

Use of the Workers' Compensation Earning Capacity (WCEC) Formula in  
Determining Diminished Future Earning Capacity in California

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Abstract

California's new workers' compensation law changed the standard for determining permanent disability from diminished ability to compete for jobs in the open labor market to diminished future earning capacity. This change means that the judicial system now has to consider not only whether the injured worker can work in the open labor market, but also any loss of earning capacity post-injury. To simplify the process, California adopted a new *Schedule for Rating Permanent Disabilities (Schedule)*, (California Division of Workers' Compensation, 2005), which provides an adjustment factor for diminished future earning capacity. Challenges to the adequacy and validity of the *Schedule* were soon brought by injured workers and their attorneys. Courts have ruled that since the *Schedule* is *prima facie* evidence regarding permanent disability ratings, it can be rebutted through evidence brought by the injured workers. Van de Bittner (2006) developed a Workers' Compensation Earning Capacity (WCEC) Formula, which provides an estimate of diminished future earning capacity expressed as a percentage. The WCEC Formula provides a means to determine the actual diminished

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future earning capacity of an applicant. This article expands on the application of the formula to individual cases, the foundational and often crucial assumptions that the DFEC expert needs to make when applying the formula, the methodology relied upon to meet evidentiary rules of admissibility, as well as its potential use in other legal arenas, notably personal injury, marital dissolution and employment discrimination cases.

### Introduction

Van de Bittner (2006) described in detail the implications of the changes in the California workers' compensation system, particularly those that pertain to Labor Code § 4660. California Labor Code § 4660 (Grant, Mawyer, Solomon, Hoover, Dougherty, Shifflett, Woo, Sofinski, Dempsey, & Kirby, 2007) states that "diminished future earning capacity shall be a numeric formula based on empirical data and findings that aggregate the average percentage of long-term loss of income resulting from each type of injury for similarly situated employees" (p. 320). Van de Bittner's WCEC Formula incorporates all of the elements stated in Labor Code § 4660. The formula is expressed in the following equation:

$$DFEC = f(WLE) \times \left[ \frac{PRE-POST}{PRE} \right]$$

Where

DFEC = diminished future earning capacity  
WLE = worklife expectancy  
PRE = pre-injury earning capacity  
POST = post-injury earning capacity  
f = function of

The formula represents a sequential process as follows:

1. Clarify worklife expectancy
2. Establish pre-injury earning capacity
3. Establish post-injury earning capacity
4. Calculate diminished future earning capacity
5. Calculate the impact of any additional medical or vocational factors on DFEC.

Vega, Van de Bittner, Toyofuku, Van de Bittner and Mohebbi:  
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Thirty-one cases were analyzed in which the WCEC Formula was used to arrive at a percentage of diminished future earning capacity. Of these, 17 cases were evaluated at the request of the applicant, 11 were evaluated at the request of employers or insurance companies and 3 were performed by agreement of the parties. An analysis of 5 of the 31 DFEC evaluations illustrates the application of the WCEC Formula to develop an opinion regarding DFEC. The following issues are addressed in this analysis:

- How is pre-injury earning capacity established?
- Is it the same as actual past earnings?
- If not, when is it not the same as actual past earnings?
- What is the basis of the most probable post-injury earning capacity?
- What is the effect of age at injury on pre- and post-injury earning capacity?
- Is retraining considered when calculating post-injury earning capacity? If so, does retraining apply in every case?
- Are benefits factored into this process, pre- and post-injury? How?
- Are future wage increases and inflationary effects calculated in this process? Why or why not?

Answers to all of these questions and more will be discussed later in the article. But first, the legislative and administrative context of the need for a DFEC evaluation will be described. The impact of recent court decisions on the evaluation of DFEC will also be discussed.

#### Legislative and Administrative Context

The new *Schedule for Rating Permanent Disabilities (Schedule)* (California Division of Worker's Compensation, 2005) sets forth the procedure for determining permanent disability as follows:

Initial impairment ratings are consolidated by body part and converted to a whole person impairment rating. The impairment standard is then adjusted to account for diminished future earning capacity, occupation and age at the time of the injury to obtain a final permanent disability rating.  
(p. 1-2)

The *Schedule* promulgates the use of the American Medical Association's *Guides to the Evaluation of Permanent Impairment, 5<sup>th</sup> Edition (Guides)* (Cocchiarella & Andersson, 2001). The *Guides* make it clear that the physician, unless having specialized education, training, and experience in

the filed of employment rehabilitation or occupational medicine, as in the case of physiatrists, should not provide a determination in regard to disability. Disability is defined in the *Guides* as "an alteration of an individual's capacity to meet personal, social, or occupational demands or statutory or regulatory requirements because of an impairment" (p. 8). Instead, the physician is charged with providing an impairment rating upon which a disability rating can be obtained. When determining an impairment percentage, the *Guides* state that the ability to work is not included for several reasons:

1. work involves many simple and complex activities,
2. work is highly individualized, making generalizations inaccurate,
3. impairment percentages are unchanged for stable conditions, but work and occupations change, and;
4. impairments interact with such other factors as the worker's age, education, and prior work experience to determine the extent of work disability. (p. 5)

The *Guides* are unequivocal on this point:

Impairment percentages derived from the *Guides* criteria should not be used as direct estimates of disability. Impairment percentages estimate the extent of the impairment on whole person functioning and account for basic activities of daily living, not including work. The complexity of work activities requires individual analysis. Impairment assessment is a necessary *first step* for determining disability. (p. 13)

Further, in regard to employability determinations, the *Guides* advocate the use of "nonmedical experts such as vocational specialists" (p. 14) to assist in the assessment of the impact of a disability on a person's capacity to perform work considering available accommodations, alternative jobs, as well as any other work in the open labor market.

The prior rating schedule in California was not based on the *Guides*. Instead, California had its own rating schedule, which in addition to medical impairments, considered subjective factors such as pain and work capacity guidelines, when determining the total percentage of disability. The *Guides*, in an effort to use objective and science-based data, discourage the factoring

of "subjective concerns such as fatigue, difficulty concentrating, and pain, which are not accompanied by demonstrable clinical signs or other independent, measurable abnormalities..." (p. 10). Pain factors are presumed to be included in the final impairment rating.

Further, the prior rating schedule in California did not consider diminished future earning capacity. Instead, when occupation, age, and vocational factors, such as level of education, employment history, intellectual functioning, and personal presentation, combined with the medical impairment, to permanently preclude a worker from returning to any type of competitive employment, said vocational factors were considered in establishing the permanent disability rating (*LeBoeuf v. WCAB*, 1983). In this case, consideration was given to a worker's ability to benefit from vocational rehabilitation services. Vocational rehabilitation services often functioned as an affirmative defense against a claim for permanent and total disability; however, in the instances where vocational rehabilitation was attempted and was not successful, this too was offered as evidence of inability to compete in the open labor market.

