

**Case No. 12-17668**

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**UNITED STATES COURT OF APPEALS  
FOR THE NINTH CIRCUIT**

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BEVERLY SEVCIK, et al.,

*Plaintiffs-Appellants,*

v.

GOVERNOR BRIAN SANDOVAL, et al.,

*Defendants-Appellees,*

and

COALITION FOR THE PROTECTION OF MARRIAGE,

*Intervenor-Defendant-Appellee.*

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On Appeal from the United States District Court  
For the District of Nevada  
Case No. 2:12-CV-00578-RCJ-PAL  
The Honorable Robert C. Jones, District Judge

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**PETITION OF APPELLEE  
COALITION FOR THE PROTECTION OF MARRIAGE  
FOR REHEARING EN BANC**

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**INTRODUCTION**  
**(FRAP 35(b)(1) STATEMENT)**

The October 7, 2014 panel decision of Judges Reinhardt, Gould, and Berzon (“Decision”) declared that Nevada’s constitutional and statutory provisions preserving marriage as the union of a man and a woman (“Nevada’s Marriage Laws”) are unconstitutional. In effect, that declaration threatens to change the legal meaning of marriage throughout the Ninth Circuit to the union of two persons without regard to gender. Moreover, the Decision held that the “heightened scrutiny” announced in *SmithKline Beecham Corp. v. Abbott Labs.*, 740 F.3d 471 (9th Cir. 2014), applies to all claims of sexual orientation discrimination, not just to claims based on the *Moreno-Cleburne-Romer-Windsor*<sup>1</sup> animus doctrine.

With respect to the level of judicial scrutiny applied to sexual orientation discrimination claims other than animus claims, the Decision conflicts with multiple decisions of this Court. *See, e.g., High Tech Gays v. Def. Indus. Sec. Clearance Office*, 895 F.2d 563 (9th Cir.1990) (“The plaintiffs assert that homosexuality should be added to the list of suspect or quasi-suspect classifications requiring strict or heightened scrutiny. We disagree and hold that the district court erred in applying heightened scrutiny to the regulations at issue

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<sup>1</sup> *See U.S. Dep’t of Agric. v. Moreno*, 413 U.S. 528 (1973); *City of Cleburne v. Cleburne Living Ctr.*, 473 U.S. 432 (1985); *Romer v. Evans*, 517 U.S. 620 (1995); *United States v. Windsor*, 133 S. Ct. 2675 (2013).

and that the proper standard is rational basis review.”); *Flores v. Morgan Hill Unified Sch. Dist.*, 324 F.3d 1130 (9th Cir.2003); *Philips v. Perry*, 106 F.3d 1420 (9th Cir.1997), and with the decisions of virtually all other circuits, *Cook v. Gates*, 528 F.3d 42, 61–62 (1st Cir. 2008) (same); *Thomasson v. Perry*, 80 F.3d 915, 927–28 (4th Cir. 1996) (same); *Johnson v. Johnson*, 385 F.3d 503, 532 (5th Cir. 2004) (same); *Davis v. Prison Health Servs.*, 679 F.3d 433, 438 (6th Cir. 2012) (same); *Ben-Shalom v. Marsh*, 881 F.2d 454, 464 (7th Cir. 1989) (same); *Citizens for Equal Prot. v. Bruning*, 455 F.3d 859, 866–67 (8th Cir. 2006) (same); *Price-Cornelison v. Brooks*, 524 F.3d 1103, 1113 (10th Cir. 2008) (same); *Lofton v. Sec’y of Dep’t of Children & Family Servs.*, 358 F.3d 804, 818 (11th Cir. 2004) (same); *Padula v. Webster*, 822 F.2d 97, 103 (D.C. Cir. 1987) (same); *Woodward v. United States*, 871 F.2d 1068, 1076 (Fed. Cir. 1989) (same).<sup>2</sup>

Further, by overturning the marriage laws of Nevada and Idaho, the Decision conflicts with decisions of the United States Supreme Court, *Baker v. Nelson*, 409 U.S. 810 (1972), and the Eighth Circuit, *Citizens for Equal Prot. v. Bruning*, 455 F.3d 859 (8th Cir. 2006).<sup>3</sup>

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<sup>2</sup> Only the Second Circuit has held that “intermediate scrutiny” should apply. *Windsor v. United States*, 699 F.3d 169, 180–85 (2d Cir. 2012).

<sup>3</sup> The Eighth Circuit’s *Bruning* decision in turn conflicts with the Tenth Circuit, *Kitchen v. Herbert*, 755 F.3d 1193 (10th Cir. 2014); *Bishop v. Smith*, 760 F.3d 1070 (10th Cir. 2014), the Fourth Circuit, *Bostic v. Schaefer*, 760 F.3d 352 (4th Cir. 2014), and the Seventh Circuit, *Baskin v. Bogan*, \_\_\_ F.3d \_\_\_, 2014 WL



The constitutionality of man-woman marriage is a question of historic importance. Deciding that question based on a legal standard never endorsed by the Supreme Court for claims of sexual orientation discrimination and at odds with the rational-basis standard applied by virtually every other circuit in the country was plainly erroneous.

In light of all the foregoing, en banc consideration is necessary to secure and maintain uniformity of this Circuit's decisions and to bring those decisions into harmony with the decisions of the Supreme Court and, because justified, with the decisions of the other Circuits.

*Further*—en banc review is regrettably necessary to cure the appearance that the assignment of this case to this particular three-judge panel was *not* the result of a random or otherwise neutral selection process. Troubling questions arise because a careful statistical analysis reveals the high improbability of Judge Berzon and Judge Reinhardt being assigned to this case by a neutral selection process. The attached statistical analysis, Exhibit 3, explains that since January 1, 2010, Judge Berzon has been on the merits panel in five and Judge Reinhardt has been on the merits panel in four of the eleven Ninth Circuit cases involving the federal constitutional rights of gay men and lesbians (“Relevant Cases”), far more

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4359059 (7th Cir. Sept. 4, 2014). The Supreme Court denied certiorari in those recent cases on October 6, 2014. *Bogan v. Baskin*, \_\_\_ S. Ct. \_\_\_, 2014 WL 4425162 (Oct. 6, 2014).

than any other judge and far more than can reasonably be accounted for by a neutral assignment process. Indeed, statistical analysis demonstrates that the improbability of such occurring randomly is not just significant but overwhelming. Thus, the odds are 441-to-1 against what we observe with the Relevant Cases—the two most assigned judges receiving under a neutral assignment process five and four assignments respectively (and anything more extreme).

We bring the issue of bias in the selection process to the Circuit's attention with respect and with a keen awareness that questioning the neutrality of the panel's selection could hardly be more serious. But the sensitivity of raising uncomfortable questions for this Circuit must be balanced against the interests of ordinary Nevadans, who deserve a fair hearing before a novel interpretation of constitutional law deprives them of the right to control the meaning of marriage within their State. A hearing before an impartial tribunal is, after all, a central pillar of what our legal tradition means by due process of law, and the means of selecting the tribunal certainly implicates notions of impartiality. Measures have been put in place by this Court to assign judges through a neutral process. But in this case the appearance is unavoidable that those measures failed. En banc review is necessary to ensure that the appearance of bias is cured by a fresh hearing before a panel, the selection of which is unquestionably neutral.

## **REASONS FOR GRANTING REHEARING EN BANC**

### **1. The exceptional importance of the constitutional issues implicated in a right to genderless marriage calls for en banc review.**

Early in the debate over man-woman marriage/genderless marriage, Oxford's prominent liberal legal philosopher Joseph Raz accurately observed that "there can be no doubt that the recognition of gay marriage will effect as great a transformation in the nature of marriage as that from polygamous to monogamous or from arranged to unarranged marriage."<sup>4</sup>

With its social institutional defense of man-woman marriage, the Coalition has demonstrated both the likely *adverse* consequences of that transformation and the social mechanisms causing those consequences. Paramount will be the diminution of what the literature calls the child's bonding right, which flows from the social message, expectation, ideal, and promise that, to the greatest extent possible, a child will know and be raised by her own mother and father, whose union brought her into this world and whose family and biological heritage are central and vital to the child's identity. The man-woman meaning at the core of the marriage institution, reinforced by the law, has always sustained, valorized, and made normative the child's bonding right. With its regime of "Parent A" and "Parent B," the genderless marriage institution, reinforced by the law, does just the

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<sup>4</sup> Joseph Raz, *Ethics in the Public Domain* 23 (1994).

opposite. Genderless marriage's core institutionalized meaning of "the union of two persons without regard to gender" teaches everyone—married and unmarried, gay and straight, men and women, and all the children—that a child knowing and being reared by her mother and father is neither socially preferred nor officially encouraged.

The likely and logical consequence of that teaching will be some increase in the levels of fatherlessness and motherlessness among the vast majority of children—those resulting from a man-woman relationship. When the child's bonding right fails in the lives of *those* children, there is no loving, committed same-sex couple there to provide them with wonderful parenting; rather, they are relegated to a parenting mode whose outcomes generally entail lesser child flourishing and greater social ills.

Nevada has a compelling and wholly legitimate interest in minimizing the social ills clearly attendant upon a failure of the child's bonding right, that is, attendant upon an increase in the level of fatherlessness and motherlessness in the lives of the vast majority of children.

Those adverse consequences and related compelling societal interests are exactly why this federal constitutional contest between man-woman marriage and genderless marriage is of unmatched importance. That importance is so great that

it alone rightly calls out for en banc review. But that call is even louder here because of three realities: one, the Decision's failure to honestly engage the core defense of man-woman marriage, the defense just summarized and centering on the child's bonding right; two, the unquestioned inter-circuit conflict on the standard of review applicable to sexual orientation discrimination; and three, the appearance of deviation from a neutral selection process in the assignment of this case to this three-judge panel.

**2. The Decision does not honestly engage the defense of Nevada's marriage laws.**

Simply and fairly put, the Decision distorts, evades, and elides the Coalition's defense of man-woman marriage. The Decision's characterization of that defense does not amount to even a bad caricature. The Decision "disguised the difficulties" presented by that defense, which required an outcome contrary to judicial preferences; the Decision attempted to "win the game by sweeping all the chessmen off the table." Learned Hand, *Mr. Justice Cardozo*, 52 Harv. L. Rev. 361, 362 (1939). What an eminent scholar just said of Judge Posner's opinion in the Seventh Circuit's marriage case applies fully to the Decision: "[T]he argument that Posner is said to have refuted remains compelling. His judgment is one long attempt to hide from that argument and to conceal it from his readers. In its refusal to engage the opposing argument, Posner's opinion disgraces the federal

judiciary.” John Finnis, *The Profound Injustice of Judge Posner on Marriage*, Public Discourse (October 9, 2014), <http://www.thepublicdiscourse.com/2014/10/13896/>.

**3. The Decision’s treatment of *SmithKline* creates significant conflicts within this Circuit’s jurisprudence, between this Circuit’s jurisprudence and that of the Supreme Court and nearly all other Circuits.**

Even though *Windsor* was an animus case and the sole basis for *SmithKline*’s talk of “heightened scrutiny,” the plaintiffs here urged that *SmithKline* be read as mandating quasi-suspect class, or intermediate, scrutiny for all sexual orientation discrimination claims, not just those invoking the *Moreno-Cleburne-Romer-Windsor* animus doctrine. The form of heightened scrutiny the Second Circuit decision in *Windsor* dictated is garden-variety intermediate review, *but* the Decision clearly treated *SmithKline* scrutiny as something different, as a form of heightened scrutiny without discernible boundaries in that it operates to invalidate any classification with the effect of stigmatizing gays and lesbians. Faithfully applied, the Decision thus appears to require the invalidation of every law classifying on the basis of sexual orientation, without any opportunity to justify the classification by reference to the societal interests it advances, an opportunity available even under strict scrutiny.

