jerry E. Cooley, MD
Vance W. Elliott, MD
Richard P. Giannotto, MD
Virind D. Gupta, MD
Manuel O. Jaffe, MD
Carol C. Kenney, RN
Erika Mathis
Jose Candido Muricy, MD
Albert J. Nemeth, MD
Rolf Nordstrom, MD, PhD
Carlos J. Puig, DO
William H. Reed II, MD
Gerald Seery, MD
Carl B. Shory, MD
R. Sundarason, MD
Mario Gino Terri, MD
Robert H. True, MD

Finasteride Revisited

Edwin S. Epstein, MD Richmond, Virginia

The recently presented 5-year results of Merck's Propecia® study clearly demonstrate the efficacy and benefits of Propecia®. Despite the excellent review of the effects of finasteride on the prostate gland by James Harris, MD, in the September/October 2000 issue of the *Forum,* the unfounded concerns as it relates to prostate cancer need to be addressed. Having practiced Urology for 13 years, I would like to share my thoughts and expertise.

The effects of Type II 5 alpha reductase deficiency have been extensively studied as an inherited form of male pseudohermaphroditism in a group of men living in the Dominican Republic. They provide a "natural" model for the long-term effects of very low levels of dihydrotestosterone (DHT). These men do not develop androgenetic alopecia, benign prostatic hyperplasia, or carcinoma of the prostate. These findings have been the basis for the clinical trials for the use of finasteride in the treatment of benign prostatic hyperplasia (BPH), hair loss, and the chemoprevention of prostate cancer, in both prostatic intraepithelial neoplasia and carcinoma.

"The effects of Type II 5 alpha reductase deficiency have been extensively studied as an inherited form of male pseudohermaphroditism in a group of men living in the Dominican Republic. They provide a "natural" model for the long-term effects of very low levels of dihydrotestosterone (DHT)."

The incidence of both clinically apparent and undiagnosed or latent carcinoma of the prostate increases with age. The incidence in the sixth decade is as high as 14%, and increases to 50–80% by age 80. Sakr et al. sectioned prostates in men ages 30–50 who died of trauma and found microscopic evidence of adenocarcinoma or premalignant lesions in 27% and 34% in the fourth and fifth decades.

There is ample evidence in the literature that androgens have a promoting influence in the development and growth of prostate cancer. DHT has a much more potent androgenic effect in the prostate than testosterone (T). Androgen deprivation therapy has been the palliative treatment for hormonally sensitive adenocarcinoma of the prostate. Logic dictates that chemoprevention therapies for premalignant lesions should be to lower exposure to DHT.

High-grade prostatic intraepithelial neoplasia (PIN) is the most likely precursor of prostatic carcinoma. PIN has a high predictive value as a marker for carcinoma, and its identification in biopsy specimens warrants repeat biopsy for concurrent or subsequent carcinoma. The only methods of detection are biopsy and transurethral resection; PIN does not greatly raise the concentration of serum prostate specific antigen (PSA) or its derivatives, does not induce a palpable mass, and cannot be detected by ultrasound. Androgen deprivation decreases the prevalence and extent of PIN, suggesting that this form of treatment might play a role in chemoprevention.

The Cote RJ et al. study concluded that finasteride did not have tumor inhibitory properties, and increased the incidence of prostate cancer in patients with pre-existing PIN lesions. This study has been severely criticized for being underpowered in patient numbers, biased in patient selection, and having prostate cancer diagnosis rates in the controls that were significantly lower than rates reported by other authors with much larger patient numbers.

The Prostate Cancer Prevention Trial (PCPT) sponsored by the National Cancer Institute will study finasteride 5mg/day in more than 18,000 men over age 55 with PSA< 3.0ng ml and normal digital rectal exam. It has been suggested that it would be useful to evaluate the effect of finasteride on pre-malignant lesions, or in younger patients who are genetically at higher risk to develop carcinoma of the prostate.

I initially managed my patients by obtaining PSA levels according to guidelines proposed by the American Urological Association: men over 50 or 40–50 with positive family history, or over 45 in African-Americans. Finasteride (Proscar or Propecia®) will predictably lower PSA by an average of 50% in patients with BPH, and the ratio of free to total PSA is not significantly influenced. Finasteride does not alter the sensitivity or specificity of PSA in the detection of prostatic cancer. (Review article, *J Urol,* 1/96 also the PLESS study Urology 3/99.) Because I am not currently practicing as an urologist, I advise patients to notify their family physician or urologist that they are taking Propecia®. The suggested clinical guideline is the PSA level measured be multiplied by two. (*BMJ* 1997, Aug 9:315[7104]:371.) Hair transplant surgeons need not be monitoring PSA levels, but should be aware of the relationship with finasteride. Finasteride has been shown to be safe and effective, and in the near future its chemopreventive potential will be known.✧

Ergonomics in FUT

continued from front page

The author's staff immediately noticed a significant difference with the use of this table and has overwhelmingly embraced its use.

Ergonomic efforts emphasize dedication and commitment to staff members and may reward the practice with better morale, decreased disability, and improved quantity and quality of work (Table 3).✧

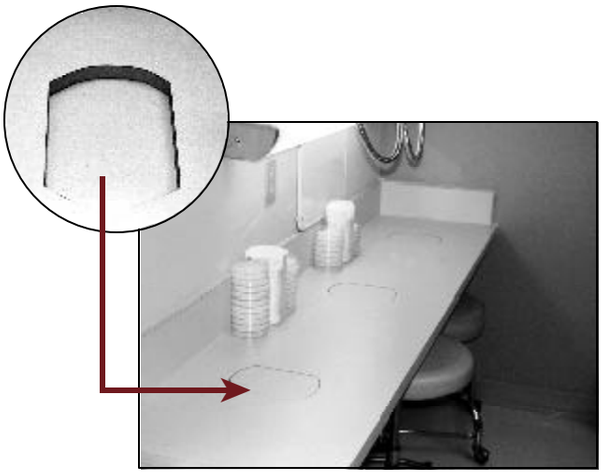


Figure 1. Recessed "cut-outs" match the shape and height of the microscope base.

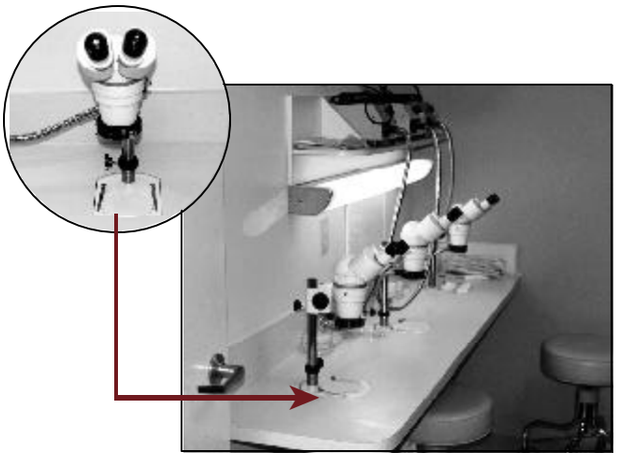


Figure 2. Table with microscopes in place. Cutting surface is flush with the rest of the table.

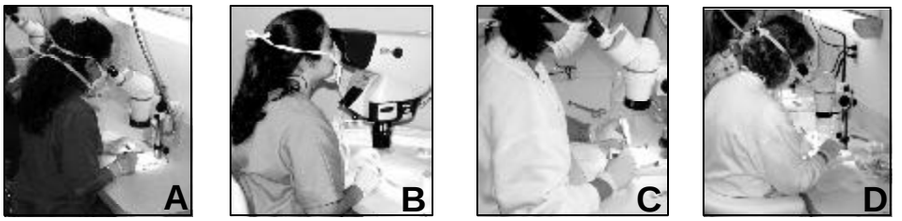


Figure 3. Upper extremity ergonomics during dissection: Wrist in neutral position and arms resting comfortably with new table design (A) and Mantis (B). With a conventional table, wrist is extended (C) and arms are in an awkward position (D).

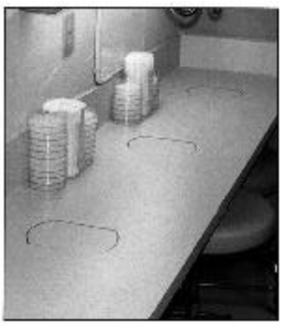


Figure 4. Inserts fill the recessed areas restoring the table to conventional design.

Table 2. Mantis versus Stereoscope

FACTOR		BINOCULAR STEREOSCOPE
Eyepiece	Viewer	Binocular (Accepts Micrometer)
Head Position	Free	Fixed
Eye Fatigue	?	?
Working Distance	19"	14"
Focusing	Variable	Exact
Magnification	6×	7×–40×
Upper Extremity Ergonomics	Flat Working Surface	Wrist Extended during Dissection

Table 3. Possible Rewards of Improved Ergonomics

- ➤ Increased Staff Comfort
- ➤ Decreased Disability
- ➤ Reduced Absenteeism
- ➤ Reduced Employee Turnover
- ➤ Better Morale
- ➤ Increased Productivity
- ➤ Better Quality

Clinical Update: First Impressions of the CapilliCARE® Hair and Scalp Analysis Machine in Early Androgenetic Alopecia

Alan J. Bauman, MD Boca Raton, Florida

The use of scalp magnification in the diagnosis and treatment of androgenetic alopecia (hereditary male and female pattern hair loss) is not new. However, recent advances in the synthesis of a high-magnification digital video microscope (40×–80× magnification) together with powerful software have resulted in a machine that can easily accomplish several important and useful monitoring tasks during a routine patient consultation. Imported by Harmonix, Inc., the non-invasive French machine called CapilliCARE® (capilli=hair *fr.*), could conceivably have dramatic repercussions through much of the medical as well as the non-medical hair restoration industry because of its ability to quickly and quantitatively detect and monitor subtle hair loss–related changes in the scalp.

The CapilliCARE® hair and scalp analysis machine combines digital video magnification of the scalp with powerful software for data capture and archiving.

The machine performs several measurements with regard to hair density and hair-shaft diameter, recording the digital photos and numerical data on its hard drive. Comparisons of different areas of the scalp can help the physician detect hair loss *before* it is obvious to the naked eye. (Studies show that a patient must lose approximately 50% of the hair in a given area of scalp before a patient notices a thinning density.) In men, preventive action, such as the use of Propecia® (finasteride 1mg) or surgical therapy, may be used to reverse the hair loss process. In my experience, men seeking treatment because of a thinning or receding hairline are often unaware of the extent of hair loss that has occurred in the crown. Because the archived measurements and digital photos can be compared with future examinations, the progression of hair loss or response to medication can be demonstrated quantitatively over time. During a consultation, the CapilliCARE® offers a snapshot view of the slowly progressing process that is androgenic alopecia. It can also demonstrate to a patient that a particular treatment plan is effective—even before the results can be seen on global photos.

Much like the intra-oral camera did for dentistry, the CapilliCARE® enables the patient to see *in full color* and *in great detail* exactly what is happening to their scalp and hair on a microscopic level. Patients can now easily visualize their own natural physiologic follicular-units as they exit the scalp in the familiar groupings of one, two, and three hairs. On screen, it becomes quite clear that the areas affected by hair loss show follicular units with fewer hairs than the more permanent "donor" areas, as well as a higher ratio of vellus hair to terminal hair. When patients see these areas containing miniaturizing follicles, they begin to better understand their hair loss process. Benefits to patients include, but are not limited to, early detection of scalp hair loss—before it's noticeable to the naked eye; monitoring of "at-risk" areas prone to hair loss—such as the hairline, temples, and crown; monitoring the responses to (and effectiveness of) medical, non-medical, and surgical treatments over time; as well as a useful aid in surgical planning for follicular unit micrografting procedures.

The video handpiece provides a clear view of naturally occurring follicular units under 40-80x magnification.