Since the inception of the new *Schedule*, vocational rehabilitation coincidentally is no longer offered to mitigate the effects of an industrial injury. Instead, the new law now provides a voucher for vocational retraining, the use of which is controversial at this time since it does not provide for necessary expenses associated with retraining such as a weekly living allowance, adequate rehabilitation counseling services, transportation, childcare and other ancillary costs. Further, the new law includes a future earning capacity (FEC) adjustment factor of 10% to 40% for each injury category, which was to be based on data from the RAND Institute for Civil Justice (Seabury, Reville, & Neuhauser, 2004). However, the FEC adjustment factor has come under intense scrutiny, as even the independent California Commission on Health and Safety and Workers' Compensation (CHSWC) (Baker, 2006, February 23), concluded that no empirical studies existed at the time the FEC adjustment factor was formulated, as discussed below.

The new law resulted in a change from an employability standard to an earning capacity standard in determining a permanent disability rating. Nevertheless, the *Schedule* still considers permanent and total disability as one possible outcome along the entire continuum. The *Schedule* states,

A permanent disability rating can range from 0% to 100%.  
Zero percent signifies no reduction of earning capacity, while  
100% represents permanent total disability. A rating between

0% and 100% represents permanent partial disability. Permanent total disability represents a level of disability at which an employee has sustained a total loss of earning capacity. Some impairments are conclusively presumed to be totally disabling. (p. 1-2)

Therefore, the *Schedule* not only considers issues of employability, but also the loss of earning capacity, which is termed "adjustment for Future Earning Capacity Factor (FEC)" (p. 1-5). The *Schedule* was also developed to "promote consistency, uniformity and objectivity" (Grant, et al., 2007, p. 320).

There has been considerable controversy regarding the manner in which the new *Schedule* was prepared:

The methodology and FEC adjustment table is premised on a numerical formula based on empirical data and findings that aggregate the average percentage of long-term loss of income resulting from each type of injury for similarly situated employees. The empirical data was obtained from the interim report, Evaluation of California's Permanent Disability Rating Schedule (December 2003), prepared by RAND Institute for Civil Justice. The result is that the injury categories are placed into different ranges (based on the ratio of standard ratings to proportional wage losses). Each of these ranges will generate a FEC adjustment between 10% and 40% for each injury category. (p. 1-5)

The above methodology was soon challenged in court by injured workers and their attorneys, contending among other things, a lack of an adequate empirical basis for the FEC adjustment factor in the new *Schedule*. In this regard, the California Commission on Health and Safety and Workers' Compensation (Baker, 2006, February 23) stated:

1. At the time the 2005 schedule was adopted, adequate empirical studies did not exist to permit the accurate calculation of the relationship between impairments evaluated according to the AMA Guides and diminished future earning capacity.
2. The 2005 Schedule has reduced average permanent disability awards by more than 50%, independently of all the other reforms enacted by SB 899. (p. 5)

The same RAND Institute for Civil Justice, from whose study the future earning capacity factors were to be derived (Seabury, Reville, & Neuhauser, 2004), had previously reported that permanent disability benefits under the old law replaced only 37% of lost earnings (Reville, Seabury, & Neuhauser, 2003). Under the new law, permanent disability benefits are less than 50% of benefits under the old law as noted above. Therefore, the new law compensates workers for their lost ability to earn at about 18.5% of pre-injury earnings, which is significantly less than the 67% replacement rate specified by statute in most states' workers' compensation systems, including California (Baker, 2006, February 23).

After initial skirmishes regarding the cases to which the new *Schedule* would be applied, the issues focused on the adequacy of the *Schedule*, its validity and empirical basis, and the manner in which it was adopted as the new standard for determining permanent disability compensation. The new *Schedule* became effective January 1, 2005, with surprising speed as it was implemented less than one year after SB 899 was enacted on April 19, 2004. The new *Schedule* applies to all cases in which a permanent and stationary finding of disability or maximum medical improvement (MMI) was not yet determined in the medical records prior to 1/1/05. This affected tens of thousands of then current open cases. Another battlefield was opened on the issue of apportionment, as physicians are now required to address industrial and non-industrial factors within the overall impairment rating. Thus, the existence of congenital or pre-existing non-industrial factors now result in lower overall liability regarding disability compensation for employers and their insurers. It is not surprising, then, that resistance to the new *Schedule* was immediately felt. The results of these changes have recently become more apparent.

#### Court Decisions

##### *Fan v. Gaming Group, State Compensation Insurance Fund (2006)*

In this case, the workers' compensation judge (WCJ) admitted the testimony of the DFEC expert, and ordered his fees to be reimbursed by the defendant. Fees were ordered despite the fact that the WCJ found the expert's testimony seriously deficient:

He did not distinguish between pre-injury and post-injury earnings when calculating a pre-injury wage. He did not consider the applicant's complete wage history. He did not adequately research all areas in which applicant had work experience (import-export, consulting) and did not adequately

consider potential employment that may be possible with additional education. He concluded that Ms. Fan had a very reduced earning capacity due to her poor language skills, yet she testified competently at hearing and deposition without the aid of an interpreter and worked with the public (where communication in English was required) and in import-export for many years. The Vocational Expert's survey of potential work was inadequate as it was limited only to gaming jobs such as card dealing. The survey did not encompass the full range of occupational opportunities available to Ms. Fan. [DFEC expert's] conclusions were based on the incomplete and inaccurate history. (Opinion and Decision, p. 3)

The WCJ also found that, "his numerical formula to determine wage earning capacity loss is simplistic and flawed as it is not based on accurate data neither as to pre-injury capacity, nor appropriately researched post-injury possibilities" (Opinion on Decision, p. 3). However, despite the WCJ's rather forthright rejection of the DFEC expert's analysis, and a finding that he did not effectively rebut the *Schedule*, "the vocational expert's testimony (although not persuasive) is admissible as to earning capacity and labor market impairment, but not as to the Rating Schedule" (Opinion on Decision, p. 4). The findings in this case confirm the need for the DFEC expert to follow a sound methodology in conducting an evaluation.

*Navarro v. Arbor View Retirement Community/State Compensation Insurance Fund (2006)*

In this case, applicant was a 23-year-old woman employed as a caregiver at a retirement community when she hurt her back while assisting a resident. The agreed medical examiner provided a zero percent whole body impairment rating per the *Guides* and gave a work preclusion of no very heavy work. The DFEC expert met with the applicant, took a complete employment and wage history, administered a battery of standardized tests, and calculated DFEC based on post-injury employment while considering the average wages of various potential jobs, even though the applicant had already secured a part-time minimum wage job. The DFEC expert used the RAPEL method, which considers, among other things, a rehabilitation plan (i.e., retraining), labor market access, placeability, employability, and labor force participation (worklife expectancy). The DFEC expert concluded that Ms. Navarro could no longer work as a certified nurse's aide, her original career path (i.e., vocational capacity, as she was not a nurse's aide at the time of injury, but a caregiver). The DFEC expert used wage and employment data from the U.S.

Department of Labor and a computerized transferable skills software program to identify post-injury potential job matches. The DFEC expert found several unskilled occupations that the client could perform and obtained an average entry-level wage, based on probable outcomes. As previously noted, Ms. Navarro found employment part-time, 25 hours per week, as a receptionist earning minimum wage. After calculations were made, the DFEC expert provided a range of DFEC from 15% to 18%. The WCJ ruled "the injury caused permanent disability, after adjustment for age and occupation of 15%." (Findings & Award, p. 1).