The Decision has thrown this Circuit onto the sharp blades of the scholarly critique made by one of the Nation's strongest advocates for gay/lesbian rights in general and genderless marriage in particular. See Dale Carpenter, *Windsor Products: Equal Protection from Animus*, 2014 The Supreme Court Review 183, 202–03, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2424743](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424743). Prof. Carpenter states that *SmithKline* “is an aggressive and incomplete reading of *Windsor*” and then goes on to demonstrate by detailed examination of *Windsor* and its history why that is so, concluding with this:

. . . *Windsor* stands outside the conventional tiers-of-scrutiny analysis. In cases where the Court has found animus, it does not engage in the usual equal protection review. A specialized form of review peculiar to animus cases applies. . . . [T]he Ninth Circuit in *SmithKline Beecham Corporation* failed to attribute any independent weight to the animus analysis. That is an error that can no longer be justified.

*Id.* (footnotes omitted).

**4. The appearance is strong and inescapable that the assignment of this case to this three-judge panel was not done through a neutral process but rather was done in order to influence the outcome in favor of the plaintiffs.<sup>5</sup>**

***a. The Ninth Circuit's public commitment to a neutral process to match judges and cases.***

All circuits, including the Ninth, are committed to a neutral process<sup>6</sup> to match judges and cases, that is, a process that precludes the assignment of

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<sup>5</sup> This subsection is supported by the attached affidavits of Dr. James H. Matis and Monte Neil Stewart and the four attached exhibits.

particular judges to particular cases with an intent to thereby influence the outcome—what is sometimes called “panel packing.” *See, e.g.*, J. Robert Brown, Jr. & Allison Herren Lee, *Neutral Assignment of Judges at the Court of Appeals*, 78 Tex. L. Rev. 1037 (2000) (“*Neutral Assignment*”).

The virtue of a neutral process is self-evident, as is the injury to the justice system when there are deviations from it.

The random assignment of cases, and the random reassignment in the event of disqualification, has the obvious, commonsensical and beneficial purpose of maintaining the public’s confidence in the integrity of the judiciary. This purpose is defeated when cases or motions are assigned, or reassigned, to judges who are handpicked to decide the particular case or motion in question. A system of random assignment is purely objective and is not open to the criticism that business is being assigned to particular judges in accordance with any particular agenda.

*Grutter v. Bollinger*, 16 F. Supp. 2d 797, 802 (E.D. Mich. 1998); *see also Neutral Assignment*, 78 Tex. L. Rev. at 1066.

Serious deviations from a neutral process do occur. Perhaps the best known instance occurred in the “old” Fifth Circuit when key actors in that court engaged in panel packing of both circuit panels and three-judge district courts to assure a particular outcome in civil rights cases. *See Neutral Assignment*, 78 Tex. L. Rev.

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<sup>6</sup> *See Jenkins v. Bellsouth Corp.*, 2002 WL 32818728, at \*6 n.20 (N.D. Ala. Sept. 13, 2002) (discussing the meaning of “neutrality” and “randomness” in this context).



at 1044–65; Todd C. Peppers et. al., *Random Chance or Loaded Dice: The Politics of Judicial Designation*, 10 U. N.H. L. Rev. 69, 69–71 (2012). The use of statistics helped uncover that deviation. *See Neutral Assignment*, 78 Tex. L. Rev. at 1050–64.

***b. The appearance of departure from a neutral process.***

From January 1, 2010, to the present, this Court has assigned to merits panels eleven<sup>7</sup> cases involving the federal constitutional rights of gay men and lesbians, what we refer to as the Relevant Cases. They are listed and described in Exhibit 1. Judge Berzon has been on five of those panels. *Id.* Judge Reinhardt has the next highest number, with four panel assignments. *Id.* With two, Judges Schroeder, Thomas, and Alarcón are the only other judges with more than one assignment. *Id.* Seventeen, including District Judge Bennett, received one assignment. *Id.* Eighteen of the judges with active status during any part of the relevant time period received none.

Careful statistical analysis indicates a high likelihood that the number of Judges Reinhardt and Berzon’s assignments to the Relevant Cases, including this and the Hawaii and Idaho marriage cases (which we treat as one for these purposes), did *not* result from a neutral judge-assignment process. That careful

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<sup>7</sup> Treating the Nevada, Idaho, and Hawaii marriage cases as *one* for purposes of this count.

analysis is set forth in the attached report of Dr. Matis (“Report”), Exhibit 3. The Report’s careful statistical analysis shows a substantial and significant bias in the selection process, centering on Judges Reinhardt and Berzon.

*c. The appearance of favoring one side.*

Judges Reinhardt and Berzon are publicly perceived to be favorably disposed to arguments for expanding the rights of gay men and lesbians, more so than all or nearly all other judges in this Circuit. That perception gives rise to an appearance of an uneven playing field. That perception is reinforced by, one, the unremarkable observation that experienced and informed lawyers would readily assess this panel as one quite congenial to the plaintiffs in these marriage cases and just the opposite to the parties defending man-woman marriage;<sup>8</sup> and, two, since the announcement of this three-judge panel on September 1, 2014, the consistent public commentary to the effect that, for the plaintiffs, this panel is the most favorable panel possible.<sup>9</sup>

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<sup>8</sup> See the attached affidavit of Monte Neil Stewart at paragraph 6.

<sup>9</sup> See, e.g., *9th Circuit gets best possible panel for marriage equality*, Daily Kos, Sept. 1, 2014, <http://www.dailykos.com/story/2014/09/01/1326347/-9th-Circuit-gets-best-possible-panel-for-marriage-equality> (noting that same-sex couple plaintiffs “hit the jackpot” with Ninth Circuit panel assigned to review the Idaho, Nevada and Hawaii marriage cases); Scottie Thomaston, *Liberal three-judge panel picked to hear marriage cases in Ninth Circuit next week*, Equality on Trial, Sept. 2, 2014, [http://equalityontrial.com/2014/09/02/liberal-three-judge-panel-ninth-circuit-judges-picked-hear-marriage-cases-next-week/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=liberal-three-judge-panel-ninth-circuit-judges-](http://equalityontrial.com/2014/09/02/liberal-three-judge-panel-ninth-circuit-judges-picked-hear-marriage-cases-next-week/?utm_source=rss&utm_medium=rss&utm_campaign=liberal-three-judge-panel-ninth-circuit-judges-)

***d. This Circuit's need to remedy the appearance of unfairness.***

The problem to be remedied is the *appearance* of unfairness. *See generally Liljeberg v. Health Servs. Acquisition Corp.*, 486 U.S. 847, 860 (1988); *Liteky v. United States*, 510 U.S. 540, 548 (1994). When that appearance is present, it does not matter that “the judge actually has no interest in the case or . . . the judge is pure in heart and incorruptible.” *Liljeberg*, 486 U.S. at 860 (quotation marks omitted). Thus, it does not matter whether Judge Reinhardt or Judge Berzon played any conscious role in the particular acts causing their many assignments; what matters is the vivid appearance of a deviation from the Circuit’s neutral selection process.

The appearance of unfairness is not a close question here. Even without the aid of professional statisticians, a reasonable person will immediately sense that something is amiss when one judge out of more than thirty is assigned over a four

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picked-hear-marriage-cases-next-week (noting that the three judges on this panel are “considered to be some of the most liberal appeals court judges in the country” and that the make-up of the panel “makes it even less likely” that the state laws at issue would be upheld); Carlos Santoscoy, *Ninth Circuit Announces Judge Panel to Hear Gay Marriage Cases From Nevada, Idaho, Hawaii*, On Top Magazine, Sept. 2, 2014, <http://www.ontopmag.com/article.aspx?id=19362&MediaType=1&Category=26> (stating that the Ninth Circuit panel “bodes well for plaintiffs and marriage equality supporters” and quoting Dr. Gregory Herek, a social science researcher at the University of California, Davis, as stating, “All judges on the 9th Circ panel for ID HI & NV marriage cases have supported heightened scrutiny for sexual orientation discrimination” and “it’s all over but the shouting”).

and one-half year period to five of this Circuit’s eleven cases involving the federal constitutional rights of gay men and lesbians, another to four of those cases, and both of them to the momentous “gay marriage” cases. That sense will deepen on realizing that eighteen of the judges with active status during any part of the relevant time period were assigned to *none* of the eleven. That sense will deepen even further because of the appearance, arising from widely shared public perceptions, that Judges Reinhardt and Berzon’s presence on this panel favors one side over the other.

Sophisticated statistical analysis validates the reasonable person’s sense that something is amiss. Compared to a selection process that is genuinely neutral, the odds are as reflected in the Report’s tables, including Table 4 with its odds of 441-to-1 against what we observe with the Relevant Cases—the two most assigned judges receiving under a neutral assignment process five and four assignments respectively. The appearance to a reasonable person is of something serious being wrong and requiring a remedy.

It must be remembered that a “system of neutral assignment means little absent an effective enforcement mechanism.” *Neutral Assignment*, 78 Tex. L. Rev. at 1108. When “[e]nforcement . . . [is] left to the judges on the circuit . . .

[the] judges must become aware that the procedures governing random assignment have been violated. In general, this requires empirical observation.” *Id.*

The requisite empirical observation is now before this Circuit and calls out for an effective remedy. At this juncture, that effective remedy is to grant rehearing en banc of this case.

### **CONCLUSION**

To protect its own jurisprudence in the realm of federal constitutional law and civil rights, to bring that jurisprudence into harmony with Supreme Court jurisprudence and that of nearly all other Circuits, to vindicate the values and integrity of its own judge-assignment process, and to resolve within this Circuit our generation’s most consequential social issue in a way that commands a broader public respect and acceptance, this Circuit needs to review this case en banc.

There is no other way to accomplish those essential tasks.

Dated: October 13, 2014

Respectfully submitted,

Monte Neil Stewart  
Craig G. Taylor  
Daniel W. Bower  
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By: s/ Monte Neil Stewart

Monte Neil Stewart

*Lawyers for Appellee Coalition for the  
Protection of Marriage*

**CERTIFICATE OF SERVICE**

I hereby certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Ninth Circuit by using the appellate CM/ECF system on October 13, 2014.

I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

s/ Monte N. Stewart

**AFFIDAVIT OF DR. JAMES H. MATIS**

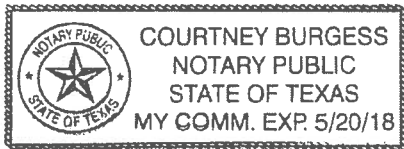
State of Texas                    )  
  ) ss  
County of Brazos                )

I, James H. Matis, being first duly sworn, testify of my own personal knowledge that:

1. My *curriculum vitae* is attached as Exhibit 2. The statements made in it are true and accurate.
2. The report attached as Exhibit 3 contains statistical analysis of the assignment of judges to the Ninth Circuit cases reflected in attached Exhibit 1. That analysis has been done in conformity with the standards governing my profession, and, in my professional and expert opinion, the report's conclusions are accurate and valid.

  
\_\_\_\_\_

SUBSCRIBED AND SWORN TO before me October 13<sup>th</sup>, 2014.