Conceivably, patients who might benefit from an examination with the CapilliCARE® are men and women who 1) have a high incidence of hereditary hair loss in their family and would like to detect their own hair loss before it becomes noticeable, 2) those who already know they are experiencing hair loss and are interested in monitoring its progress and perhaps better predict their future, as well as, 3) men and women who would like to measure the effectiveness of their surgical, medical, or non-medical hair loss treatment regimen.

In addition to capilloscopy (magnification of the scalp and hair), densitometry (density measurements), hair growth cycle trichograms, and phototrichograms (measuring hair growth cycle—anagen, catagen, telogen ratios), the machine can also measure scalp sebum production and can even take a detailed hair loss history from the patient and print out a comprehensive, personalized hard-copy report, if desired. For the first time in our offices, we can now perform computer-

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CapilliCARE®

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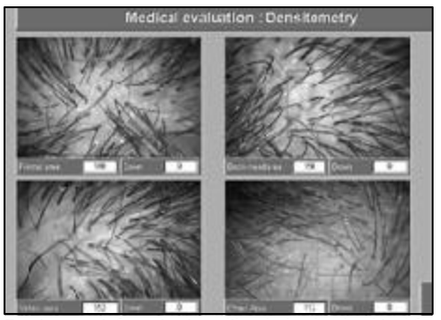
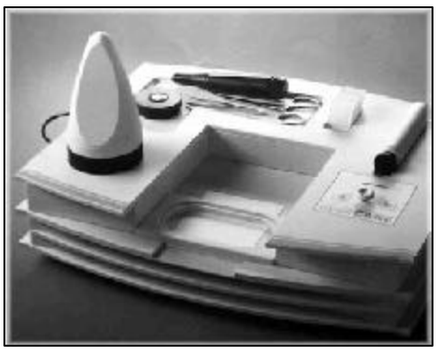
Dr. Bauman and patient during a consultation using the CapilliCARE system.



Densitometry information is readily calculated and archived for future comparisons.



The CapilliCARE® can greatly enhance the communication between physician and patient when it comes to hair loss and treatment options.

analyzed photo-trichograms with relative ease, should the need arise.

As a useful diagnostic tool for the hair restoration surgeon, the CapilliCARE®'s ability to monitor hair densities in different areas of the scalp over time will enable patients and their physicians to see and accurately record the changes in the hair and scalp. As its use spreads, it may potentially cut through the myriad of ineffective "snake-oil" treatments (hair loss shampoos, lotions, and potions) on the market, virtually eliminating any guesswork regarding treatment effectiveness. In my practice, it has already become a useful tool in the individualized diagnosis and treatment for each patient. I am confident that as more surgeons embrace this exciting new technology that even more patient benefits will come to light.✧

Dr. Alan J. Bauman is the Founder and Medical Director of the Bauman Medical Group, P.A. located in Boca Raton, Florida.

Disclosure Statement: Dr. Bauman and Bauman Medical Group, P.A. of Boca Raton, are not financially affiliated with Harmonix, Inc. and have not received financial compensation from Harmonix, Inc.

Commentaries on Bauman CapilliCARE® Article

Richard C. Shiell, MBBS Melbourne, Australia, and John P. Cole, MD Atlanta, Georgia

Richard C. Shiell, MBBS

I have eyed this machine with considerable admiration at several meetings now but, as with the some other advanced technology products of the past, I have difficulty justifying the price or deciding whether the apparent precision of hair counts and shaft diameter are a genuine benefit to the patient. All these parameters can be "eyeballed" with ease by the experienced hair surgeon (although fine degrees of change over some years are not possible without precision instruments).

Certainly the computer-driven CapilliCARE® allows unprecedented precision, but is it necessary to count the fleas on your pet to know whether it needs treatment or to assess how well the past flea-treatment is working? On the other hand, a computer-driven flea counter could certainly have sales benefits and would help convince the indignant owner that little Fido did indeed have a flea infestation and was not just suffering from an allergy to caviar.

So readers if you have the time to play with this wonderful machine, the money to spare, and really enjoy scientific gadgets and gismos then this is the one for you. You will get a tax deduction, have a lot of fun, and who knows, it may even pay for itself with increased sales in time!!

John P. Cole, MD

I firmly believe the primary factor in successful hair restoration surgery is patient selection. Patient selection depends on three criteria: the patient's goals, the patient's understanding of the physician's ability to meet those goals, and the physical characteristics of the patient. Many physicians spend considerable time discussing the patient's goals and the treatment plan. Somehow they arrive at the treatment plan with a cursory examination of the patient. In essence, the physician's attempt to be successful is flawed. He does not take an educated approach to

continued on top of next page

the restoration process. Rather, he makes an educated guess based on a varying degree of experience.

Any hair and scalp analysis machine that allows the physician a means to scientifically approach the care of his patient would augment the management of our patients. Such information, if accurate, reliable, interpretable, and cost effective would be a significant advantage to the practicing physician and the patient. It would help the physician categorize his patient in terms of predicted success and failure. Dr. Bauman has suggested the CapilliCARE® machine may be an example of such technological engineering.

Dr. Bauman has more experience with this machine than my cursory evaluation of it at scientific meetings. Therefore, he is certainly more armed to make a rational argument in favor of this equipment. Nevertheless, because his overall impressions of this expensive equipment might induce other physicians to purchase CapilliCARE®, I feel compelled to respond to several points within his discussion. What does it purport to measure? We are told it quantifies hair density, hair diameter, hair growth cycle, anagen vellus ratios, and scalp sebum production. I have stated in the past that hair density is not accurately measurable through digital imagery and photography.

Because more than one hair often exists in close proximity to one another from the same follicular canal, digital imagery generally results in a falsely decreased density. It is much more accurate and less expensive to measure density with a handheld device costing less than $15. For this machine to measure diameter, we would have the same potential problem of measuring two hairs, as opposed to one, a condition that would result in a falsely elevated hair diameter. Unfortunately, an inexpensive and reliable means of measuring hair diameter is not available. I believe the Starrit digital micrometer, recently promoted by Dr. Mayer, which I first used in 1996, results in a marked potential for inaccuracy. It provides only a rudimentary understanding of hair diameter. As Bernie Cohen points out, there is considerable variation from one hair to another in their hair diameter. Thus, it is absolutely critical that multiple hairs are measured and the mean hair diameter calculated.

From my exposure to CapilliCARE®, this machine does not perform this function. I am disappointed to say that a cost effective and time efficient means of assessing hair diameter is not currently available. How can this machine measure hair growth cycles and give our patient a trichogram? Anagen, catagen, and telogen are terms given to hairs based predominantly on physiological and histological characteristics. In my opinion, from gross examination of the skin alone, it is not possible to characterize a hair as anagen, catagen, or telogen. If a pull test is performed on the scalp, and one or more terminal hairs are extracted, one can say, "These are catagen hairs." Other than through this means, I do not feel it is possible to categorize a hair as defiantly anagen, catagen, or telogen without incising into the scalp or sectioning the tissue with appropriate pathological staining.

I am certainly open to contrary opinions and sound reasoning. It would be very simple to design a software program in your office to categorize the hair growth cycles and print a "trichogram" using Microsoft Excel for a fraction of the cost of CapilliCARE®. Dr. Devroye and I created such a program to measure follicular unit production, the percentage of various size follicular units, and monitor technician efficiency. While we would be happy to sell you this program, you can create your own using Microsoft Excel. Vellus hairs are defined as less than 30 micrometers in diameter. They also have a histological definition, but this is beyond the capacity of CapilliCARE®. Since CapilliCARE® does not efficiently measure diameter, I don't feel this ratio is accurate. There are an abundance of hairs between 30 micrometers and 50 micrometers in diameter. We simply don't have a definition for these more miniaturized hairs. We know they grow as long as other terminal hairs and have a far lower cosmetic impact than hairs 50–100% greater than their diameter. They may represent hairs undergoing the progressive miniaturization of androgenic alopecia, perhaps hairs in a stage of senescence, or a normal variant of terminal hair. I don't know how it measures sebum production, but I would be interested in knowing the average quantity of sebum I produce each day.

Many physicians suggest that studies indicate a patient must lose 50% of their density before hair loss is noticeable. While this is a widely circulated blanket statement I am unaware of a single study that supports this claim. This year in Hawaii, I presented my findings on regional variation in hair shaft diameter. The histological portion of this study is still pending so I will not elaborate on the findings at this time. I will point out that my findings indicate that density has very little to do with the appearance of thinning. Thinning results from a decrease in hair diameter, not hair density. Loss of density is a later finding in hair loss, and is accompanied with the onset of the appearance of "baldness." Therefore, it is incorrect to state that CapilliCARE® will allow the patient to see the decrease in density as an early indication of hair loss. CapilliCARE®'s apparent lower density in early thinning is an indication of its inefficiency in counting hairs. As the diameter decreases, the machine and technician have greater difficulty counting hairs.

Scrutiny extirpates what this machine effectively accomplishes. First, it is a wonderful marketing tool. If you can justify the cost for this marketing tool, I feel it may be of benefit to you. Second, it allows you to archive your photographs. Third, it allows magnified photographs of the donor and recipient areas. Fourth, it shows there is a variation in hair shaft diameter.

In the following sentences, I'm going to explain how you can archive your photographs using simple Microsoft Windows' commands and a current edition of Microsoft Windows. First, right click on the My Computer icon on your desktop. Then click Explore. Now highlight local disk (C:), click on

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THANK YOU MERCK

How far we have come from the early beginnings of our great Society. What many current members do not know is that both Drs. O'Tar Norwood and Dow Stough risked their own personal funds to get this organization established. Due to the educational quality of our meetings, the Society's leadership, the benefits of membership, and the wonderful camaraderie we share, the ISHRS has flourished throughout these past eight years.

For those members throughout the world who did not have the opportunity to attend the Hawaii meeting, our Society received unprecedented and very significant financial support from Merck and Company. It has been made clear to us that early on in the marketing of Propecia® Merck had not realized that our group of physicians was extremely important in providing this medication to those patients who would benefit from it.

Well, Merck has shown that it has been making up for lost time as demonstrated in the following support provided to our Society during the past year:

- ✔ An unrestricted educational grant for this year's Annual Meeting
- ✔ Linking of the *Propecia.com* website to our ISHRS website
- ✔ An unrestricted educational grant for the ISHRS/WHS Live Workshop
- ✔ Contributions to the ISHRS Research Grant Awards
- ✔ Grant to support hair transplant fellowships for the current year
- ✔ Merck has added two full-time Regional Account Specialists, Denise Perry and Christopher Kunigisky, who are dedicated solely to the hair restoration surgeon. They are available to provide support to us in various areas such as establishing direct accounts, assisting with speaking materials, providing business and marketing ideas, etc.
- ✔ Finally, Merck has also added Dr. Karen Lindquist, Health Science Associate. She acts as a physician liaison concerned with existing data on finasteride, answering questions on physiology and mechanisms of action.

With support as seen above, our Society can continue to grow and to provide superlative educational programs to our members that will translate into continued excellent care for our patients.

Thank you Merck!

Robert T. Leonard, Jr., DO, FAACS
Past President, ISHRS
Cranston, Rhode Island

EDITORS' NOTE
The Editors of the *Forum* would like to personally thank Paul Knoflicek and the entire Propecia Division for their educational support of our Society.

Hair Growth Control and Current Research

Marco N. Barusco, MD Sanford, Florida (Illustrations: Patrick A. Tafoya)

In the past few years, the field of Hair Restoration has seen a number of improvements in surgical techniques, coming from the use of large grafts to the use of single-hair follicular units. Likewise, the advances in the field of hair research have been tremendous, and many new discoveries have been made in regards to the hair follicle's physiology and etiology of the different types of hair loss.

