In this Issue . . .

NOTES ON HPERS

The Health Professions Educational Research Symposium (HPERS) will take place Saturday, January 15, 2011. The theme of this year's conference is *Recognizing, Teaching, and Modeling Professionalism*. The opening keynote speaker is Franklin Medio, Ph.D. and the closing keynote speaker is Carol Davis, D.P.T., Ed.D. Dr. Medio's presentation is titled "Teaching Professionalism: Do Generational Differences Really Make a Difference?" Dr. Davis's presentation is titled "Evaluating Behavior in the Affective Domain." Visit the HPERS website for more information: *www.nova.edu/hpers* or send specific questions to *hpers@nova.edu.* The call for papers is available on the website. Deadline for abstract submission is October 17, 2010. Abstracts may be submitted online at *www.nova.edu/hpers*.

Save the Date

September 14, 2010
New Faculty Orientation

October 17, 2010
Deadline for HPERS abstract submission

December 1, 2010
Deadline for proposal submission for HPD Educational Research Grant

January 15, 2011
Health Professions Educational Research Symposium (HPERS)

February 10, 2012
HPD Research Day

RSVP to Kathleen Hagen at (954) 262-1235 or *khagen@nova.edu.*

FOCUS on Research

NOVA SOUTHEASTERN UNIVERSITY
Health Professions Division

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THE MATTHEW EFFECT

By Patrick Hardigan, Ph.D.

Douglas Kell, D.Phil., chief executive of the Biotechnology and Biological Sciences Research Council, wrote about the frequency of mis-citations and the linkage to a sociological concept called the Matthew Effect.[1] The Matthew Effect is named after a verse in the *Bible's* Gospel of Matthew (25:29) that reads, "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath." The variant, according to Jack Goldstone, Ph.D., is that, "In scientific journals, and at scientific conferences, new articles and papers by already-prestigious scientists usually receive far more attention than articles by scientists still on the way up, regardless of the intrinsic merit of such contributions."[2]

Dr. Kell argues that the Matthew Effect applies to journals and papers too: "a highly cited journal or paper is more likely to attract citations (and mis-citations), for the simple psychological reasoning that 'if so many people cite it, it must be a reasonable paper to cite' (and such a paper is, by definition, more likely to appear in the reference list of another paper)."[1] According to Dr. Kell, this reasoning can be applied whether the paper has been read or otherwise. For example, Simkin and Roychowdhury (2005) discovered that in many cases, the scientist picks up several random papers, cites them, and also copies a fraction of their references.[3] This was true in 70 percent of the articles they analyzed. A "tip-off" to this is if a paper copies a mis-citation—by the citing author.[3] We conclude with the following ideas to consider:

- **Tools for the Job:** Does use of a single citation search tool (e.g., PubMed, UKPMC, Google Scholar, Web of Science) bias the results?
- **Pick 'n Mix:** Selective citation to support a particular argument/ hypothesis. Are people only citing portions of an article and deliberately ignoring conflicting evidence elsewhere within the same article?
- **Don't Quote Me on That:** Even when the "original" paper is cited, it is often misquoted. Do those citing not always fully understand the meaning behind a paper? Is this form of mis-citation more a case of misinterpretation rather than misrepresentation?
- **It's All Just Greek to Me:** Is there a bias against non-English language papers and those from "non-English-speaking" countries?
- **Return to Nature:** Is there a preference for citing known/higher impact factor papers?
- **Measure for Measure:** Are bibliometric measures an accurate reflection of research excellence?

1. Simkin, M.V., Roychowdhury, V.P. (2005). Stochastic modeling of citations slips. *Scientometrics, 62*, 367-384.
2. *http://blogs.bbsrc.ac.uk/index.php/2009/03/the-matthew-effect-in-science/.*
3. Goldstone, J.A. (1979). Deductive explanation of the Matthew Effect in science. *Social Studies of Science, 9*, 385-391.

The Office of Research in the Health Professions Division provides support for the faculty and staff of the Health Professions Division in their efforts to obtain and conduct research, while ensuring compliance with NSU policy, sponsor policy, and applicable law.