Courtney Burgess  
Notary Public  
Residing at Brazos County  
My Commission Expires: 5/20/18

**AFFIDAVIT OF MONTE NEIL STEWART**

State of Idaho )  
 ) ss  
County of Ada )

I, Monte Neil Stewart , being first duly sworn, testify of my own personal knowledge that:

1. I am a lawyer duly admitted to practice before this Court and am one of the lawyers representing in this case the Coalition for the Protection of Marriage.
2. My resume is attached as Exhibit 4, and each statement made in it is true and accurate.
3. This Court disclosed to the Coalition and the public on September 1, 2014, the composition of the panel assigned to hear this case (the Nevada genderless marriage case), *Latta v. Otter*, Case Nos. 14-35420 and 14-35421 (the Idaho genderless marriage case), and *Jackson v. Rosen*, Case Nos. 12-16995, 12-16998, and 12-17668 (the Hawaii genderless marriage case).
4. The Coalition’s counsel became aware of concerns held by other practitioners that the Circuit’s judge-assignment process in socially sensitive cases like this one appeared to deviate from the ideal of a



random or otherwise neutral process. Accordingly, we examined the Circuit's history of assignments in cases involving the federal constitutional rights of gay men and lesbians and learned that Judges Reinhardt and Berzon were assigned to such cases with a frequency that suggested to us deviation from a neutral-assignment process. We then engaged Dr. James H. Matis to refute or confirm that suggestion and, if he confirmed it, to quantify the deviation. Dr. Matis has now performed that task and confirmed that the presence of either of those two judges on this panel would constitute a statistically significant deviation from what one would expect from a neutral process. He further confirmed that if the two judges appeared together, the deviation would be materially greater still.

5. In the process just described, we compiled a list of the Ninth Circuit cases decided on or after January 1, 2010, and raising a federal constitutional issue regarding the rights of homosexuals *qua* homosexuals ("Relevant Cases"). Exhibit 1 is that list. Diligent search using the resources available to us disclosed no additional Relevant Cases in the Ninth Circuit post-2009. Exhibit 1's data for each listed case is accurate.

6. Based on my many years of scholarly work on the genderless marriage issue (beginning with my intense studies of the subject at Oxford University in 2003 and 2004), on my work with a large number of appellate courts over the decades, and on my many years of direct involvement with litigation of the genderless marriage issue, I have concluded that:

- a. experienced Ninth Circuit practitioners familiar with the genderless marriage issue would uniformly prefer this panel over almost any other possible panel *if* their client were one of the plaintiffs in the Nevada and Idaho marriage cases, and, *if* their client were on the man-woman marriage side, would very likely conclude this panel to be among the least favorable possible for their client; and

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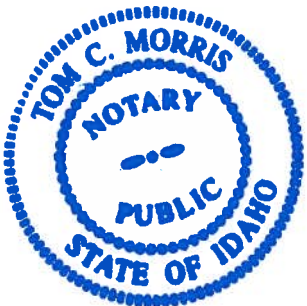
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b. such preferences and conclusions are known and understood by  
all at the Ninth Circuit involved with the judge-assignment  
process.

Monte Stewart

SUBSCRIBED AND SWORN TO before me October 13, 2014.



Tom C. Morris  
Notary Public  
Residing at Boise  
My Commission Expires: 4/4/17

**Exhibit 1**  
**Ninth Circuit Cases Involving Federal Constitutional Rights of Gays and Lesbians**  
 (since January 1, 2010)

<u>Case</u>	<u>Treatment of Federal Constitutional Issue</u>	<u>Members of the Panel</u>	<u>Published/Unpublished</u>	<u>Date of Oral Argument</u>
<i>Kemp v. Ryan</i> , 638 F.3d 1245 (April 28, 2011)	Habeas action in which Ninth Circuit panel rejected plaintiff's assertion that the Due Process Clause of the 14 <sup>th</sup> Amendment entitled him to re- <i>voir dire</i> the jury after the trial court denied his motions in <i>limine</i> that would have barred the introduction of evidence of plaintiff's homosexual assault	Rymer, Callahan, Ikuta	Published	March 10, 2011
<i>U.S. v. Osazuwa</i> , 446 Fed. Appx. 919 (Aug. 12, 2011)	affirmed district court's finding that defendant failed to show purposeful discrimination by government in exercising a preemptory strike against a potential juror who was a lesbian	Reinhardt, Wardlaw, Berzon	Unpublished	Aug. 4, 2011
<i>Diaz v. Brewer</i> , 656 F.3d 1008 (Sept. 6, 2011)	affirmed district court's order granting preliminary injunction to prevent state law taking effect that would have terminated eligibility for health-care benefits of state employees' same-sex partners; plaintiffs demonstrated a likelihood of success on the merits because they showed that the law adversely affected a classification of employees on the basis of sexual	Schroeder, Thomas, Bennett (District Judge)	Published	Feb. 14, 2011

**Exhibit 1**  
**Ninth Circuit Cases Involving Federal Constitutional Rights of Gays and Lesbians**  
**(since January 1, 2010)**

<u>Case</u>	<u>Treatment of Federal Constitutional Issue</u>	<u>Members of the Panel</u>	<u>Published/Unpublished</u>	<u>Date of Oral Argument</u>
<i>Log Cabin Republicans v. United States</i> , 658 F.3d 1162 (Sept. 29, 2011)	vacated district court's order permanently enjoining application of the congressionally enacted "Don't Ask, Don't Tell" policy, 10 U.S.C. § 654(b) (repealed), as facially violating due process and the First Amendment; repeal of § 654 during the pendency of the appeal rendered the case moot	Alarcón, O'Scannlain, Silverman	Published	Sept. 1, 2011
<i>Ward v. Carr</i> , 467 Fed. Appx. 721 (Feb. 3, 2012)	affirmed district court's dismissal of state prisoner's equal protection claim because he did not submit sufficient evidence for a reasonable juror to conclude that he was intentionally discriminated against because of his homosexuality	Wallace, Noonan, M. Smith	Unpublished	Jan. 13, 2012
<i>Perry v. Brown</i> , 671 F.3d 1052 (Feb. 7, 2012)	affirmed district court on basis that Proposition 8 violated equal protection clause by taking away the rights of same-sex couples to marry	Reinhardt, Hawkins, N.R. Smith	Published	Argued Dec. 6, 2010; argued again Dec. 8, 2011

**Exhibit 1**  
**Ninth Circuit Cases Involving Federal Constitutional Rights of Gays and Lesbians**  
**(since January 1, 2010)**

<u>Case</u>	<u>Treatment of Federal Constitutional Issue</u>	<u>Members of the Panel</u>	<u>Published/Unpublished</u>	<u>Date of Oral Argument</u>
<i>Barnes-Wallace v. City of San Diego</i> , 704 F.3d 1067 (Dec. 20, 2012)	lesbian plaintiffs failed to show that by leasing public premises to the Boy Scouts, City treated them differently from other members of the public for purposes of their equal protection claims	Canby, Kleinfeld, Berzon	Published	Argued June 20, 2011
<i>Galario v. Adewundmi</i> , 531 Fed. Appx. 830 (June 24, 2013)	reversed district court's denial of summary judgment because plaintiffs had failed to provide sufficient evidence to raise a triable issue of fact as to allegations that state social worker harbored discriminatory animus toward them on the basis of their sexual orientation and that due to that animus he recommended that the state remove a child from their home	Farris, D.W. Nelson, Nguyen	Unpublished	No oral argument; deemed submitted June 11, 2013

**Exhibit 1**  
**Ninth Circuit Cases Involving Federal Constitutional Rights of Gays and Lesbians**  
**(since January 1, 2010)**

<u>Case</u>	<u>Treatment of Federal Constitutional Issue</u>	<u>Members of the Panel</u>	<u>Published/Unpublished</u>	<u>Date of Oral Argument</u>
<i>Golinski v. United States Office of Personnel Mgmt.</i> , 724 F.3d 1048 (July 23, 2013, corrected July 25, 2013)	order dismissing appeals; Golinski, a 9th Circuit staff attorney, pursued administrative remedies under EDR plan to secure federal benefits for same-sex spouse and then filed suit in federal court contending § 3 of DOMA was unconstitutional; district court ruled § 3 of DOMA unconstitutional, which was appealed; parties stipulated to dismissal of appeals in light of U.S. Supreme Court's decision in <i>Windsor</i>	Alarcón, Thomas, Berzon	Published	No oral argument; appeals dismissed
<i>SmithKline Beecham Corp. v. Abbott Labs.</i> , 740 F.3d 471 (Jan. 21, 2014)	concluded that the appropriate level of scrutiny for reviewing equal protection claims related to sexual orientation discrimination is "heightened scrutiny"; held that use of preemptory strike to remove juror based on sexual orientation constituted intentional discrimination which was prohibited by <i>Bastoni</i> ; reversed district court	Schroeder, Reinhardt, Berzon	Published	Sept. 18, 2013

**Exhibit 1**  
**Ninth Circuit Cases Involving Federal Constitutional Rights of Gays and Lesbians**  
**(since January 1, 2010)**

<u>Case</u>	<u>Treatment of Federal Constitutional Issue</u>	<u>Members of the Panel</u>	<u>Published/Unpublished</u>	<u>Date of Oral Argument</u>
<i>Jackson v. Abercrombie</i> , Nos. 12-16995 & 12-16998; <i>Sevcik v. Sandoval</i> , No. 12-17668; <i>Latta v. Otter</i> , Nos. 14-35420 & 14-35421; Decision in Idaho and Nevada cases: <i>Latta v. Otter</i> , 14-35420, 2014 WL 4977682 (9th Cir. Oct. 7, 2014)	concluded that Nevada's and Idaho's laws preserving marriage as the union of a man and a woman violated the Fourteenth Amendment's equal protection clause;	Reinhardt, Gould, Berzon	Published	Sept. 8, 2014



January 2014

**CURRICULUM VITAE**

Name: JAMES H. MATIS  
 Address: 1908 Bee Creek  
 College Station, TX 77840

**DATE AND PLACE OF BIRTH:** March 3, 1941, Chicago, IL

**EDUCATION:**

1970 Ph.D., Statistics; Texas A&M University; College Station, TX  
 1967 M.A., Statistics and Mathematics; Brigham Young University; Provo, Utah  
 1965 B.S., Mathematics and Economics; Weber State College; Ogden, Utah

**SUMMARY OF CAREER:**

- Prof. Matis is a Fellow of the American Statistical Association (ASA), and an elected Member of the International Statistical Institute. He received the Founder's Award, the highest honor of the ASA, for "outstanding leadership ... advancing statistics education." He also received Distinguished Achievement Awards in both Teaching and in Research from Texas A&M University.
- Concerning research, Prof. Matis has published over 140 scientific papers. Many of these represent interdisciplinary research, and they appear in over 40 different journals.
- Concerning teaching, Prof. Matis has chaired education committees for the American Statistical Association and has served as a faculty consultant for the national Advanced Placement (AP) exam in statistics since its inception in 1997.
- Concerning consulting, Prof. Matis has been engaged in statistical consulting for other disciplines, especially for animal science and entomology, at Texas A&M throughout his career. He has also been a consultant for business and government agencies.
- Prof. Matis' international experience includes service as a statistical expert for the UN Food and Agriculture Organization (FAO) to India twice and to PR China once. He was awarded a Fulbright exchange research fellowship from the US State Department to India twice, and was awarded an Indo-American fellowship once. He has also taught in South Africa.