Hair growth and hair cycle involve perfect synchronized mechanisms. By understanding these mechanisms, we may find answers for the questions we have and then be able to provide better care and options to our balding patients.

Hair Cycle and Control Mechanisms

It is well known that hair growth occurs in stages. The three main phases are: Anagen (active growth, lasting 2–4 years or longer), Catagen (intermediary phase, lasting 1–2 weeks), and Telogen (resting phase, where there is no hair growth—lasts approximately 3 months). Changes in the duration of these stages may lead to hair loss (Figure 1).

One intriguing question is: What factors control hair growth and how are these factors regulated?

In 1995, Stenn[1] and colleagues proposed that the growth and differentiation of hair involve four different processes and that there are specific mechanisms controlling each one of these processes. The four processes are:

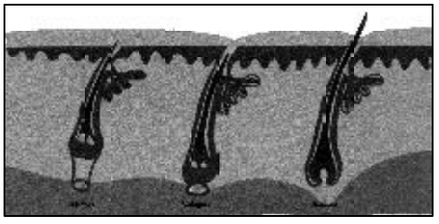

Figure 1. Hair cycle

1. *Heterogeneity of Form:* Hairs have different characteristics in different areas of the body (scalp hair, chest hair, beard, eyebrows…).
2. *Cycling:* Control of hair cycle and the regulation of each phase.
3. *Vellus/Terminal Switch:* Probably androgen-regulated (puberty), it triggers the transformation of vellus hairs to terminal hairs.
4. *Pigmentation:* Changes in pigmentation occur in the same hair follicle during the different stages of the hair cycle—more pigmentation during Anagen and less pigmentation during Telogen—and with age.

Because Androgenetic Alopecia involves the shortening of the Anagen phase and the lengthening of Telogen, this article will focus only on those mechanisms related to the control of the hair cycle.

A synchronized chain of events involving stimulation of mitosis, inhibition of mitosis, and apoptosis controls the hair cycle. The communication and interaction between the various components is done through cell-to-cell signaling mechanisms, which may be stimulatory or inhibitory. The messengers are usually peptides or small proteins that bind to specific receptors. The amount of receptors and messengers available varies according to the phase of the hair cycle. Binding of the receptor to a messenger may trigger either the final event or the release of another messenger (chain reaction).

Two areas within the hair follicle are most important in determining and controlling hair growth: the Dermal Papilla (DP) and the Bulge.

The Dermal Papilla

The DP (Figure 2) consists of a group of fibroblasts held together by an intercellular matrix rich in proteoglycans. Just below the DP, a Basal Membrane is visible. It is the first distinguishable structure of the hair follicle, and it can be seen as early as 80 days into the embryological development. The DP is responsible for dictating hair growth and hair characteristics (the bigger the DP, the thicker and bigger the hair follicle). It is an area where the cells show very high metabolic and mitotic rates, according to the phase of the hair cycle. As the cells multiply, they are pushed upward and this promotes hair growth. These cells become keratinized and flat, and are pushed to the periphery of the hair shaft, forming the cuticle.

Figure 2. Dermal Papilla

During Anagen, the DP undergoes changes such as: increase in size, increase in the concentration of proteoglycans and protease inhibitors in the intercellular matrix, increased mitotic and metabolic activity, increase in vascularity (due to Vascular Endothelial Growth Factor), increase in innervation (due to Neural Growth Factor, increase in the concentration of cytokines such as Fibroblast Growth Factor, Epidermal Growth Factor, Insulin-Like Growth Factor, Keratinocyte Growth Factor,

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Hair Growth

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and Platelet-derived Growh Factor, among others.

The Bulge

The Bulge (Figure 3) corresponds to the area of the hair follicle to which the erector pili muscle attaches, and it is known as a source of stem cells. The Bulge is part of the Outer Root Sheath, which in turn is a continuation of the

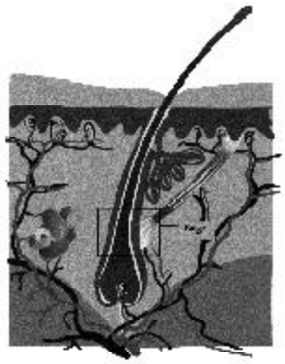

Figure 3. The Bulge

epidermis. During the different phases of the hair cycle, the stem cells at the Bulge respond to signals originating from the DP.

Current Models for Hair Research

Currently, some of the most common models used for hair research are:

1. *Animal Models:* Mice are by far the most commonly used animals for research. Advantages are easy handling, low cost, and the ability to reproduce many human diseases. As for hair research, they have been used for genetic studies. However, mice are not good models for studying Androgenetic Alopecia because they do not express sexual hair dimorphism. For this particular purpose, the ideal animal model is the macaque, but they are obviously much more expensive and more difficult to handle.
2. *Organ Cultures:* Different culture media have been tried for hair follicles and hair growth has been achieved *in vitro,* although for only a short period. Organ cultures require the isolation of the entire hair follicle.
3. *Cell Culture:* It is also necessary to have the ideal culture media and conditions. Hair cells are shown to grow in culture (dermal papilla and bulge cells), but so far it is not possible to control and direct the growth of the cells in order to obtain a full hair follicle.
4. *Genetic Manipulation:* The use of transgenic mice for genetic research has been very successful. Either the gene being studied is suppressed or upregulated, allowing for observation of the changes produced in the animal's phenotype.
5. *Genetic Approach:* Techniques such as hair cloning and gene therapy have been employed to add to the methodologies of hair research and promising results have been obtained.

Where Are We Headed?

With constant commitment from scientists and physicians and the development of new technologies, we will certainly come across many new discoveries. As we expand our knowledge about the hair follicle's genetics, molecular biology, and physiology, we may be able to develop better medications for treatment and/or prevention of hair loss. We may also be able to discover the genes involved in the hair loss process and then inactivate or downregulate them, thus preventing hair loss from starting.

This knowledge will also benefit us as hair restoration surgeons, perhaps allowing us to clone donor hair, prevent the expansion of the bald area, or get better and faster growth for our hair grafts.

Some of the questions that remain to be answered are: What is the gene (or genes) responsible for hair loss? What are the different molecules that control the hair cycle and how do they control themselves? How can we interfere with these mechanisms in order to prolong hair growth and/or stop hair loss?

There is little doubt that these questions will be answered eventually. ✧

REFERENCES

1. Stenn KS, Combates NJ, Eilersten KJ, et al.: Hair Follicle Growth Controls. *Dermatologic Clinics,* Vol. 14, 4; 1996:543-558.
2. Barusco MN: *Looking at the Hair Follicle Under a Molecular Perspective*. ISHRS Annual Meeting lecture; December 2000.
3. Villez RL: *Growth and Loss of Hair.* www.regrowth.com.
4. Holbrook KA, Minami, SI: *Hair Follicle Embryogenesis in the Human.* Annals New York Academy of Science:167-196.
5. Paus R, Peters EMJ, Eichmuller S, Botchkarev VA: Neural Mechanisms of Hair Growth Control. *Journal of Investigative Dermatology Symposium Proceedings.* Vol. 2, 1; August 1997:61-68.

EDITORS' NOTE (D.S. & R.K.)

The Editors appreciate submission of this article by Dr. Marco Barusco. It is important for the *Forum* to provide basic science-related topics on hair growth and physiology. *Forum* readers are referred to an excellent follow-up article, which was recommended by Dr. Marty Sawaya: Oshima H., et al.: Morphogenesis and Renewal of Hair Follicles from Adult Multipotent Stem Cells. *Cell* 2001, Jan. 26; 104(2):233-45.

Marc R. Avram, MD
New York, New York

Dear ISHRS Members,

We are busily planning our next Annual Meeting in Puerto Vallarta in October.

As always, the speakers and the topics to be covered at the meeting will be at the forefront of our field and will be of interest to beginners as well as seasoned hair transplant surgeons.

All of the meetings in the past have been outstanding educational programs. Each year the feedback and suggestions we have gotten from our Society have helped improve each subsequent meeting.

This year, I have carefully reviewed the comments from the past few years and will implement some changes, which I hope will make the meeting an even more enjoyable and educational experience for all.

Some of the topics to be discussed in Mexico will include the current and future medical treatment of hair loss, the search for genes causing hair loss and the prospects for cloning hair, hairline design, laser hair removal and transplantation, automation, staff training, and a comprehensive Beginners Workshop.

In addition to a well-rounded, outstanding mixture of experienced, well-known hair transplant surgeons, there will be some new voices and perspectives from hair surgical and medical hair experts.

The pacific coast of Mexico has fantastic natural beauty, and the hotel where we will be staying is reported to be one of the best in the region.

On a personal note, I have found over the years that personal interactions with my colleagues have been of immense value for both my education and learning as well as enjoyment at the previous ISHRS meetings. I will make sure that there is an equal amount of time for us to sit and listen as well as enjoy ourselves in this stunning environment.

I encourage all who are interested in participating to let me know. I cannot promise to allow everyone to speak or participate, but I am very grateful for all the suggestions that I have received already over the past several weeks.

If you have any ideas or comments, please e-mail me at info@dravram.com.

Warm regards,

Marc R. Avram, MD
Chair, 2001 Annual Scientific Meeting

Photos from www.accessmexico.com

Salute to Carlos J. Puig, DO Surgeon of the Month

Jerry E. Cooley, MD Charlotte, North Carolina USA

Carlos J. Puig, DO
Houston, Texas

Carlos J. Puig, DO, performed his first hair transplant in 1973. Shortly thereafter, in 1975, working with his mentor Dr. Jeff Weitig of Washington, D.C., and Dr. Richard Sandham of Tustin, California, he organized one of the country's first interstate medical practices, the Weitig, Puig, Sandham Medical Group, staffing hair restoration surgery facilities in nine states from Massachusetts to California. Over the years that group evolved into Puig Medical Group, with a cadre of nine physicians working in seven offices throughout the eastern United States. Dr. Puig's goal was to build a large multi-state medical practice that could be managed in a way such that it would not lose its commitment to individualized patient care of the highest quality.

Throughout his career, Dr. Puig has practiced through several hair restoration surgery revolutions. He started performing hair transplant procedures before the introduction of the Bell hand engine, his surgical technique has evolved from hand punch donor harvesting, to power tools, and, now, back to the unassisted scalpel for strip harvesting. First with punch grafting, then incision grafting of various sizes and nomenclatures, and now on to follicular unit transplantation, he has always tried to provide his patients with the latest and most efficient methodology. He has gained experience with scalp lifts and reductions, extenders and expanders, and the prudent use of the Frechet trip flap crown closure. His 27 years of experience has developed a strong sense of surgical prudence, aesthetic sensitivity regarding hairline composition, and scar minimization.

Although direct patient care is most satisfying for Dr. Puig, teaching hair restoration surgery, developing sound health care delivery systems, and scientific studies are also his professional passions. As president of the American Hair Loss Council (AHLC) in 1996, Dr. Puig helped to facilitate the development of the American Board of Hair Restoration Surgery. During his tenure as president, the AHLC brought together representatives from the American Society of Hair Restoration Surgery, the International Society of Hair Restoration Surgery, the World Society of Hair Restoration Surgery, and American Academy of Facial Plastic Surgery to form the American Board of Hair Restoration Surgery (ABHRS). Dr. Puig continues to serve as the Treasurer and Oral Board Coordinator for the ABHRS.

Dr. Puig has always found teaching to be very rewarding. He enjoys lecturing and demonstrating HRS techniques with his professional peers. He has assisted with the development of such programs as the ABHRS Board Review Course, the ISHRS Beginners Course, and the Live Surgery Workshop in Orlando. "One of the most exciting aspects of my career has been watching young physicians' professional and technical growth upon coming into the our specialty. Most important is the satisfaction of realizing that they understand the real meaning and responsibility of the doctor-patient relationship, a part of medical practice I think many areas of medicine have forsaken for the HMO relationship.