The DFEC expert's determination of a percentage of DFEC was the equivalent of the ultimate disability rating. This case dramatically illustrates the perils of relying solely on the new *Schedule*, which resulted in a zero disability rating, despite the obvious fact that the injured worker had lost her job and had sustained economic loss. This case was not appealed by the insurance carrier.

*Costa v. Hardy Diagnostic and State Compensation Insurance Fund* (2006, 2007)

On December 7, 2006, the *Costa en banc* decision was handed down by the California Workers' Compensation Appeals Board (WCAB) in an appellate decision. In it, the wrangling over the legality of the new *Schedule* was decided. The court ruled that the applicant did not meet the burden of proof to show that the new *Schedule* was invalid. As a matter of precedent, this case has far-reaching implications. For one, it found that the new *Schedule* was created in the spirit of the legislation that produced it, taking into consideration all available empirical data at the time. Further it noted "to invalidate the new PDRS, petitioner has the burden of showing that the actions of the AD (Administrative Director) were arbitrary, capricious or inconsistent with section 4660" (Opinion and Decision after Reconsideration, p. 15). The court found none of these applied to the new PDRS. The court noted that the AD is entitled to the presumption of validity.

However, the court also concluded "although SB 899 made sweeping changes to section 4660, it did not alter the provision which allows the parties to present rebuttal evidence to a rating under the PDRS" (p. 24). The court cited three cases in which the percentage of disability using a rating schedule which is only prima facie evidence: *Universal Studios v. WCAB* (1979), *Glass v. WCAB* (1980), and *Nielsen v. WCAB* (1979).

Based on these legal precedents, the court concluded that:

It appears that in choosing to retain the language that the PDRS “shall be prima facie evidence of the percentage of permanent disability to be attributed to each injury covered by the schedule” in section 4660 (while changing almost everything else in that section), the Legislature intended to continue to allow the parties the opportunity to present rebuttal evidence to ratings under the new PDRS. The effect, if any, of the changes to section 4660 as to what evidence may actually rebut a rating under the new PDRS will be decided at least initially, on a case by case basis. (p. 26)

The court agreed with the WCJ in disallowing the DFEC expert’s report due to incorrect disability factors assumptions, inappropriately considered non-industrial factors, and incorrectly calculating the applicant’s pre-injury earning capacity. The report was also considered summative in that it was similar to the DFEC expert’s trial testimony. And yet, the fee associated with the report and testimony of the DFEC expert witness was ordered by the court under Labor Code § 5811. This decision regarding fees was later upheld on appeal.

*Felix v. Crescent Truck Lines (2007)*

On April 2, 2007, in the Report and Recommendation, Petition for Reconsideration, the WCJ equated a DFEC expert’s finding of DFEC with the final PD. The WCJ wrote that, “The PDRS itself uses a range of DFEC to total PD. Therefore, there is a basis to utilize this same language and equate a DFEC determination to PD” (p. 3).

Felix was a truck driver/unloader who hurt his low back. This resulted in a 21% disability rating under the *Schedule*. The applicant presented incontroverted evidence via a DFEC expert who concluded that Mr. Felix had suffered a 52% DFEC.

The WCJ equated the 52% DFEC to the final PD rating, thus bypassing the 21% *Schedule* rating, while concluding that the DFEC expert did consider the applicant’s physical injury, age, occupation, and DFEC. The WCJ went on to affirm that the *Schedule* can be rebutted as per the intent of the Labor Code, which explicitly states that the *Schedule* is only prima facie evidence. Further, the WCJ noted that the Labor Code does not prescribe the manner in which the *Schedule* may be rebutted. The WCJ also ordered the DFEC

expert's fees to be paid by defendant citing the previous *Costa en banc* decision.

*Boughner v. Comp USA, Inc. and Zurich North America* (2007)

On May 9, 2007 the *Boughner* decision found the 2005 *Schedule* to be invalid, in regard to the DFEC adjustment factor, as the WCJ concluded that

The DFEC Adjustment Factors set forth under the new Permanent Disability Rating Schedule adopted January 1, 2005 at page 1-7 Table A, are inconsistent with the authorizing statute, Labor Code § 4660 (b)(2) and therefore invalid. (Findings & Award, p. 2)

The WCJ further found that the applicant had “rebutted the presumptive validity of the PDRS adopted January 1, 2005” (Findings & Award, p. 2). The WCJ deferred all other issues (including a final determination of permanent disability) pending the submission of additional evidence.

The WCJ corroborated the contention of applicants and their attorneys who, since the enactment of the *Schedule*, have argued that the future earning capacity (FEC) adjustment factors do not have a science-based correlation to lost earnings. The WCJ concluded that “policy decisions” superseded “empirical data or studies” (Opinion on Decision, pp. 45, 46).

The WCJ further found that based on the testimony of Robert Reville, Ph.D., an economist and one of the authors of the previously cited RAND 2003 Interim Report, the 1.1 to 1.4 FEC adjustment factors were, in fact, “arbitrary” (p. 47). Indeed the non-partisan California Commission on Health and Safety and Workers’ Compensation arrived at the same conclusion in its *CHSWC 2006 Annual Report* (Baker, 2006, December), which recommended that the Division of Workers’ Compensation (DWC) revise the FEC adjustment factors noted in the 2005 *Schedule* and replace them with those derived from the latest available empirical research. The commission also noted “the DWC has undertaken studies intended to evaluate wage losses and trends from year to year” (p. 13). However, as of the date that this article was accepted (March 2008), no such studies or their results effectively changing the FEC factors in the *Schedule* have been made available to the public. Also, the *Boughner* decision is currently under appeal.

*Gonzales v. Fresno Roofing, Inc. (2007)*

Daniel Gonzales was a 51-year-old roofer on 9/22/03 when he sustained an injury to his right elbow, right upper extremity, clavicle, and spine. His earnings on 9/22/03 were \$978.00 per week. Interestingly, the WCJ noted in the Opinion on Decision that, "As defined elsewhere in the Labor Code, earnings are generally thought of as performance of work for the payment of wages" (p. 6). This statement was made in the context of a discussion about whether Gonzales' pension benefits (which were higher than his wages) should be considered when calculating DFEC. Among other things, this suggests that DFEC experts should consider wages alone, and not in combination with benefits, when calculating DFEC, unless there is a sound basis for including benefits.

The WCJ admitted the testimony of the applicant's DFEC expert and ordered that the DFEC expert's fees be paid by the defendant under Labor Code § 5811. However, the WCJ concluded that the DFEC expert's opinion had not rebutted the *Schedule*. The WCJ expressed some concerns regarding issues such as the applicant's motivation to seek the highest paying job and similarly situated employees in attempting to calculate DFEC. In other words, the WCJ did not find credible the applicant's DFEC expert's post-injury occupational choices, suspecting that Gonzales may have access to higher wages post-injury. For this reason, the WCJ followed the *Schedule* in assigning a final permanent disability rating.