**EXPERIENCE:**

## Academic:

2000- Professor Emeritus, Statistics, Texas A&M University  
 2008-2010 Professor, Department of Statistics and Department of Agricultural Economics, Damascus University, Damascus, Syria  
 1997-2008 Faculty Consultant, ETS Advanced Placement Reading in Statistics  
 1996-2005 Director, TAMU Advanced Placement Summer Institute in Statistics  
 2001 University Research Scholar, Indian Institute of Technology, Madras, India (Spring)  
 1979-2000 Professor, Statistics, Texas A&M University  
 1995 Visiting Research Scholar, Indian Institute of Technology, Madras, India (Fall)  
 1988 Visiting Professor, Statistics, University of Kentucky (Fall)  
 1986 Statistical Consultant, United Nations Development Project; Chinese Academy of Agricultural Sciences, Beijing, China, (Spring)  
 1985, 1986 Statistical Consultant, United Nations Development Project; India Ag. Stat. Research Inst., New Delhi, India, (Summer 1985, Winter 1986)  
 1984 Visiting Professor, Statistics; Indian Institute of Technology, Madras, India, (Spring)  
 1981 Visiting Professor, Statistics; University of Witwatersrand, Johannesburg, South Africa, (Summer)  
 1978-1979 Visiting Associate Professor, Biomathematics, North Carolina State University  
 1974-1979 Associate Professor, Statistics, Texas A&M University  
 1974-1975 Visiting Associate Professor, Statistics, Pennsylvania State University  
 1970-1973 Assistant Professor, Statistics; Texas A&M University  
 1967-1970 Teaching Assistant, Statistics, Texas A&M University  
 1965-1967 Teaching Assistant, Statistics, Brigham Young University  
 1964-1965 Teaching Assistant, Mathematics, Weber State College

JAMES H. MATIS

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**Industrial:**

1989-2003 Faculty Member; USDA Food Safety and Inspection Service; College Station, Texas  
 1976-1986 Consultant; Coca-Cola Company Foods Division; Houston, Texas  
 1983-1986 Statistician; National Marine Fisheries Service, NOAA, Galveston, Texas  
 1976-1980 Expert; Division of Biometrics, Bureau of Drugs, FDA  
 1980 Consultant; Ecological Simulations, Inc.; Athens, GA (Summer)  
 1975-1978 Consultant; Los Alamos Scientific Laboratory, New Mexico  
 1965-1967 Mathematical Statistician; U.S. Forest Service; Ogden, Utah; part-time and summers

**HONORS AND AWARDS:**

2012 Best paper in Statistical Methodology during 2010-2011. *Journal of Indian Society of Agricultural Statistics*  
 2003 Founders Award, American Statistical Association, 'for outstanding leadership... advancing statistics education.'  
 2001 Fulbright Research Scholarship to India, U. S. Department of State.  
 2000 Member, Academy of Distinguished Graduates, College of Science, Texas A&M University.  
 1998 Distinguished Achievement in Research Award, Texas A&M University, Association of Former Students  
 1998 Donald B. Owens Award, San Antonio Chapter of ASA  
 1997 Honored Alumni Award, College of Physical and Mathematical Sciences, Brigham Young University.  
 1996-2006 Visiting Professor, Department of Statistics and Modelling Science, University of Strathclyde, Glasgow, Scotland.  
 1995 Fulbright Research Scholarship to India, U. S. Information Agency  
 1994 Distinguished Statistical Ecologist award, International Association for Ecology (INTECOL)  
 1993 Distinguished Achievement Medal, Section of Statistics and the Environment, American Statistical Association  
 1993 Distinguished Achievement Award in Teaching, University level, Texas A&M University Association of Former Students.  
 1989 Elected Member, International Statistical Institute  
 1987 Fellow, American Statistical Association  
 1985 Distinguished Teaching Award, College of Science, Texas A&M University Association of Former Students  
 1984 Indo-American Research Fellowship, U.S. Educational Foundation in India  
 1980 H. O. Hartley Award, distinguished former student, Texas A&M University  
 1975-1980 NIH Research Career Development Award  
 1969 Connor Statistics Award, outstanding Ph.D. candidate, Texas A&M University  
 1967-1970 National Defense Education Act Fellow  
 1965-1967 National Science Foundation Trainee  
 1959 Outstanding Freshman Mathematics Student, Weber State College

**PROFESSIONAL ACTIVITY:**

2006-2008 Organizer, Statistical Papers Night at National AP Statistics Reading  
 2004 Member, Outreach Magazine Task Force, American Statistical Association  
 2002-2003 Member, ASA Magazine Task Force, American Statistical Association  
 2001 Program Chair, Statistical Education Section, American Statistical Association  
 1999- Coordinator for Beyond AP Statistics (BAPS) Program for American Statistical Association  
 1998-2004 Member, American Statistical Association and National Council of Teachers of Mathematics Joint Committee on the Curriculum of Statistics and Probability (Chair--2000)  
 1996-2001 American Statistical Association representative to SRCOS Summer Research Conference Committee (Chair 1997, 2000)  
 1996-1998 Chapter Representative, Southeast Texas Chapter of ASA (SETCASA)  
 1994-1995 Publications Officer, Section on Statistics and the Environment, Am. Stat. Assoc.  
 1989-1993 Member, Am. Stat. Assoc. Review Committee for Ecological Monitoring and Assessment Program (EMAP)  
 1989-1992 Publications Officer, Section on Statistical Education, American Statistical Association

JAMES H. MATIS

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- 1988-1991 Member, Committee on Meetings, American Statistical Association (Chair---1990)  
 1987 Member, Organizing Committee, NATO Advanced Study Institute on Pharmacokinetics, Erice, Italy  
 1987 Program Chair, 1987 Joint Statistical Meetings, American Statistical Association  
 1979-1984 Member, Committee on Meetings, American Statistical Association (Chair---1984)  
 1983 Program Chairman, Statistical Education Section of American Statistical Association.  
 1981-1983 Member, Regional Council, Biometric Society (ENAR)  
 1979-1982 Member, Executive Board, International Statistical Ecology Program  
 1980 Program Co-chairman, 1980 Spring ENAR Meetings, Biometric Society  
 1978 Coordinator and Organizer, NATO Advanced Study Institute on Compartmental Models Analysis in Ecology, International Statistical Ecology Program; Parma, Italy.  
 1977 Local Arrangements Chairman, NATO Advanced Study Institute, International Statistical Ecology Program; College Station, TX  
 1975-1978 Member, Regional Advisory Board, Biometric Society (ENAR)  
 1970, 1992 President, Southeast Texas Chapter of American Statistical Association (SETCASA)

**SOCIETY MEMBERSHIP:**

American Statistical Association  
 Biometric Society  
 International Association for Statistical Education  
 International Statistical Institute  
 National Council of Teachers of Mathematics

**MAJOR RESEARCH INTERESTS:**

Biomathematics, Compartmental Analysis, Statistical Ecology, Applied Stochastic Processes, Statistical Education

**TEACHING:**

Graduate courses: statistical methods, regression analysis, applied stochastic processes, statistical ecology, biomathematical modeling.

Undergraduate courses: statistical methods, linear models, biometry.

**PUBLICATIONS:**

## Books:

- 1979 *Compartmental Analysis of Ecosystems Models*, Vol. S-10 of Satellite Program in Statistical Ecology. International Co-operative Publishing House; Burtonsville, MD. J. H. Matis, B. C. Patten, and G. C. White, Editors.  
 2000 *Stochastic Population Models*. Lecture Notes in Statistics 145. Springer; New York. With T. R. Kiffe.

## Technical Papers, Theory and Methods:

- 1967 'Investigation into Precursor-Product Relationships', *Proc. Nat'l. Biomedical Comp. Soc.* With M. W. Carter.  
 1971 'Stochastic Compartmental Analysis: Model and Least Squares Estimation from Time Series Data', *Biometrics* 27. With H. O. Hartley.  
 1972 'Multi-Compartmental Analysis in Steady State as a Stochastic Process', *Acta Biotheoretica* 21. With M. W. Carter.  
 1972 'Gamma Time-Dependency in Blaxter's Compartmental Model', *Biometrics* 28.  
 1973 'A Paradox on Compartmental Models with Poisson Immigration' *Am. Stat.* 27.  
 1974 'On the Probability of Reaching a Threshold in a Stochastic Mammillary System', *Bull. Math. Biology*, 36. With M. Cardenas and R. L. Kodell.  
 1974 'On the Stochastic Theory of Compartments: Solution for n-Compartment Systems with Irreversible, Time-Dependent Transition Probabilities', *Bull. Math. Biology*, 36. With M. Cardenas.  
 1975 'On the Time-Dependent Reversible Stochastic Compartmental Model: I. The General Two Compartment Model', *Bull. Math. Biology*, 37. With M. Cardenas.

- 1975 'On the Time-Dependent Reversible Stochastic Compartmental Model: II. A Class of n-Compartment Systems', *Bull. Math. Biology*, 37. With M. Cardenas.
- 1976 'Estimating the Rate Constants in a Two-Compartment Stochastic Model', *Biometrics*, 32. With R. L. Kodell.
- 1976 'A Note on the Use of a Stochastic Mammillary Compartmental Model as an Environmental Safety Model', *Bull. Math. Biology*, 38. With R. L. Kodell and M. Cardenas.
- 1977 'On the Two-Compartmental Closed System: The Stochastic Non-Steady State Models', *J. Interdisc. Cycle Res.*, 8. With M. D. McKay.
- 1977 'Small Sample Comparison of Different Estimators of Negative Binomial Parameters', *Biometrics*, 33. With E. Pieters, C. E. Gates, and W. L. Sterling.
- 1979 'Stochastic Models of Compartmental Systems', *Biometrics*, 35. With T. E. Wehrly.
- 1979 'Compartmental Models with Multiple Sources of Stochastic Variability: The One-Compartment, Time Invariant Hazard Rate Case', *B. Math. Biology*, 41. With H. D. Tolley.
- 1979 'On the Distribution of the General Irreversible n-Compartmental Model having Time-Dependent Transition Probabilities', *B. Math. Biology*, 41. With J. O. Epperson.
- 1979 'An Approach to a Compartmental Model with Multiple Sources of Stochasticity for Modeling Ecological Systems' in *Compartmental Analysis of Ecosystem Models* (J. H. Matis, B. C. Patten and G. C. White, eds.), International Co-operative Publishing House; Burtonsville, MD. With T. E. Wehrly.
- 1979 'On the Cumulants of Some Stochastic Compartmental Models Applied to Ecological Systems', in *Compartmental Analysis of Ecosystem Models* (J. H. Matis, B. C. Patten, and G. C. White, eds.) International Co-operative Publishing House; Burtonsville, MD. With K.B. Gerald.
- 1979 'Environ Analysis of Linear Compartmental Systems: The Static Time Invariant Case,' *Proc. 42 Session Int. Statistical Inst.*, Vol. 47, Book 1, Manila, Phillipines. With B. C. Patten.
- 1980 'On the Stochastic Modeling of Tracer Kinetics', *Federation Proceedings*, 39. With H. D. Tolley.
- 1981 'On the Relevance of Stochastic Compartmental Models to Pharmacokinetic Systems', *Bull. Math. Biology*, 43. With A. Rescigno.
- 1981 'Compartmental Models with Multiple Sources of Stochastic Variability: The One-Compartment Models with Clustering', *Bull. Math. Biology*, 43. With T. E. Wehrly.
- 1981 'Compartmental Modeling and Analysis for Carcinogenic Experiments', *J. Math. Biology*, 12. With R. W. Whitmore.
- 1982 'The Water Environs of Okefenokee Swamp: An Application of Static Linear Environ Analysis', *Ecol. Modelling*, 16. With B.C. Patten.
- 1982 'On the Statistical Moments Transformation in Pharmacokinetic Models: A Study of the Rate Parameter and the Mean Residence Time Estimates', *Math. Comp. Simul.*, 24. With D. R. Olson and K. B. Gerald.
- 1983 'The Statistical Analysis of Pharmacokinetic Data,' in *Tracer Kinetic and Physiologic Modeling* (R. M. Lambrecht and A. Rescigno, eds.) Springer-Verlag Lecture Notes in Biomathematics, Vol. 48, New York, N. Y. With T. E. Wehrly and K. B. Gerald.
- 1983 'On Some Stochastic Formulations and Related Statistical Moments of Pharmacokinetic Models', *J. Pharmacokinetics & Biopharmaceutics*, 11. With T. E. Wehrly and C. M. Metzler.
- 1984 'An Irreversible Two-Compartmental Model with Age-Dependent Turnover Rates', *Biometrics*, 40. With T. H. Hughes.
- 1985 'Stochastic Compartmental Models with Gamma Retention Times: An Application and Estimation Procedure', in *Mathematics and Computers in Biomedical Applications* (J. Eisenfeld and C. DeLisi, eds.) Elsevier, N.Y. With T. E. Wehrly.
- 1985 'Residence Time Moments of Stochastic Compartmental Models with Age-Dependent and Time-Dependent Rates', in *Mathematics and Computers in Biomedical Applications* (J. Eisenfeld and C. DeLisi, eds.) Elsevier, N.Y. With D. R. Olson.
- 1985 'On the Use of Residence Time Moments in the Statistical Analysis of Age-Dependent Stochastic Compartmental Models', in *Mathematics in Biology and Medicine* (S. L. Paveri-Fontana and V. Capasso, eds.) Springer-Verlag Lecture Notes in Biomathematics, New York, N.Y. With T. E. Wehrly.
- 1985 'Modelling Pharmacokinetic Variability on the Molecular Level with Stochastic Compartmental Systems', in *Variability in Drug Therapy* (M. Rowland, L. B. Sheiner and J. L. Steimer, eds.) Raven Press, New York, N.Y. With T. E. Wehrly.