"I am very excited about working with Dr. Dow Stough's committee to develop the criteria and curricula for the ISHRS Fellowship Program." Dr. Puig has always had an "Open Door" policy regarding physician visitation and observation in his office.

In March of 2000, Dr. Puig accepted an invitation to join Leavitt Medical Associates and Medical Hair Restoration, an affiliation that has proven very satisfactory. "This affiliation has provided me with an ideal practice environment, allowing me time to contribute to professional committees for the ISHRS, AHLC, and ABHRS, to do hair replacement surgery research studies, and sill provide patients with the personalized care I prefer to provide. Dr. Leavitt and the executive staff of MHR have made the same commitment to quality patient care that has been the focus of my entire professional career. I am very comfortable working with in their organization."

Dr. Puig's personal passions are his wife, Cheri, his family, his missionary involvement, and jazz music. Dr. Puig plays bass, and is currently performing weekly with a jazz trio and a nine-piece jazz orchestra. He is on the Board of Directors of Living Water International and Living Water Medical Ministries, organizations that provide medical care and fresh water wells in the name of Jesus Christ to over a million people a day in 13 third-world countries.

"In my opinion the future is very bright for our profession. Contemporary hair replacement technologies provide consistent, aesthetically pleasing results. The level of personal communication and cooperative development of new technologies within our professional societies is better than ever. Our group, possibly more than any other specialty in medicine, is focused upon working together to bring a higher quality of service and more natural results to our patients, with a minimum of feuds and rivalry. I am excited about being here. I hope that I have contributed to this patient focused atmosphere in some small way, and look forward to continuing to contribute as best I can to our continued professional development. ✧

LIFE Outside of Medicine

Jim A. Harris, MD, and Paul C. Cotterill, MD, will assume the roles of sectional editor for this column of the *Forum.* James Arnold, MD, will continue to contribute as his time allows.

Gerard Seery, MD

Gerard Seery has been a member of the ISHRS since its inception and has practiced hair restoration surgery for 12 years, until recently retiring in Carmichael, California. I contacted Dr. Seery as word was out, through the follicular grapevine, that he was developing a submarine. This did not seem to me to be a natural offshoot from the rigors of hair transplantation and was a novel way of beginning retirement. So I spoke to Gerard to find out what he was up to.

Approximately 18 years ago, Gerard saw a National Geographic TV program on PBS about a man who invented a kind of one-man submersible that maneuvered well at relatively high speeds in deep water. This planted the seed in Gerard's mind that stuck with him for many years. About four years ago, Gerard met Patrick Stafford, an owner of Deep Sea Systems, who described to Gerard that the inventor of the submersible was his close friend and renowned deep-sea engineer, Graham Hawkes. Gerard met with Graham and together with Patrick Stafford and another friend, Brian Power, formed the company Spirit of Adventure, with the goal of constructing a two-man submersible to be designed on the lines of a jet fighter airplane. For Gerard, the company was formed not as a commercial venture but as a hobby.

Gerard's son, Edward, an engineer, joined Graham's team and the Aviator project commenced in late 1998. The

Aviator is designed to operate as deep as 1,500 feet, runs on batteries, and can theoretically stay submerged for 72 hours, although the average dive lasts less than three hours. It will travel at four times the speed of a submarine and maneuvered like an airplane. Wow!

The Aviator has been featured in numerous scientific articles and programs including Dateline Discovery and a PBS documentary, Savage Seas. The year 2000 Smithsonian first prize for the best technological development in the Science and Technology section was awarded to Graham Hawkes for the Aviator, and in 2001 the computer company Autodesk became their sponsor.

Deep-sea trials are scheduled for this fall. Already a documentary about exploring the Bermuda Triangle has been commissioned by The Discovery Channel, and a tentative approach by Mexican authorities to explore wrecks for sunken treasure has been made.

As co-founder of the company constructing the submersible, Gerard is helping to oversee the project's development. Gerard is to be trained as an Aviator pilot and this time next year hopes to be exploring the deep waters of the Gulf of Mexico in search of sunken treasure or cavorting with giant squid.

Gerard may have retired from hair restoration surgery, however, it appears that a new exciting stage of his career is just beginning. I am sure the readers would like to follow his exploits in the years to come.

Best of luck Gerard!✧

Article submitted by Paul Cotterill

The following ISHRS members recently passed the American Board of Hair Restoration Surgery board exam. Congratulations!

Marco N. Barusco, MD • Glenn M. Charles, DO • Noel K. Digby, MD • John D.N. Gillespie, MD • David Perez-Meza, MD • Neil S. Sadick, MD • Ghodratolah Zamani, MD

William M. Parsley, MD
Louisville, Kentucky USA

Please send your comments/questions to:

bparsley@bellsouth.net

HAIR FOLLICLE RESEARCH PROJECTS

Nilofer Farjo, MD
Manchester & London, United Kingdom

Over the past two years we have become involved in several research projects because of our interest in non-medical groups involved in hair sciences. Our natural curiosity about all aspects of hair have led us to seek out scientists to find areas of mutual interest. It was a chance meeting at an Institute of Trichologists seminar with a leader in the field that led to our investigations with collagenase. I feel that we as a group need to understand more about hair biology and increase our understanding of the research currently evolving if we are to advance our own specialty.

There is a lot of information available in the literature on various aspects of hair that may prove to be beneficial to us in our own projects. It has been suggested, for instance, by several different people that we try to diminish the lag phase of hair regrowth following transplantation by incorporating minoxidil into our pre-op treatment or in fact placing our grafts in a minoxidil solution. If, however, you look at the mechanisms occurring on a cellular level, the cytokines involved in the immune response will not be affected by either of these methods so it is unlikely that this will succeed. One of the projects we are involved with currently is looking at minoxidil's effects on growth *in vitro*.

Recently we had our annual meeting of the British Association of Hair Restoration Surgeons. The guest speaker was invited by our sponsors—MSD. Dr. Hugh Rushton, PhD, is a non-medical hair biologist who has spent many years researching various aspects of hair loss. He has many publications to his name including work with Walter Unger and Paul Cotterill. The topic he talked about was medical hair treatments for hair loss. I found his insight into the subject very informative and it was enlightening to see the topic from a different perspective. All of the treatments that he advocates have been extensively researched first hand. Of note, he outlined his own investigations into hair loss in women and the importance of diet. In his estimates, 70% of women have inadequate iron stores and all those with hair loss should have iron therapy. On the topic of finasteride, Dr. Rushton mentioned the DHT levels do not return to normal for three days following finasteride therapy, so, in fact, every third day dosing would be appropriate; however, compliance with such a regime would be a problem so daily dosing is the preferred method.

For researchers, hair is fascinating because it is a structure that goes through a series of programmed regeneration mimicking embryonic development. This has led to the use of hair follicles as a model for many different projects.

This brings up an interesting subject. Are there good studies to show that hair loss in women has been caused by iron deficiency and can be corrected by iron replacement? Some physicians have been disappointed in the results from iron replacement. Please respond if you have any information. WMP

HAIRPIECES

Michael Beehner, MD
Saratoga Springs, New York

It seems that somewhere long ago and a time forgotten I heard someone state with some authority that a patient's wearing a hairpiece did not interfere with the hair's growth or the success of the transplants that are growing underneath it for the 10–18 months or whatever that it takes before the patient is brave enough to take it off. In the past couple of years, I have had two patients in particular in whom I was struck by the fact that I wasn't seeing the usual good percentage of growth of the grafts placed as I saw in my non-hairpiece wearing patients with similar hair loss situations. Both had terrible hair characteristics; they had slightly hyperelastic, "oily" appearing scalps. One had dark black, thin hair and the other had a deep golden-brown coloration. I always have these men switch to a clip-type attachment method, and of course always seem to note that in the areas where the clips attach, there seems to be a steady attrition and loss of little coin-shaped areas of hair there, which often are permanent. So these two cases

and a few others I recall over the past few years leave me wondering if there may in fact be some adverse affect on growth by the hairpiece. Logic tells me that the "growing" and giving birth to a hair growing in a new site all occurs under the epidermis, safely away from the hairpiece. It is hard to imagine that loss of air or light, or possibly increased perspiration, could play any role. The only imaginable physical factor I can think of is the tension on the scalp that may occur from the clips being in place. Also, as the patient's real hair grows, it may be subject to any "shuffling" movement of the hairpiece, which could cause a friction shearing of the hair at the surface—again, a phenomenon that does not affect the hair's ability to eventually grow out when free of this friction. The last factor that seems to always be present in these patients is that, when they remove their hairpieces, the hair underneath is horribly matted and compressed and looks awful on that basis alone. Despite this, I definitely felt growth was reduced in these two and possibly in a few others.

So my question to the *Forum* is: Has anyone else been impressed with less-than-expected growth in some of their patients wearing hairpieces?

I posed this question to a few physicians and below are the replies that were received. This column would like to hear any other thoughts on this subject. WMP

Richard Shiell, MBBS
Melbourne, Australia

I did not see many hairpiece wearers in my early practice but, following the instruction in papers by Orentreich, Stough, and Sam Ayres, I used to recommend that patients could resume wearing of hairpieces soon after HT surgery. This was repeated in Norwood's first textbook and again in the second edition to which I was co-author. Walter Unger warned of potential problems with hairpieces in all three editions of his textbooks.

Somewhere along the line some more of us had second thoughts about this and I recall some comments in the *Forum* about the adverse effects of hairpiece wearing. I think someone had a show of hands at one ISHRS meeting on the subject where the majority thought that there was an adverse effect. Anyway, Dow's 1996 textbook certainly states on page 315 that many surgeons had noticed an increased rate of infection and poor growth following hairpiece wearing after surgery.

Interestingly, I checked the much-maligned (or totally ignored) Vallis textbook of 1982. He states on page 292 that, although he had previously recommended that hairpiece wearing could be resumed quickly, he had seen a couple of cases of extremely bad growth and henceforth recommended that hairpiece wearing be discontinued after the 2nd operation (presumably 3–4 months after the first operation).

My own experiences have been mixed. Back in the mid-80s plug days I saw some cases with excellent growth after hairpiece wearing and some perplexingly poor results where the first session grew well but second and third sessions did very poorly. After that I was more wary about hairpieces as I could see no other cause of the poor growth (it was NOT X-factor as the first session was excellent).

My attitude for the past 15 years has been to warn patients about the possible adverse effect of hairpieces and get them to remove the piece as soon as possible after returning from work each day. They should leave it off as much as possible on weekends.

I have no idea what the cause of the problem might be as the poor growth is not confined to tape sites and is not consistently related to infection either.

Carlos Puig, DO
Houston, Texas

I think the hairpiece friction breaks off the hair growing at the surface and creates the illusion of poor growth. My experience has been that once I get the patients out of the Unit they do fine.

John Cole, MD
Atlanta, Georgia

I have a number of patients who have worn hairpieces post-operatively. Sometimes they do exceptionally well with no apparent affect to hair growth. At other times there is a significant decrease in hair growth. I've seen the poor growth in areas other than the frontal hairline, where the tape is often applied. There is usually no tape, glue, or other adhesive substance in the midsection or top, but I have seen poor growth here. Poor growth can also occur in the crown as well as the front and top.

Bob Limmer, MD
San Antonio, Texas

Five to ten years ago, I saw four cases of hair transplantation in which the patients were allowed to wear their systems immediately post-op and definitely did not get the usual and expected regrowth. My feeling is that motion on the small exposed part of the shaft left in the graft may have something to do with revascularization, but this is a pure guess. (There was no infection in any of these cases.) I have another patient who wore his "hard hat" plastic hair system immediately post-op, which literally kept his head drenched with perspiration and he grew beautifully through multiple sessions as well as healing very rapidly due to the occlusion. I have many patients who have been allowed to resume their hair systems 7 days post-op and I have seen no decreased growth in these cases. That is now our policy (OK to resume system 7 days post-op).