*Magana v. Essey International, Inc. (2007)*

In this case, a three-commissioner Workers' Compensation Appeals Board panel in its Opinion and Decision after Reconsideration affirmed the WCJ's decision to award a 12% permanent disability rating under the *Schedule*, including the FEC adjustment factor of 2 in the *Schedule*. Magana sustained an injury on 2/7/05 to his left ankle and foot. The applicant's DFEC expert testified that the applicant had a DFEC of 18.5% to 27% while the defense DFEC expert testified that the applicant had no DFEC. Among other things, the appeals panel concluded:

Accordingly, it is clear that a rating based upon rebuttal testimony which arrives at a PD rating established solely on DFEC percentage to the overall percentage of PD, as suggested in applicant's petition herein, is invalid under Labor Code § 4660(d) and is insufficient to rebut a rating thereunder. (p. 3)

The panel concluded that neither DFEC-expert “explained why the DFEC adjustment factor contained in the 2005 PDRS is somehow inadequate, or why a different DFEC should apply” (p. 5). Among other things, this suggests that the applicant’s DFEC expert did not clarify how a DFEC analysis considers the nature of the physical injury of the applicant, as well as age and occupation. Finally, the panel stated that testimony of the applicant’s DFEC expert should occur after a recommended rating.

*Benko v. EMCOR/Marelich Mechanical (2007)*

Benko was a 44-year-old plumber on 8/12/04 when he sustained an injury to his lower back. His pre-injury earnings were \$31.61 per hour according to the calculations of the agreed DFEC expert, in consultation with an economist. He had returned to work as a meter reader by the time of the evaluation and was paid \$21.58 per hour on a part-time basis. He had union benefits both pre- and post-injury.

The WCJ relied on the applicant’s qualified medical evaluator’s report, which rated at 16% absent a DFEC factor of 3%. The parties had stipulated to the report of the agreed DFEC expert, which found DFEC of 25%. The WCJ made reference to the *Magana* case in her Opinion on Decision. The WCJ noted that:

The Board stated that the DFEC analysis was to be considered along “with the nature of the physical injury and disfigurement, the occupation of the injured employee, and his or her age at the time of injury. Furthermore, the ‘nature of the physical injury and disfigurement’ must incorporate the descriptions and measurements of physical impairment and corresponding percentages of impairments published in the *AMA Guides*.” (p. 3)

Based on the language in the *Magana* case, in the very least, the DFEC factor that is built into the 2005 PDRS should actually be applied after the adjustment for age and occupation. Taking it one step further, as I did in this case, when there is such a clear finding by an agreed DFEC expert of loss of earning capacity, it should be considered as a separate injury/insult to the injured worker and the combined tables should be applied. This would then allow the DFEC percentage to be converted validly, into permanent disability, point for point. (p. 3)

Therefore, the WCJ combined the physical injury rating of 16% with the DFEC of 25% to reach a final permanent disability of 37%. This case was submitted on the record, with no testimony from any witnesses. The agreed DFEC expert's fees were not an issue before the court. The expert's fees were paid prior to the evaluation by the claims administrator.

*Wirick v. State of California (2007)*

Wirick was a 53-year-old employment program representative for the California Employment Development Department when she sustained an injury on 7/1/05 to her bilateral arms, bilateral hands, bilateral wrists, and neck. Her condition became permanent and stationary on 2/5/07. She had a whole person impairment, which resulted in a permanent disability rating of 6% under the *Schedule*, before considering the FEC adjustment factor. Her only work restriction was to work four days per week instead of five at her regular occupation.

The WCJ admitted the testimony of the applicant's DFEC expert. The DFEC expert concluded that the applicant sustained DFEC of 25%, 20% for her limited work life expectancy and an additional 5% for diminished retirement benefits for total DFEC of 25%. Regarding retirement benefits, the WCJ stated, "It is noted that since applicant is a State employee, the nature of her retirement benefits makes it a valid factor to consider whereas generally, such a factor may be too speculative for non-governmental or non-defined retirement benefit entitled employees" (Opinion on Decision, p. 3).

The WCJ described various ways in which he could apply the expert's findings of DFEC of 25%. The WCJ concluded that it would be most reasonable to increase by 25% the monetary value of the applicant's 6% permanent disability of \$3,960.00. A 25% increase would result in \$4,950.00, which is what the WCJ ordered, noting, "This approach is in keeping with the letter and the spirit of Legislature, while accounting for applicant's rebuttal evidence concerning her specific diminished future earnings" (Opinion on Decision, pp. 4, 5). Finally, the WCJ's decision was silent regarding the issue of payment of the DFEC expert's fee.

*Lyngso Garden Materials, Inc., et al. v. WCAB, et al. (Ruiz) (2007)*

In this decision, the Court of Appeal ruled that the WCJ and the WCAB incorrectly applied the 1997 *Schedule*. The matter was returned to the lower

court for a new trial on the issue of DFEC. The Court of Appeal upheld the WCJ's assessment of DFEC expert fees as an item of costs.

In reviewing all of the above court decisions in combination, one can see that there is no consensus among the WCJs and the WCAB regarding how they applied the opinions of DFEC experts. At the same time, several observations can be made from these court decisions. One is that courts commonly accept the testimony of DFEC experts regarding DFEC. Another is that they commonly order defendants to pay the applicant's DFEC expert's fees as an expense under Labor Code § 5811. In addition, some courts have relied on the testimony of the DFEC expert to rebut the *Schedule* and replace the *Schedule* rating with the percentage of DFEC identified by the DFEC expert, or some related figure. At the same time, other courts have rejected the opinions of the DFEC expert regarding DFEC and have concluded that the *Schedule* rating is appropriate. These observations regarding the use of DFEC expert testimony in attempting to rebut the *Schedule* appear to be consistent with the conclusions of the WCAB in *Costa v. Hardy Diagnostic* (2006) in which the *en banc* panel concluded that, "the effect, if any of the changes to section 4660 as to what evidence may actually rebut a rating under the new PDRS will be decided, at least initially, on a case by case basis" (Opinion and Decision after Reconsideration, *En Banc*, p. 26).

#### Summary of DFEC Evaluations using the WCEC Formula

This section will summarize the results of 31 DFEC evaluations that were completed by Eugene E. Van de Bittner, Ph.D., CRC and Maria I. Toyofuku, M.S., CRC from January 14, 2006 to September 27, 2007 at the Walnut Creek, California office of Mirfak Associates, Inc. Table 1 summarizes the source of case referrals. Most of the referrals, 55% were from applicants' attorneys, while 35% were from defense attorneys, and the remainder were agreed upon by the parties.

Table 1

*Referral Source*

Source	n	%
Applicant	17	54.84
Defendant	11	35.48
Agreed	3	9.68

Table 2 summarizes the type of DFEC evaluation. For Work History Only evaluations, there was no interview or vocational testing with the applicant. The primary components of the evaluation included the applicant's work history, wages, and medical restrictions.

By contrast, a comprehensive DFEC evaluation included an interview and vocational testing. A third category, entitled "Comprehensive and *LeBoeuf*" included a comprehensive DFEC evaluation combined with an evaluation of diminished ability to compete in an open labor market under the prior workers' compensation law.

Table 2

*Type of DFEC Evaluation*

Evaluation	n	%
Work History Only	4	12.90
Comprehensive	23	74.19
Comprehensive and <i>LeBoeuf</i>	4	12.90

As indicated in Table 2, the majority of the evaluations included a comprehensive evaluation, representing 74% of the total. The remainder were equally distributed between Work History Only and Comprehensive and *LeBoeuf* evaluations.