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RESEARCH GRANT APPROVAL - JUNE 2010

College of	Investigator	Protocol Title	Sponsor	Amount
Dental Medicine	Yamilet Blanco, D.M.D.	Evaluation of Endodontic Sealer Dentinal Tubule Penetration, Antimicrobial Activity, and Biocompatability	NSU-HPD	$5,000 For two years

RESEARCH GRANT APPROVAL - AUGUST 2010

College of	Investigator	Protocol Title	Sponsor	Amount
Dental Medicine	Hassan Davalloo-Ghajar, D.M.D., D.D.S.	Mini-Implants Load Limit as it Relates to Placement Angles	NSU-HPD	$3,400 For two years
Dental Medicine	James Hien Nguyen, D.M.D.	Antibacterial Activity and Bond Strength of an Orthodontic Composite Bonding Resin Containing Selenium (in Vitro)	NSU-HPD	$5,000 For two years
Dental Medicine	Fernando J. Padron, D.M.D.	In Vitro Comparison of Vertical Marginal Gaps of E4D Design Metal Copings and Conventional Cast Metal Copings	NSU-HPD	$2,500 For one year
Dental Medicine	Ryan Tigrett, D.D.S.	The Shaping Ability of Vortex and EndoSequence Rotary File Systems: A Micro CT Comparison	NSU-HPD	$5,000 For two years
Pharmacy	Joshua Caballero, Pharm.D.	The Relationship of Executive Control Function on Disease Outcomes in Elderly Hispanic Patients with Type 2 Diabetes: A Pilot Study	NSU-HPD	$5,000 For two years

RECENT NIH FUNDING

Thin Film Coatings for Toughened Dental Ceramics **NIH-NIDCR 5R01 DE013511-11**
Funding for 2010-2011: $426,869 **Jeffrey Y. Thompson, Ph.D., College of Dental Medicine**

This research, entering its 12th year of funding, focuses on application of novel thin-film surface coatings, specifically zirconia-based films, to enhance the fatigue and fracture resistance of dental ceramic restorative materials. The overall goal of this research is to perfect thin-film deposition methods that will modify or eliminate these flaws in a manner that will not adversely affect the biocompatibility, esthetics, fit, or the ability to cement an all-ceramic restoration, regardless of its chemical composition or microstructure. Initial results indicate that modifying zirconia films as thin as 5μ m can increase the apparent toughness, or resistance to fracture, of a relatively weak ceramic such as dental porcelain by as much as 40 percent. Current studies are focused on controlling the phase structure of deposited zirconia films and on producing novel laminate zirconia-based thin-film structures with tailored properties for enhanced energy absorption during fracture. It is hoped that optimization of deposition methods and fine control of the microstructure of the deposited thin-films will lead to enhancements approaching 100 percent of the useable fracture and fatigue properties of any native dental ceramic material.

Zirconia Surface Modification for Adhesion to Biological and Synthetic Substrates **NIH-NIDCR 1R56 DE020142-01**
Funding for 2010-2011: $203,416 **Jeffrey Y. Thompson, Ph.D., College of Dental Medicine**

This research, newly funded, focuses on surface modification of zirconia bioceramics to enhance adhesion to biological and synthetic materials currently utilized in a wide range of biomedical applications. The specific objective of this project is to explore the use of a vapor-phase chloro-silane pretreatment to modify ZrO_2 surfaces with chemically attached, nano-scale, silicate films. These films alter surface chemistry to mimic that of pure silica and allow the surface to be silane treated effectively with standard commercial silanes. Preliminary data have shown that the proposed chloro-silane pretreatment results in significant improvements in bond strength of ZrO_2 to dental composites using commercially available resin cements, when compared to untreated surfaces or surface treatment alternatives. This process would enable clinicians to place ZrO_2 components effectively using accepted adhesive silane and resin cementation techniques. It is believed that this technology will have a direct and positive impact on existing bioceramic applications, enhancing utility and improving long-term clinical efficacy.