Brad Wolf, MD
Cincinnati, Ohio

I've definitely seen decreased growth of grafts after hairpiece application. Having worked out of hairpiece offices for four years ('90-'94), I noticed this decreased growth and now tell patients there is a linear inverse relationship between the amount of time the hairpiece is worn after surgery and the rate of "take" and maturation of the grafts. They must convert to clips from a

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Cyberspace Chat

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"permanent" attachment system to be able to take it off frequently; every night after work and on weekends. As a corollary, patients who stop wearing their hairpieces see an increase in density from any non-transplanted miniaturized hair that remains. "After" pictures of hairpiece wearers, who stop wearing the hairpiece, look great because the transplanted as well as stunted indigenous hair comes in at the same time. The hairpiece seems to stunt the growth of indigenous, genetically programmed-to-miniaturize hair as well as transplanted hair. Why? I'm guessing the warm, dark, moist, oily environment plus unnatural mechanical forces all play a part. For a plant to grow, assuming it's planted correctly, it must have the correct amount of soil, moisture, and sunlight.

Walter Unger, MD
Toronto, Canada

I had one patient many years ago who grew very little hair—a lawyer no less! There was no history of frank infection but I wondered if mild chronic infection secondary to warmth and moisture under the hairpiece might have occurred. Since then I tell patients: 1) no hairpiece for one week; 2) daytime hairpiece for the second week (though as little as possible); and 3) thereafter, as much as they want. I have had no problems with hairpiece patients since this policy was adopted so I have recommended it since 1973 and in each of the last two editions of my text.

Marcelo Pitchon, MD
Belo Horizonte, Brazil

I have seen no poor growth in patients wearing hairpieces. I ask them to totally interrupt the use of it for 7 days after the procedure. For the next 7 days they are asked to use it only at social events, if needed. After 15 days they can use it normally again, unless it is the type of hairpiece that sticks to the skin. In that case they will not wear it at all for at least a month.

Jim Arnold, MD
San Jose, California

Only once did I suspect a hairpiece of diminishing hair survival. This particular patient had his piece snugly applied by his professional hairpiece seller/applier 12 hours post-op and the piece was kept on for about two weeks with little, if any, hygienic care. In the words of my nurse who remembers seeing the patient when he returned after two weeks, "It was gross!"

Many, many other patients used hairpieces post-op with little effect that a clinician could detect. We tried to guide these patients in the following way. First, use an attachment system that will allow the patient to remove and replace the hairpiece at will. The simplest way is with "clips." The clips are sewn on the inside of the piece (I had a nurse do it). The clips hold the piece in place by snapping closed onto natural, existing hair. The clips "snap open" to release their grip whenever the patient wishes to remove his piece. Second, wear the piece only when truly necessary—i.e., for work, social events, etc, but not while watching TV or sleeping. Third, use the usual routine of keeping the scalp and hairpiece clean (they can gently wash the latter). A thin application of antibiotic ointment under the piece seemed to help.

As you know, a difficult transition for patients is switching from their reliance on a hairpiece to their new, less than fully grown out hair transplant. Here is a method we found useful for many patients: Hairpieces usually have too much hair; therefore, progressively thin the piece over several months' time. Thinning the hairpiece lessens the contrast between wearing and not wearing the piece. Next, they schedule a two-week vacation, preferably in a sunny clime. Of greatest importance, leave the hairpiece behind. Grow some facial hair if they have none, or, shave something off if they do. Work on a tan, buff up, and try to loose a little weight.

The two weeks among strangers will help the patient adjust to going out "naked." Upon their return, the tan and the change in facial hair will help distract from the real change (no hair piece). The tan and the change in facial hair also provides an easy response to the worrisome question, "You look different!" The patient can deflect the question with "my tan," "shaved off (or grew) my beard," "lost some weight," etc.

David Seager, MD
Toronto, Canada

So far as hairpieces are concerned, I generally discourage them as much as possible. I usually tell patients not to wear them for the first few days, but I have had many patients who have used them 48 hours later. I then ask the patient to wear their hairpieces as briefly as possible every day, i.e., work and essential social activities only. I insist they remove their hairpieces at night. My opinions are not based on science, but as an impression.

Some of the few cases I have seen that grew much less than the expected growth have been in hairpiece users. These cases have been extremely few and the majority of hairpiece users do well anyway. My original teacher, Dr. Pierre Bedard, told me that he did a case of identical twins that had very similar hair loss. Using the old plug method, he did the same number of plugs in the same pattern on each twin. One of the twins continued to wear his hairpiece and the other abandoned it completely. Dr. Bedard observed that the one who continued to use the hairpiece got obviously less growth than the twin who quit using his hairpiece immediately after the first hair transplant session. Unfortunately, none of us know the real answer. I only have anecdotes to go on but I do believe it is better for some individuals to wear their hairpieces less rather than more.✧

ISHRS/WHS Live Surgery Workshop February 21–24, 2001

E. Antonio Mangubat, MD, and William M. Parsley, MD

E. Antonio Mangubat, MD
Seattle, Washington

William M. Parsley, MD
Louisville, Kentucky

The essence of our specialty was cultivated, nurtured, and proliferated at the ISHRS/WHS Annual Live Surgery Workshop held at Universal Studios in Orlando, Florida, February 21–24, 2001. Drs. Matt Leavitt, David Perez-Meza, Marco Barusco, and Ms. Valerie Montalbano should be congratulated for organizing and efficiently executing such an all-embracing meeting that included something for everybody, including an extensive beginners workshop, 22 live surgical procedures, and extensive open and lively discussions on an expansive menu of topics. Veteran surgeons and beginners enjoyed intense and intimate exchanges in the hallways, buses, and dinner tables debating cutting-edge ideas. Veteran surgeons generously dispensed practical advice for getting started in the field of hair restoration surgery (HRS). The live surgery was performed in an open forum. There was no way to hide weaknesses in technique. Our hosts treated us well, wining and dining us every night to excellent food, entertainment, and fellowship. Many newcomers came as strangers and left having made new friends, accumulated a vast amount of

knowledge, and with the intent of joining the ISHRS in Mexico.

Many attendees were beginners and expressed high satisfaction with content and the excellent presentations. One excited participant called the workshop an incredible "smorgasbord" of information allowing them to pick and choose what they feel will work for them.

There were several scientific studies undertaken at this workshop looking to answer HRS questions and add to the existing body of knowledge of our specialty. Although difficult to perform amidst the hustle and bustle of a live surgery workshop, this was an ideal opportunity to gather the world's experts on HRS in one place at one time to interact and synergistically contribute to this scientific effort. The studies performed at this workshop were:

1. Evaluation of epinephrine effects on hair graft yield and shock of existing hairs
2. Evaluation of hair graft angulation in naturalness and changes in the original angle of insertion during the healing process
3. Study the effects of storage time on hair growth and hair survival
4. Measure the impact of 9 different stresses on follicular unit grafts and to determine if graft cooling increases graft survival
5. Measure the impact of graft density on hair survival
6. Measure the survival of chubby grafts versus skinny grafts

We look forward to the next ISHRS Annual Meeting in Mexico to see the results.

Dr. Parsley's Beginners Workshop was packed with physicians and assistants and served as an excellent follow-up to the superb workshop chaired with Dr. John Cole in Hawaii. (Unfortunately, a family illness prevented Dr. Cole from attending. His absence was felt.) The major contribution in this workshop was the hands-on interactions allowed during the live surgery. Many times I observed the numerous workshop assistants (Gigi Volpe, Bev Pfiffer, Mary Ulz, Patrick Tafoya, Larry Leonard, Kailyne Manning, Brenda Barry, Mary Ann Parsley, Cynthia Ramos, Marina Diaz, and hopefully we did not forget anybody) take several beginning physicians and assistants by the hand allowing them to place their first grafts. Even the workshop patients expressed pride and satisfaction and were grateful for their roles during the surgery: "Not only do I get free hair, I also get to help train new doctors."

Day 1

The entire spectrum of critical information was covered for the beginners. Dr. Carlos Puig began the Nurses and Assistants Workshop, moderated by Ron Kirk, by stressing patient safety and outlined the critical components of

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emergency preparedness. He emphasized the need for *all clinical staff* that deals with direct patient care to have CPR certification and physicians should have ACLS certification. He went on to describe the concept of an emergency response team and detailed its function in a crisis situation. Dr. Arthur Katona spoke on anesthetic technique, safety, and treatment of anesthetic emergencies. Dr. Perez-Meza presented a strong argument for the use of combination grafts of varying size to maximize results. He also stressed the importance of maintaining good graft hydration to avoid follicular death. Mary Uzl, MHR assistant, defined the key role of the HRS assistant in a successful HT. Larry Leonhard discussed the hair transplant setup, use of magnification in graft dissection, and the many variations in graft placement. Gigi Volpe presented her personal experience using automated graft cutting and Ron Kirk finished with his experience in coordinating a large staff of assistants.

The Beginners Program was packed. The doctor participants and their assistants were treated to a whirlwind of essential basic information starting with the etiology of hair loss, patient consultation, medical therapy, marketing, instrumentation, hairline design, technique, complications, and ethics. This program deservedly received high marks and live surgery immediately followed with three volunteer patients undergoing procedures simultaneously, demonstrating the various surgical techniques just discussed in an open atmosphere with everything in plain view. At the same time, the epinephrine study was performed.

Day 2

Day 2 brought the various different techniques in sharper focus. Dr. Patrick Frechet affirmed "many roads lead to Rome" and, indeed, the many diverse methods of HRS techniques were presented in detail including follicular unit transplantations, combination grafts, multi-bladed knife donor harvest and recipient preparation, automated graft cutter, hairline design, graft placement using "stick and place," the hair implanter pen, and Dr. Kim's new KNU hair implanter.

Dr. Russell Knudsen moderated the morning session and described the history of donor site harvest including the old hand punch, power punch, multi-bladed knife, and finally the single-strip harvest, which he feels is the simplest and most widely used technique today. Although the detrimental effects of follicular transection are controversial, he feels that single strip-harvesting produces the least transection. He was asked to discuss the "new non-invasive" technique rumored to emanate from Australia. Dr. Knudsen was not aware of any publications other than media advertising that clearly describes the technique. He has had the opportunity to observe a few patients treated with this method and in his opinion it did not appear too much different from taking numerous 1mm punch grafts and placing them as mini- and micrografts. The originator of this technique is not a member of ISHRS but we would welcome him to our meeting to present his technique.

Dr. Tony Mangubat made a strong case for the use of multi-bladed knife harvest. It is highly technique-dependent, however, once mastered, provides rapid graft production, especially if automated graft cutting is used, increasing efficiency by well over 100%. Critical elements in obtaining that perfect strip include: intense donor tumescence, keeping the knife perpendicular to the skin and parallel to the follicles, and constant vigilance of changing hair angle.

Dr. Matt Leavitt deified the occipital scalp declaring, "The donor tissue

is GOD!" stressing the critical importance of donor preservation through minimum tension, minimum scars, and maximum yield. He also agreed that in skilled hands, the multi-bladed knife yields excellent results but cautioned that it is a difficult skill to learn. He feels that single-strip harvesting is simplest and that dissection under magnification gives the best control. Donor closure is also critical to saving follicles by minimizing scar and being careful to avoid damaging Inaba's bulge, which contains the secondary germinal center.

Dr. Sharon Keene demonstrated a new device, which she termed the multi-recipient site scalpel. It consists of a reusable handle, which can hold up to 10 blades. With each thrust of the knife, multiple recipient sites can be created. This provides for more uniform graft distribution, uniform graft depth, more speed, and less repetitive stress injury.