The DFEC expert needs to determine the applicant's pre-injury earning capacity. Three distinct bases of pre-injury earning capacity were observed in the analysis of the DFEC evaluations that were studied, with the results shown in Table 3. A fourth basis of pre-injury earning capacity, expected earnings, was considered, but no cases in the study fell into this category. In summary, the four ways in which pre-injury earning capacity was established are outlined as follows:

1. The actual earnings of the applicant at the date of injury, often reflected by the average weekly wage for one year, pre-injury.

2. The average wage for several years of employment prior to the date of injury where the applicant had variable wages from one year to the next.
3. The highest wage in the applicant's work history.
4. The expected future wage of an applicant in the early stages of a career at the time of injury.

Table 3

<i>Basis of Pre-injury Earning Capacity</i>		
Earnings Type	n	%
Actual earnings at DOI or AWW	23	74.19
Average earnings for several years	8	25.81
Highest earnings in work history	2	6.45
Expected earnings	0	0

As indicated in Table 3, in 74% of the cases, the actual earnings at the date of injury, usually reflected by the average weekly wage as determined by the claims administrator, were used as the basis for pre-injury earning capacity. The next largest category, representing 26% of cases, used average earnings for several years as the basis of pre-injury earning capacity. In 6% of the cases, the highest wage in the applicant's work history was used as a basis of pre-injury earning capacity. There were no cases that used expected earnings as the basis of pre-injury earning capacity. Two of the cases involved multiple scenarios of pre-injury earning capacity.

The final issue addressed was the basis of post-injury earning capacity. Table 4 shows the basis of post-injury earning capacity for the DFEC evaluations. Three distinct ways of determining the basis of post-injury earning capacity were used, as follows:

1. The actual return to work wage of applicants that had returned to work prior to the time of the DFEC evaluation.
2. A total labor market access (LMA) approach. Under this approach, post-injury earning capacity is the wage of the highest paying occupation or group of occupations, for

which the applicant has some or all of the skills needed to qualify for employment, based on the results of a comprehensive transferable skills analysis.

3. The most suitable jobs approach. Under this approach, post-injury earning capacity is the average wage of the occupation or group of occupations determined to be the most suitable for the applicant through a comprehensive vocational rehabilitation evaluation.

Table 4

*Basis of Post-injury Earning Capacity*

Earnings Type	n	%
RTW wage	2	6.45
Total LMA	25	80.65
Most suitable job(s)	10	32.26

The results at Table 4 indicate that the most common basis of post-injury earning capacity was the highest paying occupation or group of occupations for which the applicant had some or all of the skills needed to qualify for employment, resulting from a comprehensive transferable skills analysis. This total LMA basis of post-injury earning capacity represented 81% of the cases studied. For 32% of the cases, post-injury earning capacity was based on the average wage of occupations determined to be most suitable for the applicant through a comprehensive vocational rehabilitation evaluation. Finally, in 6% of the cases, the basis of post-injury earning capacity was the actual return to work wage for the two applicants that had returned to work prior to the DFEC evaluation.

Case Analyses Using Van de Bittner's WCEC Formula

Five of the 31 DFEC evaluations were selected to illustrate the methodology used by the DFEC expert to calculate an empirically valid percentage of DFEC. The sample of DFEC evaluations selected address key

assumptions and unique features identified in evaluating DFEC. In order to maintain confidentiality, each of the cases below is identified by a pseudonym. The calculation of DFEC using the WCEC Formula is included below for the first DFEC evaluation. The DFEC calculations for the remaining evaluations are not included.

1. *Barry Johnson*

Barry Johnson was referred jointly by the parties for an agreed DFEC evaluation. This was a comprehensive DFEC evaluation. Mr. Johnson was a 44-year-old union plumber and pipefitter when he experienced a low back injury in 2004. His restrictions included no lifting over 25 pounds routinely and no "single lifts" of 40 to 45 pounds more than 1-2 times per day. He was precluded from repetitive, prolonged bending and stooping, prolonged sitting, and repetitive, forceful twisting of the trunk or lower back.

Mr. Johnson had been a plumber all of his working life. His earnings varied from year to year, as he experienced periods of unemployment. The method for establishing pre-injury earnings was the average of the last five complete years of earnings reported on his Social Security Statement (1998 – 2003). This yielded the figure \$65,745.00 or \$31.61 per hour (wages at DOI – 2004--normalized to 2006 dollars by a consulting economist).

Testing revealed that Mr. Johnson had high ability, aptitude, and achievement, scoring above the 12<sup>th</sup> grade for English reading comprehension and mathematics, with an IQ of 118 (WASI). His mechanical comprehension was at the 88<sup>th</sup> percentile (Bennett Mechanical Comprehension Test). A computerized transferable skills analysis yielded 1,742 job matches where Mr. Johnson had some degree of transferability of skills and which he could physically perform. The expert had to decide which occupation to choose as the basis of post-injury earnings.

Mr. Johnson himself had largely solved that problem by having secured employment in an occupation which was high on the list of job matches regarding transferability of skills: meter reader with a local utility company. Therefore, the basis of post-injury earning capacity was his return to work wage at this occupation. A concern in this case was that the position, which paid \$15.11 per hour, was a part-time, entry-level position. However, it was a union position which provided employment benefits similar to his pre-injury occupation. Through research with the utility company, it was learned that Mr. Johnson would be able to advance according to various classifications based on work experience. It was also anticipated that his

part-time, temporary position would become full-time and permanent within two years. A pay scale was available on-line from the new employer.

This assisted in the calculation of post-injury earning capacity. First, worklife expectancy was established: 17.7 years from date of maximum medical improvement (7/10/06), using published life expectancy tables (Skoog & Ciecka, 2001). Next, entry-level, part-time wages were calculated for the first two years: (7/10/06 – 7/09/08). It was assumed that Mr. Johnson would start full-time work at the middle of the pay scale, or \$24.56 per hour. His wages were expected to advance to the 75<sup>th</sup> percentile, or \$27.53 per hour, after 4.5 years. After calculations were completed, considering his pre-injury earnings of \$31.61 per hour, a DFEC of 25.13% was established.

Whatever the impairment rating from a medical standpoint, a disability rating needs to reflect the true difference between pre-injury and post-injury earning capacity. In this case, the comparison of wages was very realistic.

But what if Mr. Johnson had not secured the meter reader position? In the report, the DFEC expert provided an alternate scenario. A total LMA approach was used as the basis for post-injury earning capacity for the alternate scenario. The highest paying job match on the transferable skills analysis was used in this scenario. The analysis of DFEC under this scenario was based on several assumptions, as outlined below:

- Assume post-injury earning capacity to be the wage of the highest paying occupation for which Mr. Johnson has some transferable skills, but which would still require vocational training. This position turned out to be that of technical coordinator.
- Assume no wages for 1 year for training and job placement activities.
- Assume entry-level wages for the first three years reported at \$14.49 per hour, based on occupational statistics by U.S. Bureau of Labor Statistics.
- Assume earnings would increase to the 50<sup>th</sup> percentile after three years, or \$24.98 per hour.