- 1985 'Use of Residence Time Moments in Compartmental Analysis', *Am. J. Physiol.*, 249 (Endocrinol. Metab. 12). With T. E. Wehrly and K. B. Gerald.
- 1985 'A Generalized Approach to Compartmental Modeling Based on Retention Time Distributions', in *Proc. of 2nd Int. Conf. on Rumen Nutrition and Physiology* (R. L. Baldwin and A. C. Bywater, eds.) University of California, Davis.
- 1986 'On Selecting Optimal Response Variables for Detecting Treatment Effects in a Two-Compartment Model', in *IMACS Trans. Scient. Comp.* 85, Vol. 5 (J. Eisenfeld and W. Witten, eds.) North Holland, Amsterdam, Netherlands. With K. B. Gerald.
- 1987 'The Case for Stochastic Models of Digesta Flow', *J. Theor. Biol.* 124.
- 1988 'On Modeling Flow Data Using Generalized Stochastic Compartmental Models', in *Cerebral Blood Flow: Mathematical Models, Instrumentation and Imaging Techniques*. (A. Rescigno, and A. Boicelli, eds.) Plenum, New York. With K. B. Gerald.
- 1988 'An Introduction to Stochastic Compartmental Models in Pharmacokinetics,' in *Pharmacokinetics: Mathematical and Statistical Approaches to Metabolism and Distribution of Chemicals and Drugs* (A. Pecile and A. Rescigno, eds.) Plenum, New York.
- 1989 'Some Generalized Stochastic Compartment Models for Digesta Flow,' *Biometrics*, 45. With T. E. Wehrly and W. C. Ellis.
- 1990 'Generalized Stochastic Compartmental Models with Erlang Transit Times', *J. Pharmacokin. and Biopharm.*, 18. With T. E. Wehrly.
- 1991 'Stochastic Models of Bioaccumulation, in *Metal Ecotoxicology: Concepts and Applications* (M. C. Newman and A. W. McIntosh, eds.) Lewis Publishers, Ann Arbor, MI. With T. H. Miller and D. W. Allen.
- 1992 'A Semi-Markov Process Model for Migration of Marine Shrimp. *Ecological Modelling*, 60. With W. E. Grant and T. H. Miller.
- 1992 'Compartmental Models with Erlang Distributed Residence Times and Random Rate Coefficients, *Bull. Math. Biology*, 54. With B. O. Ebaseh-Onofa.
- 1992 'On the Use of the Gamma Distribution for Predicting Arrival Times of Invading Insect Populations, *Environ. Entomology*, 21. With W. H. Rubink and M. Makela.
- 1992 'On Using Stochastic Compartmental Models for Describing Insect Dispersal: 1. The Case of Univariate Distributions from Markov Process Models,' in *Biomedical Modeling and Simulation* (J. Eisenfeld, M. Whitten, and D. S. Levine, eds.) Elsevier. With T. E. Wehrly, D. M. Allen, and G.W. Otis.
- 1992 'Mean Residence Times and Their Standard Errors for Any Interval of Elapsed Time,' in *Biomedical Modeling and Simulation* (J. Eisenfeld, M. Whitten and D. S. Levine, eds.) Elsevier. With D. M. Allen.
- 1993 'Approximating Multivariate Distributions in Stochastic Models of Insect Population Dynamics' in *Multivariate Environmental Statistics* (G. P. Patil and C. R. Rao, eds.) Elsevier. With T. E. Wehrly and G. W. Otis.
- 1993 'Some Applications, Properties and Conjectures for Higher Order Cumulants of a Markovian Stepping-Stone Model.' *Comm. Statist.--Theory Method*, 22. With Q. Zheng
- 1993 'Approximating Discrete Multivariate Distributions from Known Moments.' *Commun. Statist. - Theory Method* 22. With Q. Zheng
- 1994 'Compartmental Models of Ecological and Environmental Systems,' in *Environmental Statistics* (G. P. Patil and C.R. Rao, eds.) Elsevier. With T. E. Wehrly
- 1994 'Use of Birth-Death-Migration Processes for Describing the Spread of Insect Populations.' *Environ. Entomol.* 23. With T. R. Kiffe and G. W. Otis.
- 1994 'Correlation Coefficient Revisited.' *Am. Stat.* 48. With Q. Zheng.
- 1995 'Describing the Spread of Biological Populations Using Stochastic Compartmental Models with Births,' *Mathematical Biosciences* 126:215-247. With Q. Zheng and T. R. Kiffe.
- 1996 'Estimating Parameters for Birth-Death-Migration Models from Spatio-Temporal Abundance Data: Case of Muskrat Spread in the Netherlands. *J. Agricultural, Biological and Environmental Statistics*, 1:40-59. With T. R. Kiffe and R. Hengeveld.
- 1996 'On Approximating the Moments of the Equilibrium Distribution of a Stochastic Logistic Model.' *Biometrics*, 52:980-991. With T. R. Kiffe.
- 1996 'Stochastic Compartment Models with Prendville Growth Rates.' *Mathematical Biosciences* 138:31-43. With T. R. Kiffe.

- 1997 'Using Density-Dependent Birth-Death-Migration Models for Analyzing Muskrat Spread in the Netherlands.' *Jour. Ind. Soc. Ag. Statistics* (Special Golden Jubilee Issue) 49:139--146. With T. R. Kiffe and P. R. Parthasarathy.
- 1997 'Recent Advances in Modeling Stochastic Population Growth; in *Computer Modeling and Simulations of Complex Biological Systems* (S.S. Iyengar, ed.) CRC Press. With T. R. Kiffe.
- 1997 'Migration Effects in a Stochastic Multipopulation Model for African Bee Population Dynamics.' *Environmental and Ecological Statistics* 4:301--319. With T. R. Kiffe.
- 1998 'On the Cumulants of Population Size for the Stochastic Power Law Logistic Model.' *Theoretical Population Biology* 53:16--29. With T. R. Kiffe and P. R. Parthasarathy.
- 1998 'A General Approach to Non-Markovian Compartmental Models', *J. Pharmacokin. Biopharm.* 26:437--456. With T. E. Wehrly.
- 1998 'On the Coefficient of Variation for Residence Time Distributions of Some Stochastic Compartmental Models', *Commun. Statist.--Theory Meth.* 27:1757--1780. With J. O. Bader.
- 1999 'On the Cumulant Functions of Some Logistic Growth Models with Immigration', in: *Stochastic Processes and Their Applications*. (A. Vijayakumar and M. Sreenivasan, eds.) Narosa Publ., London. With T. R. Kiffe.
- 1999 'Effects of Immigration on Some Stochastic Logistic Models: A Cumulant Truncation Analysis'. *Theoretical Population Biology.* 56:139--161. With T. R. Kiffe.
- 1999 'On the Numerical Solution of Transient Probabilities of the Stochastic Power Law Logistic Model.' *Nonlinear Analysis* 37:677--688. With P. R. Parthasarathy and R. B. Lenin.
- 2002 'On Interacting Bee/Mite Populations: A Stochastic Model with Analysis Using Cumulant Truncation.' *Environ. & Ecol. Statistics* 9:237--258. With T. R. Kiffe.
- 2002 'On the Use of Time Lags and Time-Dependent Transfers in Compartmental Systems', *Advances in Stochastic Modelling*. (J. R. Artalejo and A. Krishnamoorthy, eds.) Notable Publ., New Jersey. With T. R. Kiffe.
- 2003 'A Simple Saddlepoint Approximation for the Equilibrium Distribution of the Stochastic Logistic Model of Population Growth.' *Ecological Modelling* 161: 239--248. With T. R. Kiffe, E. Renshaw, and J. Hassan.
- 2003 'Modeling Processes from Probabilities'; *Mathematical Modeling in Nutrition and the Health Sciences* (J. A. Novotry, M. H. Green, and R. Boston, eds.) p. 87--104. Kluwer Academic, New York. With T. R. Kiffe.
- 2003 'On the Multiple Birth Effect in Stochastic Host/Parasite Models; With a Moment Closure Analysis of Bee/Mite Interactions,' *Stochastic Point Processes*. (S. K. Srinivasan and A. Vijayakumar, eds.) p. 218--240. Narosa Publishing, New Delhi. With T. R. Kiffe.
- 2004 'On Stochastic Logistic Population Growth Models with Immigration and Multiple Births.' *Theoretical Population Biology*, 65: 89--104. With T. R. Kiffe.
- 2005 'Compartment Models,' *Encyclopedia of Biostatistics* 2nd ed., in press. (P. Armitage and T. Colton, eds.) Vol. 2, p. 1021--1025. Wiley, New York. With T. R. Kiffe and T. E. Wehrly.
- 2005 'Predicting the Africanized Bee Invasion,' *Statistics: A Guide to the Unknown* 4th ed. (R. Peck, et al. ed.) p. 119--134. Duxbury Press. With T. R. Kiffe.
- 2005 'Nonlinear Stochastic Modeling of Aphid Population Growth,' *Mathematical Biosciences* 198: 148--168. With T. R. Kiffe, T. I. Matis, and D. Stevenson.
- 2005 'Compartment Models,' *Encyclopedia of Biostatistics* 2nd ed. P. Armitage and T. Colton (eds). Wiley, New York. With T. Kiffe and T. Wehrly.
- 2006 'Application of Population Growth Models Based on Cumulative Size to Pecan Aphids,' *Journal of Agricultural, Biological, and Environmental Statistics* 11: 425--449. With T. R. Kiffe, T. I. Matis, and D. E. Stevenson.
- 2007 'Stochastic Modeling of Aphid Population Growth with Nonlinear, Power-Law Dynamics,' *Mathematical Biosciences* 208: 469--494. With T. R. Kiffe, T. I. Matis, and D. E. Stevenson.
- 2007 'Fitting Cumulative Size Mechanistic Models to Insect Population Data: A Nonlinear Mixed Effects Model Analysis,' *Journal of Indian Society of Agricultural Statistics* 61: 147-155. With L. Zhou, T. R. Kiffe and T. I. Matis.
- 2007 'Population Size Model Based on Cumulative Size, with Application to Aphids,' *Ecological Modeling* 205: 81--92. With T. R. Kiffe, T. I. Matis, J. A. Jackman and H. Singh.
- 2008 'On the Use of Growth Rate Parameters for Projecting Population Sizes: Application to Aphids,' *Ecological Modeling* 213: 133--142. With T. R. Kiffe, T. I. Matis, J. A. Jackman, W. E.