Drs. Sandoval and Frechet shared their thoughts on maximizing donor yield while minimizing scar. Dr. Lusicic presented a unique technique of transplanting a limited number of extra grafts in the donor incision to aid in scar camouflage.

Presentations on graft preparation also demonstrated the vast diversity of technique. Dr. Blugerman not only extolled the virtues of using the Mantis microscope but also gave us a lesson in controlling our business destiny and how to achieve growth. Dr. Mangubat continued his discussion of rapid graft production by presenting a video of the use of large impulsive forces and a graft cutter to create large numbers of grafts in seconds. He also described a new cutter design that will allow backlight-

ing of the donor strip. Dr. Paul Rose discussed backlighting and how it can help reduce transection. Dr. Keene experimented with multiple different dyes that she used to try and stain the gray donor hair, which is difficult to see and dissect. Lastly, Dr. Nilofer Bessam introduced us to a new experimental technique of using collagenase on donor tissue to "dissolve" the donor into single-hair grafts.

The afternoon session of day two was devoted to the recipient site. Dr. Avram described the key elements in donor site preparation. Dr. Charles demonstrated the two-person "buddy technique" to place micrografts. Dr. Puig presented data showing the efficacy of the hair implanter pen (HIP) in beginners and experienced assistants. Interestingly, the HIP had a positive effect on beginner training but did not improve the efficiency of experienced assistants. Dr. Jung-Chul Kim introduced the new KNU implanter, which simultaneously creates recipient sites and plants a graft into it. Dr. Marco Barusco demonstrated how he uses the "stick and place" method for refining a hair transplant after all sites were made. Dr. Arthur Tykocinski demonstrated his unique Brazilian style of HRS. Dr. Mike Beehner showed a unique technique to use minimum depth incisions by first tumescing the recipient site, increasing its thickness and protecting the underlying vasculature, thus decreasing bleeding and allowing better dense packing. Lastly, Dr. Bill Parsley commented on the three naturally occurring frontal hairline "mounds," which, when re-created, produce more natural looking results. Additionally, he discussed the use of "clusters" along the frontal hairline to soften the appearance and help blend it to the forehead, showing both natural and created clusters. Dr. Frechet defined his microstrip-grafting technique, which

allows the surgeon to move a large number of hairs quickly and get natural results. Interestingly, Dr. Frechet freely admits to having large numbers of follicular transections yet his results shown are excellent. We ended the morning lectures with a lively discussion of hairline design moderated by Dr. Dow Stough.

The afternoon live surgery sessions demonstrated all the techniques discussed in the lectures.

Days 3 and 4

Day 3 started with a review of the surgical cases to be done later in the morning. It was moderated by Dr. Craig Ziering and was well organized. Drs. Mayer, Kim, Perez-Meza, and Pathomvanich discussed the special considerations for treating African-American, Oriental, Hispanic, and Asian patients, respectively. Dr. Mayer recommended against the use of larger grafts in blacks because of the frequent halo hypopigmentation. He felt that the 1.5mm minigraft was the workhorse for transplanting Afro-Americans. Dr. Jung-Chul Kim cautioned those transplanting Orientals because the density of hair is only half that in Caucasians. Dr. David Perez-Meza stated that, because of greater contrast between hair and skin color, Hispanics should be transplanted with grafts no larger than 2.0mm and that the frontal hairline should be done with follicular units in the feather zone, using only 1-2 hair grafts. Dr. Damkerng Pathomvanich pointed out that the follicles are longer in Asians than in Caucasians (5.5mm versus 4.5mm) and that minimal depth incisions may not go deep enough. Drs. Kim and Pathomvanich each pointed out that Asians keloid more easily than Caucasians, so meticulous care of the tissue is important. Later in the operating room, Dr. Kim demonstrated his new KNU (stands for Kyungpook National University) implanter. It worked quickly and flawlessly. The hair needs to be left a little longer, however, so it can be threaded into the apparatus. Several units were necessary to keep the operation going smoothly. Dr. Pathomvanich demonstrated his technique for removing the donor strip. It takes meticulous care and about 20-30 minutes to remove the strip but transections are almost nonexistent. Several veteran transplanters were excited about going home and trying these new ideas.

Drs. Beehner and Gandelman discussed mustache/beard and eyebrow transplants. Dr. Beehner reported on one case of harvesting chest hair and three cases of using beard hair for transplanting to the scalp. He does not recommend using chest hair but had a good experience using beard hair. Dr. Gandelman discussed the eyebrow pattern and suggested that about 140 hairs make a good eyebrow. Drs. Avram and Cotterill discussed female hair loss and surgical correction. Dr. Cotterill pointed out that the female hairline is often corrected with no fronto-temporal triangle, generally a no-no for correcting male pattern hair loss. Dr. Avram emphasized the use of 1-4 hair grafts, concentrating on the first 4-5 centimeters behind the fronto-temporal hairline.

The Scientific Hair Loss Session was in the afternoon. It was moderated by Dr. Marty Sawaya and was full of useful information. Dr. Sawaya recommended www.womenshairinstitute.com, a new Website, as an excellent informational source for hair loss in women. It is sponsored by Pharmacia Consumer Healthcare and has won some awards. Through this institute there is training for hair stylists to become more informed about thinning hair in women. A comb-type device, called a Thin Track System has been developed to help the stylist measure and follow thinning hair in women. Dr. Kaufman presented some of the new five-year data on

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finasteride. It is looking better and better as more studies come in. Side effects such as impotence and low ejaculate volume are almost negligibly different from controls. Sexual side effects were 0.6% compared to 0.3% using the placebo. 65% of patients on Propecia at the five-year mark were reported to have more hair than when the drug was started. Even the 35% of patients with less hair still had 150 more hairs/sq. inch than the controls. He emphasized early treatment as there appears to be a critical point during miniaturization of a hair beyond which it cannot be restored. Dr. Kim discussed microarray chips, capable of studying thousands of genes in a single hybridization assay. He has produced a 3 K Trichogene chip using dermal papillae cell cDNA allowing a focus on a specific cell type to analyze gene expression profiles. (Address follow-up questions to Dr. Kim.) Dr. Jerry Shapiro talked about scarring alopecia. He stated that patterned scarring alopecia can mimic AGA and then gave a classification of scarring alopecia as related to hair transplantation. He emphasized that transplanting into some scarring alopecias can actually worsen the condition in addition to losing all the transplanted hair. In addition to clinical exam, two biopsies (one cut vertically and one cut horizontally) are helpful.

Dr. Jerry Cooley discussed the different hair growth cycle patterns that can occur with transplanted hair. He divided them into five categories: Type I—anagen continuous (continues to grow uninterrupted); Type II—anagen interrupted (hair shed but reappears at 2-4 weeks); Type III—telogen delay (most common; sheds and reappears at about 3 months); Type IV—follicle trauma (can grow much latter than average); Type V—follicle death (no growth). Dr. Maria Hordinsky discussed nerves and painful itchy scalp. She stated that pain and itch sensation begins with the activation of a network of free unmyelinated nerve endings at the dermal-epidermal junction. The presence of Substance P globules in the vasulature surrounding the hair follicle appear to play an important role in these cases. Dr. George Cotsarellis gave an update on work with hair follicle stem cells to close out the day. He states there is evidence that the bulge cells not only provide cells for the follicle to regenerate but also for regeneration of the epidermis and sebaceous glands.

Day 4, the last day, started with a discussion of what is new in hair transplantation. Dr. Dow Stough started with some tips on improving efficacy and efficiency in the office. This was followed by Dr. Ivan Cohen who discussed transplanting the young and the old patients. He stated that, if done cautiously, these patients could have a successful outcome even though they are often rejected by many transplant surgeons. Dr. Craig Ziering then gave some good tips on how to find and train staff members. Dr. Yves Georges Crassas discussed automation and felt that it is still very helpful and time efficient. He likes to mix types of grafts but did point out that automation cannot be used well with the follicular unit grafts. Dr. Jean Devroye presented a computer program to analyze in real time the results of slivering and cutting. This type program would help evaluate different techniques by cutting down the variables of strip cutting, tumescent influence, etc. Dr. Marcelo Gandelman then presented his light and electron microscope studies on different types of trauma to the grafts including mechanical abuse and drying. These showed that drying is overwhelmingly the most damaging abuse to the graft—three minutes of drying on the glove can cause major damage. Dr. Jung-Chul Kim's studies indicated that for the first six hours there is no advantage to chilling the grafts. He also presented studies indicating that hydrogen peroxide in a concentration of 1.5% or less is not damaging when used to clean the scalp- in fact, it has been shown to stimulate angiogenesis. Dr. Melvin Mayer presented a study on hair follicle transection which showed that 1) transection at any level delays growth and 2) transection at any level decreases production. He feels that surgeons should be cautious about transecting hairs to soften the hairline at this time because growth, diameter, and curl could not be predictably controlled. Dr. David Perez-Meza followed this with a slick presentation on the healing process for grafts, describing the growth factors and vascularization required. Dr. Matt Leavitt concluded this segment with a description of the scalp anatomy.

The last lecture group of the meeting dealt with special considerations in transplanting. Dr. Mike Beehner presented his well-known work with frontal forelocks. He feels that the most significant development in this technique has been the use of "scatter" or "blur" zones to give a loose connection to the patient's existing hairline, particularly in the posteior-parietal triangle zones. Dr. Shelly Friedman then gave a humorous but informative talk on hairpieces and transplanting temples, including the sideburn. A combination of frontal grafts with a midscalp or vertex hairpiece can work quite well. He also stressed the importance of Board Certification and went through the criteria required. Dr. Neil Sadick presented donor site creation results using a new hybrid—Er:YAG and low energy CO_2 laser. The CO_2 laser addition improved hemostasis without increasing later thermal damage,

resulting in higher hair yield. Dr. Patrick Frechet showed his scalp reduction results using his Frechet extender. The results were quite remarkable. He then followed with a talk on correcting

the slot formation that can result from scalp reductions.

The group then moved to the operating rooms to see corrective work performed by Drs. Leavitt, Barusco, Jaffe, and Leonard. Drs. Sadick and Ziering demonstrated the new hybrid laser mentioned above. Drs. Friedman, Cohen, Koher, and Kurgis demonstrated the technique using a Hair System. There were two studies on the last day. First Dr. Rose lead a study of three levels of "chubbiness" for grafts placed in a 1cm square. Three squares each containing 15 single-hair grafts were created to later determine the effect of chubbiness on survival. Second, Dr. Mayer headed a study of hair survival at varying site densities. Densities of 10-40 sites/sq. cm. were used. Hair counts will be done at 3, 6, 9, and 12 months. The surgical portion was concluded with a demonstration of laser hair removal by Dr. Ricardo Meija.

Summary

The 7th Annual ISHRS/WHS Live Surgery Workshop carries on the tradition of excellence, completeness, openness, sharing, and fellowship. Both participants and faculty were physically and mentally exhausted at the conclusion of this intense four-day meeting, but we all left taking something new with us. The dinners provided to us every night (with the kind assistance of our corporate sponsors Merck, Pharmacia Consumer Healthcare, Procyte, Canfield Scientific, A-Z, Dornier, Ellis, General Medical, Laserscope, and Milestone) nurtured interaction between participants and faculty and increased the bond amongst us. Paul Knoflicek of Merck brought an interesting statistic during the awards, stating that only 3% of all hair loss sufferers seek treatment! That is a hugely underserved population that leaves a lot of room for cooperation and synergism amongst doctors, patients and corporate America in treating these patients in need. ✧

2000 Manfred Lucas and Follicle Awards

John P. Cole, MD Atlanta, Georgia

The International Society of Hair Restoration Surgery presented three deserving individuals its highest honors: the Golden Follicle, the Platinum Follicle, and the Manfred Lucas awards. The criteria of these awards are as follows: The **Golden Follicle** is given for outstanding and significant clinical contributions related to hair restoration surgery. The criteria for the golden follicle include: 1) The recipient must have been the principle person involved in clinical research or in developing innovations or made a significant contribution furthering the advancement of hair restoration and; 2) the work of the recipient must have resulted in demonstrated improved patient outcomes. The **Platinum Follicle** is awarded for outstanding achievement in basic scientific or clinically related research in hair pathophysiology or anatomy as it relates to hair restoration. The recipient must have been the principle investigator involved in basic scientific or clinically related research related to hair restoration; and the results of the research must represent significant advancement the science of hair restoration. In both awards, the recipient may not have been awarded the Golden or Platinum Follicle Award within the previous five years. (Exceptions may be made in the event of extraordinary circumstances regarding new work conducted by the nominee.) The recipient of each award will preferably be a member of the ISHRS, however, a non-member whose work has been significant may be considered.