Calculations yielded a DFEC of 22.56%. When adding vocational training expenses, including tuition and counseling services, the DFEC increased to 23.19%.

The DFEC calculations under both scenarios are printed from Mr. Johnson's report below to illustrate the use of the WCEC Formula.

Diminished Future Earning Capacity Analysis – Direct Job Placement Scenario: Meter Reader

Mr. Johnson's diminished future earning capacity (DFEC) was calculated through the earning capacity component of the *McCroskey Transferable Skills Program* and the *WCEC Formula* developed by Eugene E. Van de Bittner, Ph.D., both using a numeric formula based on empirical data that aggregate the average percentage of long-term loss of income for Mr. Johnson when compared with similarly situated employees.

Meter reader was used as the direct job placement occupation for the DFEC evaluation since Mr. Johnson had already returned to work in this capacity on a temporary basis and anticipated that he would be hired in a permanent position within 1 to 2 years. In addition, from all information currently available, this occupation appears to be most suitable for Mr. Johnson from a vocational rehabilitation standpoint.

As a part of this analysis, job matches were used from the transferable skills analysis through the *McCroskey Transferable Skills Program*. Meter reader was one of the job matcher. Meter reader was also seen as more attainable than the other job matches.

I. Worklife Expectancy

- A. Date Mr. Johnson returned to work as a meter reader: 7/10/06
- B. Age on 7/10/06: 45 years, 11 months
- C. Worklife expectancy at 7/10/06: 17.7 years (Skoog & Ciecka, 2001)

## II. Pre-injury Earning Capacity

- A. Wage at DOI, adjusted to 2006 dollars: \$65,745 per year or \$31.61 per hour (average wages from 1998-2003, from Social Security Earnings Report. See the attached Earnings History and U.S. Department of Labor Bureau of Labor Statistics data.)
- B. Assume Mr. Johnson's pre-injury earning capacity was equal to his historical wages from 1998-2003. Assume that his usual and customary job at date of injury was the highest paying job to which he had access.
- C. Assume benefits as a percentage of wages to be comparable pre-injury and post-injury.

## III. Post-injury Earning Capacity-Meter Reader

- A. A total LMA approach was considered and the wage of a meter reader was seen as representing Mr. Johnson's post-injury earning capacity.
- B. Mr. Johnson's actual wage as a meter reader was used for this scenario.
- C. Assume post-injury earning capacity to be the wage for a meter reader.
  - 1. Assume Mr. Johnson will work as a temporary meter reader for 2 years, from 7/10/06 to 7/9/08, at an average of 28 hours per week.
  - 2. Assume Mr. Johnson will work as a full-time, permanent meter reader effective 7/10/08. He will reach Step 6 in the Salary Schedule after 4.5 years of permanent, full-time employment, or on approximately 1/1/13.

D. Benefits are assumed to be comparable post-injury, compared with pre-injury.

E. Hourly wage as of 1/1/13: \$27.53

F. Average hourly wage 7/10/06 -7/9/08 adjusted to 40 hours per week: \$15.11

G. Average hourly wage from 7/10/08 -1/1/13:

1. Wage as of 7/10/08: \$21.58

2. Wage as of 1/1/13: \$27.53

3. Average hourly wage after 4.5 years as of 1/1/13: Step 1 wages are assumed to advance to Step 6 wages in 4.5 years. Therefore, the average hourly wage for the first 4.5 years is

$\$21.58 + \$27.53 \div 2$  \$24.56

H. Wages for remainder of worklife, post-injury:

17.7 years - 6.5 years = 11.2 years: \$27.53

#### IV. DFEC Calculation – Meter Reader

A. Wages for first 2 years from 7/10/06 -7/9/08:

$\$15.11 \times 2,080 \times 2$  years: \$ 62,857.60

B. Wages for next 4.5 years, from 7/10/08 – 1/1/13:

$\$ 24.56 \times 2,080 \times 4.5$  years: \$229,881.60

C. Plus wages for the next 11.2 years:

$\$27.53 \times 2,080 \times 11.2$  years: \$641,338.88

D. Equals total FEC

(post-injury earning capacity)	\$871,220.48
E. Pre-injury earning capacity, beginning at the RTW date as a Journeyman Plumber, on 7/10/06:	
\$65,745 x 17.7 years:	\$1,163,686.50
F. Less post-injury earning capacity:	\$871,220.48
G. Equals DFEC:	\$292,466.02
H. Percentage of DFEC (292,466.02/1,163,686.50):	25.13%

Through this analysis, which assumes Mr. Johnson will continue to work as a Meter Reader, his DFEC is 25.13%.

Diminished Future Earning Capacity Analysis – Training Scenario: Highest Paying Occupation

Mr. Johnson's diminished future earning capacity (DFEC) was calculated through the earning capacity component of the *McCroskey Transferable Skills Program* and the *WCEC Formula* developed by Eugene E. Van Bittner, Ph.D., both using numeric formulas based on empirical data that aggregate the average percentage of long-term loss of income for Mr. Johnson when compared with similarly situated employees.

It was assumed that Mr. Johnson had been working at the highest paying occupation available to him at the time of injury. It was also assumed for this scenario that he would pursue the highest paying occupation for which he has some of the transferable skills post-injury and that he would require vocational training to acquire the rest of the skills.

I. Worklife Expectancy

A. Mr. Johnson reached MMI on 7/13/05.

Age at MMIL 44 years, 10.5 months.

- B. Worklife expectancy at MMI: 18.8 years (Skoog & Ciecka, 2001)

## II. Pre-injury Earning Capacity

- A. Wage at DOI, in 2004 dollars: \$61,287 or \$29.46 per hour (based on average wages from 1998-2003, from Social Security Earnings Report. See attached Earnings History and U.S. Department of Labor Bureau of Labor Statistics data.)
- B. Assume that Mr. Johnson's pre-injury earning capacity was equal to his historical wages from 1998-2003. Assume that his usual and customary job at the date of injury was the highest paying job to which he had access.
- C. Assume benefits as a percentage of wages to be comparable pre-injury and post-injury.

## III. Post-injury Earning Capacity – Highest Paying Occupation with Some Transferable Skills: Technical Coordinator

- A. A total LMA approach was used considering the wages of all occupations in the local economy for which Mr. Johnson has at least some transferable skills.
- B. The earning capacity component of the *McCroskey Transferable Skills Program* and the *WCEC Formula* were used to calculate post-injury earning capacity.
- C. Assume post-injury earning capacity to be the wage of the highest paying occupation for which Mr. Johnson has some of the transferable skills (and would require vocational training). This was identified as the occupation of Technical Coordinator.
- D. Benefits are assumed to be comparable pre-injury and post-injury.

E. Hourly earnings at return-to-work date through *MTSP* for Technical Coordinator. \$14.49

Mr. Johnson's wages are expected to reach the median level after 3 years of new employment.