- Grant and H. Singh.  
 2008 'A Mechanistic Model Based Analysis of Cotton Aphid Population Dynamics Data,' *Agricultural and Forest Entomology*, 10: 355--362. With T. I. Matis, M. N. Parajulee and R. B. Shrestha.  
 2008 'Using the Cumulative Size Mechanistic Model for Analyzing Insect Data,' *Proc 2007 Conf Applied Statistics in Agriculture*. With T. I. Matis, G. J. Michels, Jr., and M. N. Parajulee.  
 2008 'Generalized Applied Population Growth Models with Immigration and Cumulative-Size Dependent Dynamics,' *Math Biosciences*, 215: 137--143. With T. R. Kiffe, T. I. Matis and C. Chattopadhyay.  
 2008 'Corn Leaf Aphid, *Rhopalosiphum maidis* (Hemiptera: Aphididae), is a Key to Greenbug, *Schizaphis graminum* (Hemiptera: Aphididae), Biological Control in Grain Sorghum, *Sorghum bicolor*.' *European J. Entomology*, 105: 513--520. With G. J. Michels, Jr.

## Technical Papers, Applications:

- 1972 'Orientation of Goldfish in Response to Sublethal Concentration of Copper', *J. Fisheries Res.* 27. With H. Kleerekoper, G. F. Westlake, and P. J. Gensler.  
 1972 'The Locomotor Response of Goldfish, Channel Catfish, and Large-mouth Bass to a 'Copper-Polluted' Mass of Water in an Open Field', *J. Water Resources Res.* 8. With A. M. Timms and H. Kleerekoper.  
 1972 'Interaction of Temperature and Copper Ions as Orienting Stimuli in the Locomotor Response of the Goldfish', *J. Fisheries Res.*, 30. With H. Kleerekoper and J. Waxman.  
 1973 'A Time Series Analysis of Some Aspects of Locomotor Behavior of Goldfish', *J. Interdisc. Cycle Research* 4. With H. Kleerekoper and P. J. Gensler.  
 1973 'Locomotor Response of the Goldfish to Polarized Light and its e-Vector', *J. of Comp. Physiology*, 86. With H. Kleerekoper, A. M. Timms, and P. G. Gensler.  
 1973 'The Effects of Exposure to Sublethal DDT on the Exploratory Behavior of Goldfish', *J. Water Resources Res.*, 9. With F. B. Davy and H. Kleerekoper.  
 1974 'Non-random Oscillatory Changes in Orientation of the Goldfish (*Carrassius auratus*) in an Open Field', *An. Behavior*, 22. With H. Kleerekoper and P. G. Gensler.  
 1974 'Exploratory Behavior of Goldfish (*Carrassius auratus*)', *An. Behavior*, 22. With H. Kleerekoper, P. G. Gensler, and P. Maynard.  
 1974 'A Stochastic Locomotor Control Model for the Goldfish', *Acta Biotheoretica* 23. With D. R. Childers and H. Kleerekoper.  
 1974 'The Locomotor Response of Goldfish to a Steep Gradient of Copper Ions', *J. Water Resources Res.*, 10. With G. F. Westlake and H. Kleerekoper.  
 1974 'On Forecasting the Locomotor Behavior of the Nurse Shark; *Ginglymostoma cirratum*', *J. Interdisc. Cycle Res.*, 5. With H. Kleerekoper and D. Childers.  
 1975 'Accuracy of Localization of a Chemical Stimulus in Flowing and Stagnant Water by the Nurse Shark, *Ginglymostoma cirratum*', *J. Comp. Physiol.* 98. With H. Kleerekoper and D. Gruber.  
 1975 'The Locomotor Behavior of the Nurse Shark, *Ginglymostoma cirratum*: A Time Series Analysis', *Acta Biotheoretica*, 24. With H. Kleerekoper and D. Gruber.  
 1975 'Interaction of Odor and Flow Perception and the Effects of Parathion in the Locomotor Orientation of the Goldfish', *J. of Fish Biology*, 7. With G. Rand and H. Kleerekoper.  
 1977 'Long Term Cycles in the Orientation of the Goldfish (*Carassius auratus*) in an Open Field', *J. Interdisc. Cycle Res.*, 8. With H. Kleerekoper and K. Gerald.  
 1978 'A Stochastic Locomotor Control Model for the Nurse Shark, *Ginglymostoma cirratum*', *J. Math. Biology*, 6. With K. Gerald and H. Kleerekoper.  
 1979 'Quantitating Ruminant Turnover', *Federation Proceedings*, 38. With W. C. Ellis and C. Lascano.  
 1979 'Sites Contributing to Compartmental Flow of Forages Residues', *Ann. Rech. Vet.* 10. With W. C. Ellis and C. Lascano.  
 1984 'Dietary Influences on Flow Rate and Digestive Capacity', in *Herbivore Nutrition in the Subtropics and Tropics* (F. M. C. Gilchrist and R. I. Mackie, eds.) Science Press, Craighall, South Africa. With W. C. Ellis, K. R. Pond, C. E. Lascano, and J. P. Telford.  
 1984 'Stochastic Compartmental Models of Ecological Succession: Evaluation of their Usefulness to Natural Resource Managers', in *Analysis of Ecological Systems: State-of-the-Art in Ecological Modelling* (W. K. Lauenroth, G. V. Skogerboe, and M. Flug, eds.) Elsevier, N.Y. With W. E. Grant.  
 1984 'Rumen Microbial Digestion of Fiber as a Stochastic Process', *Canada J. Anim. Sci.*, 64, (Sept.

- Supl.). With M. Mahlooji, W. C. Ellis, and K. R. Pond.
- 1984 'The Macrohydrology of Okefenokee Swamp', in *The Okefenokee Swamp: It's Natural History, Geology, and Geochemistry* (A. D. Cohen, O. J. Casagrande, M. J. Andrejko, and G. R. Best, eds.) Wetland Surveys, Los Alamos, NM. With B. G. Patten.
- 1984 'A Method for Describing the Weight Distribution of Particles from Sieved Forage', in *Techniques in Particle Size Analysis of Feed and Digesta in Ruminants* (P. M. Kennedy, ed.) Canadian Soc. An. Science, Edmonton, Alberta. With K. R. Pond, E. A. Tolley, and W. C. Ellis.
- 1985 'A Calcite Dissolution Model for the Estimation of Particle Size Distribution', *Soil Sci. Soc. Am. J.*, 49. With M. VonTress and R. H. Loeppert.
- 1985 'A Markov Chain Approach to Crop Yield Forecasting', *Ag. Systems*, 18. With T. Saito, W. E. Grant, W. C. Iwig, and J. T. Ritchie.
- 1985 'Physical and Chemical Digestion of Forage Fragments with Emphasis on Stochastic, Heterogeneous Rate Model', in *Proc. of 2<sup>nd</sup> Int. Conf. on Rumen Nutrition and Physiology* (R. L. Baldwin and A. C. Bywater, eds.) University of California, Davis. With W. C. Ellis, K. R. Pond, and M. Mahlooji.
- 1986 'Markers for Estimating Digesta Flow in Pigs and the Effects of Dietary Fiber', *J. An. Sci.*, 63. With W. G. Pond, K. R. Pond, and W. C. Ellis.
- 1987 'On the Modeling and Analysis of Digesta Flow Data,' *J. Foreign Livestock* (in Chinese), 41; also in *Proc. 13<sup>th</sup> Biometric Conf.* With T. E. Wehrly.
- 1987 'Size Reduction, Fermentation and Passage of Forage Particles and Forage Intake by Cattle,' in *Proc. of Feed Intake by Beef Cattle*, MP Publ. #121, Oklahoma State University, Stillwater. With W. C. Ellis, C. Lascano, M. Mahlooji, and K. R. Pond.
- 1988 'Dietary-Digestive Interactions Determining the Feeding Value of Forages and Roughages', in *World Animal Science Series*, Vol. B-4, Elsevier, Amsterdam. With W. C. Ellis and M. J. Wylie.
- 1988 'Compartment Models for Estimating Attributes of Digesta Flow in Cattle,' *Br. J. Nutrition*, 60. With K. R. Pond, W. C. Ellis, H. H. Ferreiro, and J. D. Sutton.
- 1988 'Forecasting Commercial Harvest of Marine Shrimp Using a Markov Chain Model', *Ecol. Modelling*, 43. With W. E. Grant and W. Miller.
- 1988 'Flow Characteristics of Various Size Particles and Solutes Through Digestive Segments of Holstein Heifers,' *Br. J. Nutrition*, 60. With M. J. Wylie, W. C. Ellis, and D. E. Beever.
- 1989 'An Application of the Markov Chain Approach to Forecasting Cotton Yield from Surveys', *Ag. Systems*, 29. With T. Birkett and D. Boudreaux.
- 1989 'Application of Decision Theory in Understanding Food Choice Behavior of Hatching Loggerhead Sea Turtles and Chemosensory Imprinting in Juvenile Loggerhead Sea Turtles,' *Experientia*, 45. With C. W. Steele, M. A. Grassman, and D. W. Owens.
- 1989 'Passage of Chromium-Mordanted and Rare Earth-Labelled Fiber: Time of Dosing Kinetics,' *J. Anim. Sci.*, 67. With K. R. Pond, W. C. Ellis, and A. G. Deswysen.
- 1990 'On a Stochastic Approach to Modeling Ruminant Digestion and Metabolism,' in *Modeling Digestion and Metabolism in Farm Animals* (B. Robson, D. Poppi, J. France and M. Gill, eds.) Lincoln College, New Zealand. With W. C. Ellis and D. M. Allen.
- 1990 'The Flow of Corn Residues Through the Gastrointestinal Tract of Cattle', *J. Anim. Sc.*, 68. With M. J. Wylie, T. W. White, and W. C. Ellis.
- 1991 'A Stochastic Compartmental Model for Migration of Marine Shrimp,' *Ecol. Modelling*, 54. With W. E. Grant and T. H. Miller.
- 1992 'Invasive Dynamics of Africanized Honeybees in North America,' *Naturwissenschaften*, 79. With G. A. Rowell, M. E. Makela, J. D. Villa, J. M. Labougle, and O. R. Taylor.
- 1992 'Statistical Hammers and Nails for Predicting the Spread of the Africanized Honey Bee,' *Stats*. 7.
- 1994 'Methodology for Estimating Digestion and Passage Kinetics of Forages', in *Forage Quality, Evaluation and Utilization* (C. G. Fahey, Jr., ed.) Am. Soc. of Agronomy, Inc., Madison, WI. With W. C. Ellis, T. M. Hill, and M. R. Murphy.
- 1995 'Generalized Stochastic Compartmental Models of Calcium Metabolism', in *Kinetic Models of Trace Element and Mineral Metabolism During Development*. (K. N. S. Subramanian and M. E. Wastney, eds.) CRC Press. With D. M. Allen.
- 1995 'Predicting the Date of First Catch of the Corn Earworm, *Helicoverpa zea*, in Central U. S.', in *Proc. Conf. Applied Stat. in Agriculture*. Kansas State Univ. With S. Yang, N. Castiaux, J. K.