Previous winners of each award include the following:

Manfred Lucas Awardees:
Richard Shiell, MBBS, O'Tar Norwood, MD, Norman Orentreich, MD

Golden Follicle Awardees:
Dow Stough, MD, O'Tar Norwood, MD, Richard Shiell, MBBS, James Arnold, MD, Walter Unger, MD, Patrick Frechet, MD

Platinum Follicle Awardees:
Michael Beehner, MD, Marcelo Gandelman, MD, Rolf Nordström, MD, Bobby Limmer, MD, Masumi Inaba, MD, Jung Chul Kim, MD

Sheldon S. Kabaker, MD
Oakland, California

This year's **Manfred Lucas Award** recipient, Sheldon Kabaker, MD, can be thought of as the gentle giant. He is imposing in stature, education, and surgical skill, yet soft-spoken, congenial, sublime, and caring. He epitomizes the spiritual vision of our Society. By challenging us to seek higher levels of perception and a loftier level of thinking, Dr. Kabaker promotes our spiritual development. In keeping with these fundamentals, Dr. Kabaker trains a growing student body of physicians in his fellowship program. Many of these individuals, such as Jeffery Epstein, have gone on to augment the roots of our system and collectively have become important contributors mentally, physically, socially and spiritually. He has practiced facial plastic surgery and hair restoration surgery in Oakland, California since 1971. He is Associate Clinical Professor at the University of California, San Francisco. In addition to hair restoration, his practice extends into the vast array of facial plastic surgery. He was a founding member of the Board of Governors of the ISHRS and continues to serve on the Past President's Committee. He has served on the board of directors of the ISHRS and was president in 1999. Dr. Kabaker annually supports multiple meetings around the world. He often demonstrates his surgical art at meetings in an attempt to pass his knowledge and skills to others. He is one of the few surgeons possessing the proficiency required to perform flap surgery. Indeed, he has one of the chronologically longest and most extensive backgrounds in flap surgery and tissue expansion of the scalp. Dr. Kabaker is one of but a handful of physicians capable of offering his patients expertise in both flap and grafting techniques. Dr. Kabaker has helped reverse complications of aggressive procedures beyond the scope of other surgeons, while maintaining the ethical standards, characteristic of the medical profession. His professional approach has earned the sincere thanks from those physicians. Dr. Kabaker's wife, Marsha, frequently travels with him to "hair meetings." She summarized Sheldon's commitment to the scientific advancement of medicine. The couple was once held up at gunpoint outside their home in San Francisco. Sheldon obligingly relinquished his material possessions, but begged relentlessly that the thief spare his briefcase, which contained medical research. Sheldon is a bright star, which has guided the development of many physicians and our Society. We are most fortunate this man, who mirrors the essence of Manfred Lucas, has touched our field and our Society.


Russell Knudsen, MBBS
Sydney, Australia

While last year's **Golden Follicle Award** was marked by perhaps its most eloquent acceptance speech, this year's award featured the most spectacular acceptance attire. The Golden Follicle was presented to Russell Knudsen, MBBS, who swaggered across the stage in a grass skirt hotly pursuing the golden shaft. Bizarre apparel on Russell Knudsen is an accustomed site at the ISHRS meetings. We vividly recall Russell's phosphorescent Rhine stone jacket when he hosted the ISHRS meeting in Nashville and his American football referee's uniform when hosting the open microphone sessions. Russell's unpredictable behavior is but a small part of his charisma. He is a kind man, quick to deliver a compliment or constructive criticism that is delicately delivered and well accepted. He has no enemies despite his vocal presence. He has a unique gift of offering volumes of wisdom with few words. His charming wife's name is Anne, who benevolently gave him two sons. She is frequently seen in the arms of other men during ISHRS gala balls making their contribution to our Society a true family affair. Russell began the practice of medicine in 1978. His first foray was one into general surgery before bolting into private practice in 1982. He soon was exposed to the field of hair restoration surgery and this became his full-time vocation in 1984. With his mentor, Richard Shiell, he formed the Australian Society of Hair Restoration Surgery. His first hair transplant meeting was in February 1986 in Hot Springs, Arkansas, a course chaired by Dr. Blu Stough. Russell has been not only a featured speaker but also a significant component of the ISHRS meetings since their inception in 1993. Russell served on the board of directors for the ISHRS and has become a vital component to the ISHRS Annual Meeting Advisory Committee. In 1996 he chaired the meeting in Nashville and in 1998 he served as president of the Society. He currently serves on the International Advisory Committee and Past-Presidents Committee. He is deeply committed to the ISHRS and is a vocal proponent of the educational efforts of our Society. He is affectionately referred to as the "ambassador of the ISHRS," since he regularly attends hair meetings around the world. Russell has a sharp wit, which is always welcome and refreshing. He assists in the organization and presentation of the lively open microphone sessions of the ISHRS. We all know his contribution to the Society by co-editing the *Hair Transplant Forum International*. With his long list of contributions it could be argued that few have done more for the advancement of the ISHRS. Russell has taught us that we succeed best in our individual excellence when we all work together. He embodies the fraternal order expressed by Thoreau's poem, "Friends." "They are kind to each other's hopes. They cherish each other's dreams." Perhaps his greatest gift is the ability to excavate and promulgate hidden qualities within others. Those he touches, like a swelling tide, summarily have an enormous impact on the field of hair restoration surgery.

The **Platinum Follicle Award** recognizes contribution to the science of hair restoration surgery. This year's winner, Carlos O. Uebel, MD, from Porto Alegre, Brazil, is a well-trained physician, who practices plastic surgery as well as hair transplantation. This characteristic alone makes him special in the field. Dr. Uebel is Associate Professor Division of Plastic Surgery Pontifícia Universidade Católica do Rio Grande do Sul-PUCRS, Porto Alegre, Brazil, and is Chief of Plastic Surgery Clinic, Porto Alegre, Brazil. He has written numerous papers on the punctiform technique, flap surgery, and scalp reduction surgery dating back to the early 1980s. Dr. Uebel has been a cornerstone to the Society since its inception and has attended annual meetings since 1993. While Dr. Uebel is widely known for his punctiform method of "stick and place," his greatest contribution to hair restoration surgery is the mega-session. Dr. Uebel became father of the mega-session through his pioneering surgical accomplishment to transplant over 1,000 grafts in a single session. I remember where I was when I heard President Kennedy had died, saw the space shuttle explode in 1986, saw President Reagan shot, and read about Dr. Uebel's astonishing results. Dr. Norwood recognized the importance of this work and featured the occurrence with the *Forum* headline "It happened in Rio." I read of Dr. Uebel's surgery with great enthusiasm and imaginative thoughts. His work showed that large numbers of small grafts planted into a large number of receptor sites resulted in rapid, natural results. Dr. Uebel had been performing 1,000-graft sessions in the mid- to late 1980s. Prior to Dr. Uebel's success with the first "mega-session," transplant sessions predominantly consisted of fewer than 150 grafts. There was a general feeling that a large number of grafts transplanted at one time might impair the circulation of the scalp, resulting in necrosis or poor hair yield. Dr. Uebel dispelled these myths while exhibiting competent and skillful surgical skills. Upon successful performance of the first mega-session, Dr. Uebel reported his results and described them with visual clarity during the 1993 meeting in Dallas. Together


Carlos O. Uebel, MD
Porto Alegre, Brazil

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with the Moser Clinic and Claudia Prawitz Moser, Dr. Uebel helped to popularize the mega-session. Dr. Uebel's startling results stimulated a rapid change in the field of hair restoration. Soon many physicians averaged over 500 grafts per session and then the mega-session became ingrained not only in the practice of many physicians, but also became a preference of many patients. Dr. Uebel's natural and rapid results provided the shockwave that initiated perhaps the most significant change to the field of hair restoration surgery during the 1990s—the general acceptance of the mega-session. This historic contribution stimulated a complete metamorphosis in the field of hair restoration. There are advantages of this bold clinical accomplishment that, even today, are not widely understood. It often takes years to comprehend and fully appreciate the contributions of great visionaries like Dr. Uebel. Between the contributions of Dr. Bob Limmer and Dr. Carlos Uebel, the era of modern hair transplantation has evolved.✧

Commentaries

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File, then New, then folder. You just created a new folder. Now right click on the new folder, click rename, and name the folder your recent consult's name. Within this folder you can create any series of folders by date. Now copy and paste the photographs you have taken of that consult from each specific date and paste them in their respective folders. Using these means, you can archive a series of patient encounters, pull them up through your network, and monitor your patient's response to treatment. All this may be performed using software you already possess.

There are several "video microscope" units available. Variations of these are seen at the annual meetings of the ISHRS. These units come in several different powers, allowing you the opportunity to alter the field of vision or degree of magnification. You should compare the cost of these units to the CapilliCARE® prior to purchasing the CapilliCARE®. Based on this comparison, your marketing needs, and your budget, you can make an informed decision about the purchase.

I applaud Dr. Bauman's attention to the examination of the patient. Again, I feel a good examination coupled with an understanding of your findings will help to qualify and eliminate patients for hair restoration surgery. If CapilliCARE® helped to accurately elucidate measurable parameters that influence successful hair restoration surgery, I would be one of its strongest proponents. Unfortunately, I feel it is more fluff than substance in its present form. Furthermore, there are more accurate and inexpensive methods to properly evaluate the donor area. Therefore, I recommend you consider the alternative prior to selecting this expensive piece of equipment.✧

John P. Cole, MD
Atlanta, Georgia

Assistants' Corner

We are all very busy people. The assistant's role is both important and complex. We are the backbone of every hair restoration practice. We oversee the well-being of the patients, and our presence has a major affect upon the outcome of the surgery.

I ask you to take your rightful places and to make your voices heard loud and clear. Take the time to make your presence known.

How can you do this? All you need to do is to share your thoughts, ideas, and experiences with your colleagues in the Assistants' Corner. Send them to me, and they will be published for all to read.

Beginning with this issue, we are going to award certificates of appreciation to those people who submit articles to the Assistants' Corner. The certificate is suitable for framing and hanging in your office. I hope that you will be one of the first to receive a certificate of appreciation.

Sincerely,

Cheryl Pomerantz, RN

New Committee Formed

The Medical Assistants' Auxiliary Committee has been formed. Marilynne Gillespie, RN, is Chair; Cheryl Pomerantz, RN, is Vice-Chair; Joe Greco, PhD, PAC, Mary Ann Parsley, RN, and Carol Rosanelli, RN, JD, are committee members. As news of committee activities becomes available, it will be published here in the Assistants' Corner. (Please see the letter from Marilynne Gillespie, RN, Chairperson of the 9th Annual ISHRS Assistants Program.)

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Dear Assistant Member,

Greetings to all and best wishes to you in 2001.

I have accepted the honor of chairing the surgical assistants meeting October 18–22, 2001, in Puerto Vallarta, Mexico, and will look forward to meeting many of you in person at that time.