F. Wages during training and job search (one year) \$0.00

G. Average hourly earnings for the first 4 years:

1. Entry-level wages for the highest paying occupation in 2004 (technical coordinator) \$ 14.49

2. Earnings after 3 years: \$24.98

3. Earnings during training and job search: \$0.00

4. Average hourly earnings for the first 4 years

Entry-level earnings are assumed to advance to the median level after 3 years of new employment. Therefore, average earnings for the first 3 years, plus 12 months of training and job search are:

$$\$14.49 + \$24.98 \div 2 = \$19.74 \times 3 \text{ yrs} \div 4 \text{ yrs} \quad \$14.81$$

H. Earnings for remainder of worklife, post-injury:

$$18.8 \text{ yrs} - 4 \text{ yrs} = 14.8 \text{ yrs} \quad \$24.98$$

#### IV. DFEC Calculation

A. Wages for first 3 years, plus 12 months of training and job search:	
\$14.81 x 2,080 hrs/yr x 4 yrs	\$123,219.20
B. Plus wages for the next 14.8 years:	
\$24.98 x 2,080 x 14.8 yrs	\$768,984.32
C. Equals total FEC (post-injury earning capacity):	\$892,203.52
D. Pre-injury earning capacity beginning at MMI date:	
\$61,287 x 18.8 yrs:	\$1,152,195.60
E. Less post-injury earning capacity:	\$892,203.52
F. Equals DFEC:	\$259,992.08
G. Percentage of DFEC:	22.56%

Through this analysis, which assumes a need for vocational training, it was learned that Mr. Johnson's diminished future earning capacity is 22.56% when considering the medical restrictions reported by the physicians.

When considering training costs of an average of \$800.00 per month for nine months, Mr. Johnson's DFEC increases to 23.19%.

The validity of these approaches to analyzing DFEC is supported by the similarity of the results of the two methods presented. One analysis provides a DFEC of 25.1% (using actual pre- and post-injury wages) and the other provides a DFEC of 23.19% (using occupational statistics through the *MTSP*).

#### 2. *Juan Garcia*

Juan Garcia was referred by the applicant's attorney for a comprehensive DFEC evaluation. Mr. Garcia was a 55-year-old, Spanish-speaking material handler at a food processing plant when he suffered a low back injury. His

work restrictions included no heavy lifting and no repeated bending and stooping. His wages at the time of injury were \$9.51 per hour. Mr. Garcia had a 4<sup>th</sup> grade education in Mexico, and no additional formal education.

Mr. Garcia tested at the 5<sup>th</sup> grade level in math, and could not complete any English testing, revealing no English language achievement. His IQ was 73 (Beta III). A transferable skills analysis yielded five job matches:

- Paper-pattern folder
- Housekeeping cleaner
- Burr grinder
- Opener
- Conveyor line bakery worker

The actual earnings at the date of injury were used as the basis of his pre-injury earning capacity. His worklife expectancy at the date of maximum medical improvement was estimated to be 6.31 years using worklife expectancy tables (Skoog & Ciecka, 2001). A total LMA approach was used, considering the wage of the job matches with some transferable skills. This occupation (opener) was used as the basis of his post-injury earning capacity. Entry-level wages were \$6.88 per hour. At the time, the minimum wage in California was \$6.75 per hour.

After three years, Mr. Garcia was expected to advance to the 50<sup>th</sup> percentile in regard to wages. Based on occupational statistics, work as an opener pays \$10.29 per hour at the 50<sup>th</sup> percentile. A key assumption was made here: Mr. Garcia does not fit the "average worker" profile given his pre-injury earning capacity, testing, skills, and cultural variants. Therefore, if it were possible for him to secure work as an opener, his maximum post-injury earnings would be consistent with his pre-injury earning capacity of \$9.51 per hour. This assumption has been made on all cases where occupational statistics suggest that a new occupation would yield higher wages than pre-injury wages. A worker does not experience an increase in earning capacity as a result of an injury. A worker is not "better off" for having been injured. The outcome of the analysis was a DFEC of 14.46%.

### 3. *Alice Jones*

Alice Jones was referred by the defense attorney for a comprehensive DFEC evaluation. Ms. Jones was a general laborer in a unionized, government position in a public works department. She was 51 years old at

the time of an industrial injury to her lower back. Academically, she was a high school graduate with two years of college studies but no degree. She had received training as a CNA but never worked in the field. She had completed additional vocational training in environmental technology (janitorial), gardening, and construction.

As a result of her injury, Ms. Jones was precluded from lifting over 25 pounds, and was limited to occasional bending, stooping, and squatting. Testing revealed that she functioned at the 8<sup>th</sup> grade level for English reading comprehension and at the 4<sup>th</sup> grade level for arithmetic. She had an estimated full scale IQ of 74. Hand and finger dexterity were very low at the 1<sup>st</sup> percentile (Purdue Pegboard, Minnesota Rate of Manipulation Tests).

A transferable skills analysis revealed no job matches. Assuming a low level of manual dexterity, there were 36 job matches. This assumption was made based on her employment history where manual dexterity was required as a street cleaner and the fact that there were no medical restrictions related to her hands or fingers. The job matches included

- Newspaper carrier
- Locker room attendant
- School bus monitor
- Ticket taker
- Assembler

Her wage at the time of injury was \$14.31 per hour. Her worklife expectancy was established at 10.05 years (Skoog & Ciecka, 2001). Post-injury wages were determined by a total LMA approach, using newspaper carrier as the highest paid occupation for which she had transferable skills. Entry-level wages were \$11.13 per hour and occupational statistics showed that after three years, at the 50<sup>th</sup> percentile, earnings were \$17.33 per hour. Following the same methodology explained above, the assumption was made that after two years her wages would increase to her pre-injury earning capacity of \$14.31. After the calculations, a DFEC of 15.36% was obtained.

Interestingly, Ms. Jones' wage at the time of injury was not the highest reported wage in her work history. It was learned that she earned \$21.03 per hour as of 2004, but due to budget issues and negotiations with her union, she had accepted a substantial pay cut to \$14.31 per hour in order to keep her job. Therefore, Ms. Jones' earning capacity from jobs in her employment history was \$21.03 per hour. This was the highest wage for which she had demonstrated the capacity to earn. Therefore a second scenario was established using \$21.03 per hour as the basis of pre-injury earning capacity. As with the first scenario, the occupation of newspaper carrier was selected

as the basis of her post-injury earning capacity. However, this time, following the initial \$11.13 per hour entry-level wage, it was assumed that Ms. Jones would reach \$17.33 per hour after three years, since her pre-injury capacity was higher under this scenario. The resulting DFEC was 32.75%.

This case exemplifies the variance that can be found within the concept of "earning capacity." Actual wages at the time of injury, in this case, were not representative of Ms. Jones' earning capacity, as she had earned considerably more in the recent past. Indeed, economic factors beyond the control of the individual (i.e., local labor market conditions, downturns in industry, union contracts in this case) affect earning capacity as much as the individual's occupational choices, aptitudes, level of skill, education, and career progression.

#### 4. *Rex Smith*

Rex Smith was referred jointly by the parties for an agreed DFEC evaluation. This was a comprehensive DFEC evaluation. Mr. Smith was a 46-year-old sales representative working for a beverage company at the time of injury. He was a high school graduate with two years of college, but no degree. Before the evaluation he had enrolled in helicopter pilot training at his own direction, and had completed most of the training by the time of the evaluation.