- Westbrook, K. R. Beerwinkle, and J. D. Lopez, Jr.
- 1997 'Early-Season Migratory Flights of Corn Earworm (*Lepidoptera: Noctuidae*). *Environ. Entomol.* 26:12--20. With J. K. Westbrook, W. W. Wolf, P. D. Lingren, J. R. Raulston, J. D. Lopez, Jr., R. S. Eyster, J. F. Esquivel, and P. G. Schleider.
- 1999 'Estimating Handling Times for Herbivore Diets: A Statistical Method Using the Gamma Distribution,' *J. Animal Ecology*. 68:638--645. With S. G. Kohlmann and K. L. Risenhoover.
- 1999 'Dietary-Digestive-Metabolic Interactions Determining the Nutritive Potential of Ruminant Diets', in *Nutritional Ecology of Herbivores*. (H. G. Jung and G. C. Fahey, Jr. eds.) Am. Soc. Animal Science, Savoy, IL. With W. C. Ellis, D. Poppi, H. Lippke, T. M. Hill, and F. M. Rouquette, Jr.
- 1999 'Temporal Pattern of Ovipositional Readiness in Spring Species of Phyllophaga (Coleoptera: Scarabaeidae) in North Central Texas. *Ann. Entomological Soc. Am.* 92:47--52. With R. L. Crocker, W. T. Nailon, Jr., and R. E. Woodruff.
- 2000 'The Flow of Forage Particles and Solutes through Segments of the Digestive Tracts of Cattle'. *British J. of Nutrition* 83:295--306. With M. J. Wylie, W. C. Ellis, E. M. Bailey, W. D. James, and D. E. Beaver.
- 2000 'Feed Intake in Ruminants: Kinetic Aspects', in *Farm Animal Metabolism and Nutrition*. (J. P. F. D'Mello ed.) CABI Publishing, New York. With W. C. Ellis and D. Poppi.
- 2001 'Marker Concentration Patterns of Labelled Leaf and Stem Particles in the Rumen of Cattle Grazing Bermuda Grass (*Cynodon dactylon*) Analyzed by Reference to a Raft Model.' *British J. of Nutrition* 85:553--563. With D. P. Poppi, W. C. Ellis, and C. E. Lascano.
- 2002 'Validity of Specifically Applied Rate Earth Elements and Compartmental Models for Estimating Flux of Undigested Plant Tissue Residues through the Gastrointestinal Tract of Ruminants.' *J. Animal Science*, 80:2753--2758. With W. C. Ellis and M. J. Wylie.
- 2003 'Pecan Nut Casebearer Pheromone Monitoring and Degree-Day Model Validation Across the Pecan Belt,' *Integration of Chemical and Biological Insect Control in Native, Seeding, and Improved Pecan Production*. (J. D. Dutcher, M. K. Harris, and D. A. Dean, eds.) With D. E. Stevenson and 16 others.
- 2004 'Flow Paths of Plant Tissue Residues and Digesta Through Gastrointestinal Segments of Digesta in Spanish Goats and Methodological Considerations.' *J. of Animal Science* 82: 508--520. With L. S. Walz, W. C. Ellis, T. W. White, H. A. Bateman, C. C. Williams, J. M. Fernandez, and L. A. Gentry.
- 2004 'Integrating Technologically-Based Laboratory Modules into the Stochastic Processes Curriculum,' *Proceedings of Round Table Conference on Curriculum Development in Statistical Education*. International Association of Statistical Education. With T. Matis and L. Riley.
- 2005 'Feed Quality: Natural Plant Markers-Indigestible Fiber,' *Encyclopedia of Animal Science* (W. G. Pond and A. W. Bell, eds.) Marcel Dekker. With W. C. Ellis and H. Lippke.
- 2005 'Models for Estimating Parameters of Neutral Detergent Fiber Digestion by Ruminal Microorganisms,' *Journal of Animal Science*, 83: 1591--1601. With W. C. Ellis and M. Mahlooji.
- 2005 'Effects of Size on Ingestively Masticated Fragments of Plant Tissues on Kinetics of Digestion of NDF,' *Journal of Animal Science*, 83: 1602--1605. With W. C. Ellis, M. Mahlooji, and C. E. Lascano.
- 2007 'Pharmacokinetics and Safety of Arginine Supplementation in Animals,' *Journal of Nutrition*. With G. Wu, F.W. Bazer, T. A. Cudd, W. S. Jobgen, S. W. Kim, A. Lassala P. Li, C. J. Meininger and T.E. Spencer.
- 2008 'Corn Leaf Aphid, *Rhopalosiphum maidis* (Hemiptera: Aphididae), is a Key to Greenbug, *Schizaphis graminum* (Hemiptera: Aphididae), Biological Control in Grain Sorghum, *Sorghum bicolor*.' *European J. Entomology*, 105: 513--520. With G. J. Michels, Jr.
- 2009 'Population Dynamics Models Based on Cumulative Density Dependent Feedback: A Link to the Logistic Growth Curve and a Test for Symmetry Using Aphid Data. *Ecological Modelling*, 220: 1745-1751. With T. R. Kiffe, W. van der Werf, A. C. Costamagna, T. I. Matis and W. E. Grant.
- 2009 'Comparison of Two Mechanistic Models for Aphid Population Size. Proceedings of the 2008 Conference on Applied Statistics in Agriculture. Kansas State University, Manhattan, Kansas. With T. R. Kiffe, W. van der Werf, G. J. Michels, Jr, and A. Costamagna.
- 2010 'Using the Logistic pdf Model to Mitigate Autocorrelation in Growth Curve Analysis. *Journal of*

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- the Indian Society of Agricultural Statistics* 64: 229-236. With M. J. Al-Muhammed and W. van der Werf.
- 2010 'Theory and Application of the Logistic Probability Density Function as a Population Growth Model. *Damascus University Journal for Basic Science* 26: 9-19. With M. J. Al-Muhammed.
- 2011 'Mitigating Autocorrelation in Richards Growth Model Analysis using Incremental Growth Data, with Application to Turkey Growth. *Journal of the Indian Society of Agricultural Statistics* 65: xxx. With K. T. Mohammed and M. J. Al-Muhammed. (Given Best Paper Award).
- 2011 'A Population Dynamics Perspective on Effect of Irrigation Regimes and Plant Densities on Greenbug Adundance in Grain Sorghum Using Regression. *Agricultural and Forest Entomology* 12: 15-24. With G. J. Michels, Jr, T. I. Matis and T. R. Kiffe.

**Examination of the Appearance of Bias in Judicial Panel Selection**  
**13 October 2014**  
**James H. Matis, PhD**

**1 Summary**

It is my opinion, based on the analysis described in this Report, that Ninth Circuit judge assignments in the Relevant Cases is unlikely to have happened through a neutral selection process. The Relevant Cases are those eleven cases involving the federal constitutional rights of gay men and lesbians and identified in Exhibit 1. Specifically, the probability is very small that Judge Berzon was assigned to five of those cases, that Judge Reinhardt was assigned to four of them, and that at least one of the two served in six of those eleven cases under a neutral selection process. Under the most deferential (or benefit-of-the-doubt) approach, the odds are at least 60-to-1 against a neutral assignment process assigning both judges to the eleventh and now-pending Relevant Case, along with their level of involvement in the first ten of those cases. And under another and potentially more robust analysis, the odds are 441-to-1 against such.

This Report does *not* consider the neutrality or bias of any judge, including any judge in the “group of interest” addressed below. Analysis of personal biases, if any, is beyond the scope of this Report.

**2 Introduction**

The purpose of this Report is to provide a statistical analysis of whether the selection of the judges on panels in the first ten of the Relevant Cases (“Earlier Cases”) and the eleventh of those cases (“Current Case”) appears to be biased. By “biased” I mean that there is statistical evidence that the panel of judges was not selected in a neutral fashion to hear those cases.

The data for the portion of this study summarized in Table 2 are the Relevant Cases, the identities and terms of service of the Ninth Circuit’s judges serving at any time between January 1, 2010 and September 30, 2014 (as disclosed in publicly available records), and the Ninth Circuit panels assigned to cases in the same city and the same month as each of the Relevant Cases (as disclosed in the Ninth Circuit’s publicly available records). The data for the portion of this study summarized in Table 3 are the same, plus the Ninth Circuit panels assigned to cases in the same city and either the preceding month or succeeding month of each

of the Relevant Cases (as disclosed in the Ninth Circuit's publicly available records). The data for the portion of this study summarized in Table 4 are all Ninth Circuit panels sitting between January 1, 2009 and September 30, 2014, including the Relevant Cases.

I received Exhibit 1 from Monte Neil Stewart; it is accepted here as representing all the Ninth Circuit cases during the relevant time period (January 1, 2010 through September 8, 2014) that meet the definition of Relevant Case.

The portion of this analysis summarized in Tables 1 and 2 proceeds by first enumerating all panels available to hear each Relevant Case according to the scheduled time and city of the case. Specifically, we construct a list of panels that are scheduled in the same city and the same month as the Relevant Case. I assume that cases are assigned to panels in a neutral fashion. Thus, the probability that a particular Relevant Case is heard by a specific panel is calculated as the reciprocal of the number of available panels. This procedure explicitly adjusts for the difference in the availability of the judges according to their calendar and the scheduled time and city of the hearing. It is my opinion that the rank and file individual would use some approximation of this method as a means of determining whether a particular pattern of membership on the selected panels appeared to be biased.

### **3 The Model**

#### *3.1 Background Assumptions*

The basic assumptions for the statistical analysis are the following:

1. The clerk's office constructs three-judge panels from available Ninth Circuit judges. One judge may be selected from outside the Circuit and is a "sitting by designation" judge.
2. Ninth Circuit judges submit a calendar, in advance, indicating their availability.<sup>1</sup>

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<sup>1</sup> The statistical procedure given here adjusts for the differential availability of circuit judges with respect to different hearing dates and cities.

3. There is a particular subset of judges that is *a priori* determined to be of interest as regards the determination of bias.<sup>2</sup> We refer to this subset of the judges as the “group of interest.”

4. Bias in selection of judges is defined as a disproportionate representation of the judges from the group of interest on the panels which hear the Relevant Cases. “Disproportionate” is measured by calculating the probability distribution of the number of Relevant Cases assigned to panels with one or more members from the group of interest. If the probability of the observed panel assignments (and more extreme assignments) is small, we conclude that the judges in the group of interest are disproportionately represented and hence conclude that the process of selecting panels appears biased.

### 3.2 Available Panels

I am informed that the mechanism for forming panels is based on each judge’s availability. Each judge submits a calendar of available dates in advance of the panel formation process. From this schedule, a set of panels of judges is made up for each possible date of a hearing. Because of the backlog of cases, we assume here that the Ninth Circuit is at full capacity and, consequently, every possible panel for a date is selected. The members of these panels are selected in advance of any case assignments.