At present, I am clinic manager at the Gillespie Clinic in Calgary, Alberta Canada. My duties include personnel, advertising, and financial aspects of the business, as well as involvement in the operating room. I am a registered nurse and have been involved in hair transplant surgery for more than ten years.

The meeting in Hawaii was well attended and it was good to see old friends and meet some new ones. Reflecting on the meeting, I particularly enjoyed a presentation by Pamela Hully and Angela Stevens from Dr. Shiell's office in Melbourne, Australia. I had the opportunity to speak with Pamela informally afterwards and our discussion carried forward to sharing all sorts of ideas and day-to-day concerns of a busy office. It seems to me that informal discussion groups following a presentation would allow us to further share our knowledge and to get to know each other better.

Office managers, who may be surgical assistants as well, have several hats to wear, and I would be happy to organize a discussion for them around such topics as hiring staffs, advertising, running a front office, and so on. This discussion need not take up time in the general session as it is specific to a small group of people, but all members would be welcome.

Several doctors have offered to speak to us and are very open to suggestions from you. What would you like to hear from the doctors that would help you in your work? Are there aspects of their research that you have ideas about and would like to discuss with them?

I hope this letter encourages you to believe your voice can be heard and our professional life can continue to grow and be enriched. In order to have this happen, we must continue to talk to each other. Between meetings, our voice of communication is the Assistants' Corner in the *Forum.* Cheryl Pomerantz will welcome hearing from you.

I will look forward to receiving your ideas.

Sincerely,

Marilynne Gillespie

E-mail: maril@gillespieclinic.com or info@gillespieclinic.com
Fax: 403-255-6547 • Phone: 403-259-6798

Assistants' Corner

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First Assistant Poster Presentation Presented at the 8th Annual Meeting of the ISHRS

Special Considerations in Female Hair Transplantation from the Assistant`s Point of View

Presented by Rebecca Brandy, LPN, Pam Garrison, CMA, Tina Boltd, LPN, and Betsy Einzig, LPN
(They work with Dr. Michael Beehner. Kudos to the above Assistants and to Dr. Beehner for employing them.)

By the time we meet the patient, she has already had her consultation with the doctor and has had blood tests to rule out the physical causes of hair loss. Many times, she may have spoken to one of us on the phone, and she has had a chance to laugh and joke with us. She has begun to feel comfortable with us. Because of this, she may be more likely to voice her concerns to us, rather than to her doctor.

After speaking with the nurses, if she still is unsure, we would have her speak with the doctor again. No patient, whether male or female, should ever be pressured into having transplant surgery that they may not be emotionally prepared for. This can lead to a very unhappy patient, especially if they have high expectations that cannot be met through hair transplant surgery.

Honesty and humor are the keys to creating a comfortable relationship with our patients. If we can set the patient at ease, they will feel free to open up, ask questions, and have an enjoyable experience. While we can't make a difference in every "Follicularly Challenged" person's life, we can make a difference to those who come to us and put their trust in us.

Hair loss in women tends to be much more traumatic than in men. Therefore, it must be addressed from a more emotional point of view. The patient needs to know, well in advance of surgery, all the major complications that could arise. By giving her a chance to speak openly with us, the nurses, she will feel much more comfortable. We can reassure her and explain how to handle whatever complications that may arise. It is up to us to make the difference.

The most frequently asked questions and the general answers to them are:

Q. Am I going to be in a lot of pain?

A. Absolutely not. Before we begin surgery we will give you IV. Valium or Versed and Demerol that will relax you. As a matter of fact, at the end of the case, the doctor will ask you if you felt any pain at all and almost all patients respond, "Not at all!" After the Lidocaine wears off you may experience slight discomfort in the donor area, for this we give you Ativan that will help you sleep and Tylenol #3 in case you need it for the possible discomfort.

Q. Will my forehead swell and what can I do if it does?

A. If you are having a lot of temple work done you will almost certainly have swelling although the amount varies from one patient to another. Usually, we have women take 60mg of Prednisone the morning of their surgery to reduce their chances of swelling. If you have not already taken it, and if you are not diabetic, we will give it to you now. We also recommend that you apply a bag of frozen peas wrapped in a dry cloth to the forehead for 10 minutes on and 10 minutes off for the first day. This has helped many of our patients and was actually recommended by a female patient. (A bag of frozen peas conforms well to the forehead and tends to be more comfortable than ice.)

Q. How will I look when I leave here after surgery?

A. We will apply a light dressing to your scalp that may be removed in 24 hours. This will then be covered by a surgeon's cap and a bandana. Some patients prefer to bring their own hats to wear to go home.

Q.How noticeable will this be and how can I cover it up?

A. The scabs may be noticeable for 2-4 weeks but are usually easy to cover with your existing hair. We do offer a free sample of Dermatch, which is a camouflage type of make-up that we can show you how to use. Around the hairline and temple area, our normal foundation make-up should work fine.

Q.Am I making the right choice? Do I really need this?

A. Only you can make that decision. We have been doing this for a long time, and female hair transplants have come a long way in the past few years. This is by far the best time you could have chosen to have it done. If you are still not sure or are not ready for this, you still the option to back out. It is your decision and we will support you either way. ✧

Editor's Comment
I was glad to see that a poster from the Assistants' group was accepted, I hope to see a lot more. Remember, a picture is worth a thousand words. Thank you Rebecca Brady, Pam Garrison, Tina Boldt, and Betsy Einzig for being the pioneers for the rest of us.

Assistants' Thoughts on the Live Surgery Workshop in Orlando

Julie Miller, RN
Works at Dermatology Associates Clinic, Portland, Oregon

Attending the Live Surgery Workshop is of benefit to veterans and new staff members. The ISHRS Live Surgery Workshop was well organized with a nice blend of procedures and in-depth lectures. Dr. Leavitt and his staff did a wonderful job in making everyone feel welcome and comfortable.

During the lectures, a well-rounded discussion was given of various techniques and research data. At the workshops, we had a chance to observe techniques, ask questions, and to try out new techniques, new instrumentation, and new equipment.

The best part of the workshop was the opportunity to talk with both physicians and their staff. Networking and sharing knowledge and experiences was the most valuable part of the workshop. I found out at the workshop that the average case size was 800–1,000 grafts. Of these grafts, most people reported that they were using follicular units of 2–3 hairs and single follicular units in the frontal hairlines. I also noted that about two-thirds of the physicians use a multi-bladed scalpel. Most assistants use some kind of magnification, microscope, loupes, and backlighting. Most offices have 3-4 assistants working on hair restoration cases. We saw that recipient sites are created in many ways—some use micro-scalpels and some use slot punches.

Dr. Kim presented his research on the effect the procedure has on the grafts. He noted a decreased graft viability when the grafts were dried out for more than 10 minutes, and he noted that keeping the grafts cool prolonged their viability. He also noted that 50% Hydrogen Peroxide solution had no effect on graft viability. Dr. Kim also stated that crushing, bending, or stretching did not affect graft viability.

We heard some interesting research on follicular units and density. It was suggested that using grafts of 3–4 follicular units yields greater density than single follicular unit grafts since only a limited number of grafts can be placed in any area.

One of the most intriguing procedures was watching Dr. Mangubat harvest a donor strip with an 11-bladed scalpel and then cut them with his graft cutter. Dr. Mangubat seems to have great results with his procedure.

Meetings and workshops are a great way to improve your techniques and network with others. I hope that everyone will have a chance to attend one of these meetings next year. ✧

MARK YOUR CALENDARS!

Get ready for the
9th Annual Meeting of the ISHRS
October 18–22, 2001
Puerto Vallarta, Mexico

This Annual Meeting will be held at the Krystal Vallarta Hotel in Puerto Vallarta, Mexico. I have heard that it backs up onto a jungle. It sounds like a very exciting environment to have a great meeting.

Fantastic plans are being made for you. You plan to be a part of the meeting.

Next Issue:
Assistants' Committee News
Update on Meeting Plans
Time Management

Please direct your contributions for the Assistants' Corner to:
Cheryl Pomerantz, RN
Chicago Hair Institute
710 N. York Rd., 2nd Floor
Hinsdale, IL 60521

Phone: 630-655-9331 • Fax: 630-655-9381

Hands-On Surgery Workshop
August 24–25, 2001

Follicular Unit Transplantation

This hands-on course is designed to cover all aspects of the follicular unit transplant technique. It is appropriate for the initiate as well as the experienced surgeon. Participants will be actively involved in 6–8 surgeries. Topics to be covered will include:

- ➤ Candidate Selection
- ➤ Donor Harvesting
- ➤ Anesthesia
- ➤ Post-Op Dressing
- ➤ Hairline Design
- ➤ Graft Dissection
- ➤ Graft Insertion
- ➤ Instrumentation

PARTICIPATION LIMITED TO (12) INDIVIDUALS.
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SPECIAL GUEST FACULTY:

Bill Parsley, MD
Marc Avram, MD

THE STOUGH CLINIC
HAIR RESTORATION SURGERY

Dow B. Stough, MD
Course Director
Phone: (501) 623-6100
Fax: (501) 623-6187
E-mail: sstough@cswnet.com

SAVE THE DATE! OCTOBER 18–22, 2001 • PUERTO VALLARTA, MEXICO

9th Annual Meeting of the ISHRS
October 18–22, 2001
Puerto Vallarta, Mexico

Photos and description from:
www.accessmexico.com

Puerto Vallarta began its life as a tourist hot spot in 1964 when John Huston, Richard Burton, and Elizabeth Taylor arrived to film "Night of the Iguana." The quaint beauty of the whitewashed town's red tile roofs, cobblestone streets, and expansive beaches catapulted it into the spotlight, and trips to Puerto Vallarta became frequent grand prize awards on television game shows.

Its popularity has not faded over the years, and this Pacific coast town has maintained its grand prize resort status. Puerto Vallarta hugs the Bahia de Banderas, the largest natural bay in Mexico. Its 100 miles of coastline—studded with palm trees and ringed by mountains—are some of the most spectacular beaches in the world, with long flat stretches north of town and secluded coves and inlets to the south.

In the bay just south of the city are the famous Los Arcos (The Arches), a series of three rock islands that are natural shelters (and protected ecological zones) for an astonishing variety of marine life and water birds. The largest rock forms the natural arch that gives the triad its name. Tour boats head to Los Arcos daily, and snorkelers and divers can get up close and personal with the manta rays, Golfina turtles, and tropical fish that use Los Arcos as home base.

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We'll help you get your message heard.

Upcoming Events

Following is a guide to upcoming meetings and workshops related to hair restoration. For more information, contact the appropriate sponsoring organization at the number listed. Meeting organizers are reminded that it is their responsibility to provide the *Forum* Editors with advance notice of meeting dates.

Date(s)	Venue	Sponsoring Organization(s)	Contact Information
May 30–June 3, 2001	IV ESHRS Annual Congress Barcelona, Spain	European Society of Hair Restoration Surgery	Fax: +34-93-212-21-15 Tel: +34-93-212-78-88 E-mail: dr@vilarovira.com
August 24–25, 2001	Live Surgery Hands-On Workshop	The Stough Clinic Hot Springs, Arkansas	Fax: 501-623-6187 Tel: 501-623-6100
October 18–20, 2001	ISHRS Review Course in Preparation of the ABHRS Exam Puerto Vallarta (in conjunction with the ISHRS Annual Meeting)	International Society of Hair Restoration Surgery	For information on registration, contact ISHRS headquarters office. For information on course content, contact the ABHRS. Limited to 30 students.
October 18–22, 2001	9th Annual Meeting of the ISHRS Puerto Vallarta, Mexico	International Society of Hair Restoration Surgery	Fax: 847-330-1135 Tel: 847-330-9830 E-mail: info@ishrs.org
January 12, 2002	ABHRS Board Exam Dallas, Texas	American Board of Hair Restoration Surgery	Fax: 708-474-6260 Tel: 708-474-2600

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