Mr. Smith incurred right knee and left shoulder injuries, and was precluded from very heavy lifting, climbing, walking over uneven ground, squatting, kneeling, crouching, crawling, pivoting, and other activities involving comparable physical effort. He had a varied employment history: two years as carpenter, one year as a sign painter, two years as a clerk and framer for a picture frame store, bartender, assistant manager at a fast food restaurant, installer/network technician for an electronics company, LAN network technician for a technology company, and network engineer. His earnings peaked at \$82,000.00 per year while employed as a network engineer. However, when the technology bubble burst in 2000, Mr. Smith lost that job, returned to a job as an assistant manager at a restaurant, and eventually worked as a sales representative for a beverage company.

His wage history, as a result, was shaped like a bell curve, with a spike in the year 2000. His earnings at the time of injury were \$21.29 per hour. The parties stipulated to this wage. The agreed DFEC expert concurred with this assessment of his pre-injury earning capacity since for the previous five years

Mr. Smith had been unable to find employment as a network engineer. He also had been unsuccessful in advancing to a sales management position, despite repeated attempts. Therefore, it was assumed that his pre-injury earning capacity was \$37,896.00 per year. An analysis of 15 years of wages revealed that this was close to his average wage for that period.

Testing revealed that Mr. Smith had good ability, aptitude, and achievement, with above 12<sup>th</sup> grade level English reading comprehension, 11<sup>th</sup> grade level arithmetic computation, a full scale IQ of 111, and high average clerical aptitude. A transferable skills analysis identified 1,569 occupations for which he had some or all of the skills to perform work. Examples of job matches included

- Food services director
- Network control operator
- Fast food services manager
- Food service manager
- Hand painter

His worklife expectancy was determined to be 15.40 years (Skoog & Ciecka, 2001). Since Mr. Smith had completed most of his helicopter pilot training, this occupation was chosen as the post-injury occupation. He had a serious commitment to this objective: tuition alone was \$55,000.00, in addition to ancillary expenses (more flight time and simulation time, extensive travel, etc., which was estimated at \$22,000.00 in additional expenses). There were additional factors that made this a plausible vocational objective for Mr. Smith. He had served in the U.S. Air Force for three years in the intelligence division, and was familiar with the industry. His duties included making combat mission folders for B-52 airplanes. Additionally, his father was a commercial pilot. Finally, Mr. Smith had already completed 130 hours of flight time of the required 200 hours for graduation. In short, he was committed and on his way to becoming a helicopter pilot.

The local labor market for helicopter pilots was researched, and it was learned that Mr. Smith had a job waiting for him as a flight instructor, as a full-time paid employee, upon completion of training. This information was verified. Entry-level wages were \$18.00 per hour with advancement to \$25.00 per hour within six months.

At \$25.00 per hour after six months, Mr. Smith would surpass his established pre-injury earning capacity at that time (\$21.29 per hour). Therefore, it was determined that Mr. Smith would match his pre-injury

earnings after six months of new employment. Once calculations were completed, it was learned that Mr. Smith had a DFEC of 23.88%.

#### 5. *Jason Frost*

Jason Frost was referred by the applicant's attorney for a comprehensive DFEC and *LeBoeuf* evaluation. Mr. Frost was a 54-year-old forklift operator who had worked for the same employer for 30 years. He developed a continuous trauma injury to his neck, back, and arms. In addition, he became depressed.

Mr. Frost had an 8<sup>th</sup> grade education. He was limited to semi-sedentary work with occasional cervical motion and no sustained awkward positioning of the neck. In addition, he was assigned an overall slight psychiatric impairment.

Testing results revealed that Mr. Frost read at the 4<sup>th</sup> grade level and had 3<sup>rd</sup> grade math skills. His full scale IQ was 67. Dexterity tests revealed that he was at the 1<sup>st</sup> percentile (Purdue Pegboard, Minnesota Rate of Manipulation Tests). A transferable skills analysis yielded no job matches.

His earnings at the time of injury were \$21.29 per hour. His actual earnings were used as the basis of his pre-injury earning capacity. His worklife expectancy was 6.58 years from the date of maximum medical improvement.

The DFEC expert concluded that given the results of the vocational rehabilitation evaluation, it was unlikely that Mr. Frost would be able to return to competitive employment. This was due to a combination of medical, psychiatric, and vocational factors, even when considering vocational rehabilitation or retraining options. As a result, Mr. Frost's DFEC was 100%, or permanent total disability.

Finally, discount rates related to productivity forecasts and rates of inflation were not typically considered in the DFEC evaluations described in this article. The WCEC Formula expressed as a percentage of earning capacity does not require such analysis. Further, this matter is best addressed by a consulting economist. Nevertheless, in two cases, wages were normalized for wage inflation in consultation with an economist.

## Conclusions and Implications for Practice

A review of the results of 31 DFEC evaluations indicates that the majority were initiated by the applicant's attorney. This is not surprising since the applicant has the greatest interest in rebutting the FEC adjustment factor in the *Schedule*. At the same time, 35% of the referrals were from defendants. Also, most of the DFEC evaluations involved a comprehensive evaluation including, among other things, an interview and vocational testing with the applicant. In some cases, the DFEC expert was not permitted by the applicant's attorney to interview and test the applicant. Also, in some cases, a Work History Only evaluation was requested by the referring attorney.

In terms of the basis of pre-injury earning capacity, the actual earnings at the date of injury were used in the majority of cases. A total LMA approach was used most frequently as the basis of post-injury earning capacity. This approach was seen as most effectively satisfying the need for an empirical analysis of DFEC.

A review of court decisions to date regarding DFEC revealed that in most cases, the court admitted the report and testimony of the DFEC expert and ordered that the expert's fee be paid by the defendant. In some cases, the court ruled that the DFEC expert's opinion was insufficient to rebut the *Schedule* rating, while in many other cases the court determined that the applicant was successful in rebutting the *Schedule*. In those cases where the applicant was successful in rebutting the *Schedule*, the way in which the DFEC expert's opinion was used in determining the final permanent disability rating varied from court to court. In some cases, the court substituted the *Schedule* rating with the actual percentage of DFEC, while in other cases the court in various ways combined the *Schedule* rating for the medical impairment with the actual percentage of DFEC.

Many of the courts were critical of the methodology and level of preparation of DFEC experts. At a minimum, this suggests DFEC experts must ensure that they carefully analyze each case while following an established methodology that includes an empirical formula for calculating DFEC that complies with the requirements of Labor Code § 4660. Rehabilitation counselors and vocational experts who wish to function as DFEC experts, need to have, at a minimum, a thorough knowledge of how the new *Schedule* was developed and is currently being implemented, as well familiarity with the court decisions summarized in this article. A thorough review of the RAND and the CHSWC studies is strongly recommended in order to understand the empirical basis for FEC adjustment factors in the *Schedule*. Applying a peer-reviewed, published methodology consistently,

whether retained by the defendant or the applicant, is another strong recommendation.

Finally, the authors would welcome additional review and comment, particularly from vocational experts outside of California, to develop a similar approach to calculate loss of earning capacity in other legal arenas such as personal injury, employment law, and family law. It is anticipated that the method for determining DFEC in California workers' compensation cases will have applications in other states and in other venues, such as personal injury, employment law, and family law.

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