I am further informed that hearings of appeals to the Ninth Circuit occur monthly, and there are six different locations for those hearings, with appeals from particular district courts generally assigned to particular cities. A list of locations and the number of Ninth Circuit sittings per year in each location are given in Table 1. I understand that the clerk’s office assigns cases to clusters and then a hearing time and place is scheduled. The cluster is then assigned to one of the panels available at the scheduled time and city.

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<sup>2</sup> For example, a subset may consist of those judges that are considered to be highly inclined for or against a sensitive social issue. As noted in the Summary above, this Report does not consider the neutrality or bias of any judge, including any judge in the “group of interest.”

Table 1: Locations of Ninth Circuit sittings and the number of courts in each location annually.

Location	Number per year
San Francisco	12
Pasadena	12
Seattle	12
Portland	6
Honolulu	3
Anchorage	1

Once the case cluster is given a date and location, the probability of being assigned to a particular panel available in that month and city is simply the reciprocal of the number of panels so available, assuming such assignment is done randomly. For example, if there were 10 panels for the scheduled time and city, the probability of the case cluster being assigned to any one particular panel would be 1 in 10.

I calculate the probability that a member of the group of interest is on the panel assigned any particular case as the number of panels with a member of the group of interest divided by the total panels available. For example, if Judge Berzon is on two panels for cases heard in July and the total number of panels available for July is 10, then the probability that Judge Berzon would be on the panel to hear a specific case in July is two in ten or 0.2.

Clearly the probability of a selection of a panel in which Judge Berzon is a member will thus depend on the number of panels with Judge Berzon and the total number of panels within the particular month and city of the scheduled hearing. To calculate the probability of being on one or more panels over time thus requires the calculation of the probability for each scheduled instance. For example, consider ten consecutive cases. The probability that Judge Berzon is selected for the first five, and not the second five, is calculated by multiplying the selection probabilities of the first five cases with the probability of non-selection for the final five cases. Note that this is the probability calculation for a specific sequence of assignments.

Now, to calculate the general probability of all possible sequences in which Judge Berzon might be assigned five of ten panels, we take all possible sequences of scheduled hearings with five panels having Judge Berzon and five panels without

Judge Berzon and calculate the probability of each sequence as if that sequence had, in fact, occurred. The total probability is the sum of the probabilities for each sequence, added over all possible sequences. For example, one possible sequence is the one described above, namely, selection for the first five and non-selection for the last five. Another possible sequence would be assignment to panels 1, 2, 3, 4 and 6 and non-assignment to the rest. The product of the probabilities in this sequence will be different according to the availability of the judges. The probabilities for these two possible sequences plus the probabilities of all other sequences with Judge Berzon appearing five times and without Judge Berzon appearing five times gives us the probability of Judge Berzon being assigned to five of ten panels.

#### 4 Results

Here I give the probabilities (and the resulting odds against) for three different subsets of the group of interest. These probabilities are calculated assuming that at least one member of the subset is on the panel for the Current Case. The three subsets of the group of interest are:

1. Contains only Judge Berzon.
2. Contains only Judge Reinhardt.
3. Contains Judge Berzon and Judge Reinhardt. If either one or the other of these two judges or both of these judges is selected, this subset is selected.

Table 2 gives the *a priori* probability of realizing the observed count for the Earlier Cases and assignment to the Current Case for each subset. These calculations assume neutral assignments. Table 2 reports the calculated probabilities and their associated odds against and standard deviations from the mean. These three values measure the likelihood that the observed assignments in the Earlier Cases and the Current Case occurred by neutral or random chance.

Table 2: Probabilities of judge assignments in the Relevant Cases.

Subset	Probability	Odds Against	SD from Mean
Berzon	0.0203	48 to 1	2.05
Reinhardt	0.0173	56 to 1	2.11
Berzon and/or Reinhardt	0.0161	61 to 1	2.14

Because the probabilities are small and the odds against are large, it seems clear that the observed assignments in the Relevant Cases are very unlikely under the assumption of randomness or unbiasedness in the selection of panels.

Note that even though Judge Reinhardt sat on only 4 panels, compared to Judge Berzon, who sat on 5 panels, the odds are larger against Judge Reinhardt because he was not as available as Judge Berzon to sit on panels in the months and cities of the hearings for the Relevant Cases.

## 5 Comments

### 5.1 *Considering other avenues to introduce bias.*

A comment is in order here. The Table 2 calculations are based on a model that gives the greatest benefit of the doubt to the Ninth Circuit's panel-assignment process. That model assumes only one possible avenue to introduce bias, specifically, assigning case clusters to an established set of panels available within the same month in which the Relevant Cases were heard. There are other plausible avenues to introduce bias. For example, the clerk might choose among panels in the immediately adjoining months. If this avenue was available, the calculations are as reflected in Table 3, which reflects a higher appearance of bias.

Table 3: Probabilities of judge assignments in the Relevant Cases (adjoining months)

Subset	Probability	Odds Against	SD from Mean
Berzon	0.0080	124 to 1	2.41
Reinhardt	0.0127	77 to 1	2.24
Berzon and/or Reinhardt	0.0074	134 to 1	2.44

Another plausible avenue to introduce bias is found in General Order 3.2.g., which allows judges in certain situations to exchange panel assignments. I assumed no



effect on bias from this avenue. I did so because of the general commitment of the Ninth Circuit and its judges to the values and benefits of a neutral selection process; in other words, we assumed those judges would not engage in outcome-oriented exchanges.

### 5.2 Using a re-sampling method.

I also calculated probabilities using a re-sampling method. In this approach, we assume that the process that generates assignments in the Relevant Cases also generates assignments in all other Ninth Circuit cases. This method allows us to compare the assignments in the Relevant Cases with 100,000 randomly chosen groups of eleven Ninth Circuit cases assigned post-2009 to the present. This collection of 100,000 groups acts as a control group. For each group, I looked to see how many assignments were given to each of the two most-assigned judges, without regard to the identity of those judges. (With the Relevant Cases, the numbers are five for Judge Berzon and four for Judge Reinhardt.) The results are set forth in Table 4.

Table 4: Probabilities under a re-sampling method

Most and second-most appearances	Probability	Odds Against	SD from Mean
As extreme or more extreme than observed in Relevant Cases	0.00226	441 to 1	2.84

This re-sampling approach has some important properties. The approaches used with respect to the Relevant Cases required assumptions about judge availability as affected by personal calendars, month, and city. In contrast, the re-sampling approach simply assumes that the assignment process is the same for the Relevant Cases and all other Ninth Circuit cases, whatever that process may be. As such, the results described in Table 4 are more robust to violations of assumptions. Further, as noted earlier, the control group distribution was created without respect to the identity of the two most assigned judges in each group. Because of this feature, the results apply to generic judges rather than to Judge Reinhardt or Judge Berzon specifically and thus finesse *a priori* selection issues.

The re-sampling approach demonstrates a probability of 0.00226 for—that is, odds of 441-to-1 against—what we observe with the Relevant Cases—the two most assigned judges receiving under a neutral assignment process five and four assignments respectively—or anything more extreme.

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- 2004 M.St. in Legal Research, Oxford University, United Kingdom, *with distinction*
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- 1973 B.A., Brigham Young University, *summa cum laude* and *Highest Honors*

**BAR ADMISSIONS AND RATING**

California, 1976 (active status); Nevada, 1981 (active status); Utah, 1998 (active status); Idaho (2009) (active status); various federal district and circuit courts; A.V. rating since 1986

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- 2008 – partner, Stewart Taylor & Morris PLLC, Boise, Idaho
- *serving as lead counsel in civil litigation and appellate matters with emphasis on constitutional law and complex disputes*
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- 2004 – 2008 president, Marriage Law Foundation, Provo, Utah
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- 2001 – 2003 counsel to Utah's Governor and special assistant attorney general, Salt Lake City, Utah
- *as lead counsel relative to the placement of high-level nuclear waste, represented the State of Utah in federal district court and before the United States Tenth and D.C. Circuit Courts of Appeal*
- 1999 – 2001 director, Rex E. Lee Advocacy Program, J. Reuben Clark Law School, Brigham Young University, Provo, Utah; special assistant county attorney, *State v. Thomas Arthur Green*, Juab County, Utah

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- 1998 – 1999 adjunct professor, J. Reuben Clark Law School, Brigham Young University; of counsel, Fillmore Belliston & Israelsen, Provo, Utah.
- *in of-counsel capacity, served as lead counsel in civil litigation matters for both business entities and individuals*
- 1992 – 1993 United States Attorney, District of Nevada, Las Vegas, Nevada
- *supervised the work, primarily criminal and civil litigation, of over thirty-five federal attorneys working out of two offices (Las Vegas and Reno)*
- 1981 – 1992 partner, Wright & Stewart, Las Vegas, Nevada
- *served as lead counsel in civil litigation and appellate matters for business entities and individuals, including numerous bench and jury trials*
- 1978 – 1981 associate, Gibson, Dunn & Crutcher, San Diego, California
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- 1977 – 1978 law clerk, Chief Justice Warren E. Burger, United States Supreme Court, Washington, D.C.
- 1976 – 1977 law clerk, Judge J. Clifford Wallace, United States Court of Appeals for the Ninth Circuit, San Diego, California
- 1975 – 1976 editor-in-chief, Brigham Young University Law Review, Provo, Utah

#### SELECTED PUBLICATIONS

- 2012 *Marriage, Fundamental Premises, and the California, Connecticut, and Iowa Supreme Courts*, 2012 B.Y.U.L. REV. 193 (with Jacob Briggs and Julie Slater)
- 2008 *Marriage Facts*, 31 HARV. J.L. & PUB. POL'Y 313 (2008)
- 2007 *Marriage Facts and Critical Morality*, available at <http://marriagelawfoundation.org/mlf/publications/Facts.pdf>.
- 2007 *Dworkin, Marriage, Meanings – and New Jersey*, 4 RUTGERS J. L. & PUB. POL'Y 271 (2007)
- 2007 *Eliding in Washington and California*, 42 GONZAGA L. REV. 501 (2007)
- 2006 *Eliding in New York*, 1 DUKE J. CONST. L. & PUB. POL'Y SIDEBAR 37 (2006).

- 2006 *Genderless Marriage, Institutional Realities, and Judicial Elision*, 1 DUKE J. CONST. L. & PUB. POL'Y 1 (2006).
- 2005 *Marriage and the Betrayal of Perez and Loving*, 2005 B.Y.U. L. REV. 555 (with William C. Duncan).
- 2004 *Judicial Redefinition of Marriage*, 21 CANADIAN J. FAM. L. 11 (2004)
- 2004 *Investigating Possible Bias: The American Legal Academy's View of Religiously Affiliated Law Schools*, 54 J. LEGAL EDUC. 136 (2004) (with Prof. Dennis Tolley).
- 1988 *Compensatory Damages for Fraud in Nevada: A Proposed Approach*, 53 INTER ALIA F7 (1988).
- 1986 *Pleadings, Amendments to Pleadings and Supplemental Pleadings*, chapter 6, NEVADA CIVIL PRACTICE MANUAL (J. Thompson ed. 1986).
- 1977 *The Winters Doctrine as Federal Common Law*, 10 NAT. RESOURCES J. 457 (1977) (with Robert Grow).
- 1976 *HEW's Regulation under Title IX of the Education Amendments of 1972: Ultra Vires Challenges*, 1976 B.Y.U.L. REV. 133.