

Curriculum Vitae

Alex Kigerl, Ph.D.

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EDUCATION

2014	Ph.D. Criminal Justice and Criminology	Washington State University
2010	M.S. Criminology and Criminal Justice	Portland State University
2008	B.S. Psychology and Sociology	Portland State University

PEER REVIEWED PUBLICATIONS

Hamilton, Zachary, Grant Duwe, **Alex Kigerl**, Jason Gwinn, Neal Langan, & Christopher Dollar (2022). Tailoring to a Mandate: The Development and Validation of the Prisoner Assessment Tool Targeting Estimated Risk and Needs (PATTERN). *Justice Quarterly*, 39(6), 1129-1155, DOI: 10.1080/07418825.2021.1906930.

Kigerl, Alex, Zachary Hamilton, Melissa Kowalski, Xiaohan Mei (2022). The Great Methods Bake-Off: Comparing Performance of Machine Learning Algorithms. *Journal of Criminal Justice*, DOI: 10.1016/j.jcrimjus.2022.101946.

Mei, Xiaohan, Zachary Hamilton, Melissa Kowalski, Douglas Routh, & **Alex Kigerl** (2021). Redesigning the Central Eight. *Youth Violence and Juvenile Justice*, DOI: 10.1177/15412040211014264.

Kigerl, Alex (2021). Routine Activity Theory and Malware, Fraud, and Spam at the National Level. *Crime, Law and Social Change*, 76(2), 109-130, DOI: 10.1007/s10611-021-09957-y.

Hamilton, Zachary, **Alex Kigerl**, & Melissa Kowalski (2021). Prediction is Local: The Benefits of Risk Assessment Optimization. *Justice Quarterly*, 39(4), 722-744, DOI: 10.1080/07418825.2021.1894215.

Kigerl, Alex (2020). Behind the Scenes of the Underworld: Hierarchical Clustering of two Leaked Carding Forum Databases. *Social Science Computer Review*, 40(3), 618-640, DOI: 10.1177/0894439320924735.

Neuilly, Melanie-Angela, Ming-Li Hsieh, **Alex Kigerl**, & Zachary Hamilton (2020). Data Missingness Patterns in Homicide Datasets: An Applied Test on a Primary Data Set. *Violence and Victims*, 35(4), 589-614, DOI: 10.1891/VV-D-17-00189.

Hamilton, Zachary, Melissa Kowalski, **Alex Kigerl**, & Douglas Routh (2019). Optimizing Youth Risk Assessment Performance: Development of the Modified Positive Achievement Change Tool (M-PACT) in Washington State. *Criminal Justice and Behavior*, 46(8), 1106-1127, DOI: 10.1177/0093854819857108.

- Kigerl, Alex** (2018). Email Spam Origins: Does the CAN SPAM Act Shift Spam Beyond United States Jurisdiction? *Trends in Organized Crime*, 21(1), 62-78, DOI: 10.1007/s12117-016-9289-9.
- Hamilton, Zachary, Melissa Kowalski, Roger Schafer, & **Alex Kigerl** (2019). Recrafting Juvenile Risk Assessment: Developing the Modified Positive Achievement Change Tool for Iowa. *Deviant Behavior*, 41(10), 1268-1289, DOI: 10.1080/01639625.2019.1609302.
- Kigerl, Alex** (2017). Profiling Cybercriminals: Topic Model Clustering of Carding Forum Member Comment Histories. *Social Science Computer Review*, 36(5), 591-609, DOI: 10.1177/0894439317730296.
- van Wormer, Jacqueline, **Alex Kigerl** & Zachary Hamilton (2017). Digging Deeper: Exploring the Value of Prison-Based Dog Handler Programs. *The Prison Journal*, 97(4), 520-538, DOI: 10.1177/0032885517712481.
- Kigerl, Alex** (2016). Cybercrime Nation Typologies: K-Means Clustering of Countries Based on Cybercrime Rates. *International Journal of Cyber Criminology*, 10(2), 147-169, DOI: 10.5281/zenodo.163399.
- Kigerl, Alex** (2016). Detering Spammers: Impact Assessment of the CAN SPAM Act on Email Spam Rates. *Criminal Justice Policy Review*, 27(8), 791-811, DOI: 10.1177/0887403414562604.
- Hamilton, Zachary, Christopher Campbell, Jacqueline van Wormer, **Alex Kigerl**, & Brianne Posey (2016). The Impact of Swift and Certain Sanctions: An Evaluation of Washington State's Policy for Offenders on Community Supervision. *Criminology and Public Policy*, 15(4), 1009-1072, DOI: 10.1111/1745-9133.12245.
- Kigerl, Alex** & Zachary Hamilton (2016). Triaging Psychiatric Care: Risk Assessment Construction and Validation for Washington's Involuntary Treatment and Forensic Commitment Populations. *International Journal of Offender Therapy and Comparative Criminology*, 61(15), 1682-1700, DOI: 10.1177/0306624X16628237.
- Kigerl, Alex** & Zachary Hamilton (2015). The Impact of Transfers between Prisons on Inmate Misconduct: Testing Importation, Deprivation, and Transfer Theory Models. *The Prison Journal*, 96(2), 232-257, DOI: 10.1177/0032885515618466.
- Hamilton, Zachary, **Alex Kigerl**, Michael Campagna, Robert Barnoski, Stephen Lee, Jacqueline van Wormer, & Lauren Block (2015). Designed to Fit: The Development and Validation of the STRONG-R Recidivism Risk Assessment. *Criminal Justice and Behavior*, 43(2), 230-263, DOI: 10.1177/0093854815615633.
- Kigerl, Alex** (2015). Evaluation of the CAN SPAM Act: Testing Deterrence and Other Influences of Email Spammer Legal Compliance Over Time. *Social Science Computer Review*, 33(4), 440-458, DOI: 10.1177/0894439314553913.

Hamilton, Zachary, **Alex Kigerl**, & Zachary Hays (2015). Removing Release Impediments and Reducing Correctional Costs: Evaluation of Washington State's Housing Voucher Program. *Justice Quarterly*, 32(2), 255-287, DOI: 10.1080/07418825.2012.761720.

Kigerl, Alex (2013). Infringing Nations: Predicting Software Piracy Rates, BitTorrent Tracker Hosting, and P2P File Sharing Client Downloads Between Countries. *International Journal of Cyber Criminology*, 7(1), 62-80.

Kigerl, Alex (2012). Routine Activity Theory and the Determinants of High Cybercrime Countries. *Social Science Computer Review*, 30(4), 470-486, DOI: 10.1177/0894439311422689.

Kigerl, Alex (2009). CAN SPAM Act: An Empirical Analysis. *International Journal of Cyber Criminology*, 3(2), 566-589.

Publications can be read on ResearchGate: https://www.researchgate.net/profile/Alex_Kigerl
Google Scholar Profile: <https://scholar.google.com/citations?user=0gKphwoAAAAJ>

TECHNICAL REPORTS

Hamilton, Zachary, **Alex Kigerl**, John Ursino, & Amber Krushas (2022). Personal Recognizance Interview & Needs Screen (PRINS) Evaluation and Revalidation. *Department of Adult and Juvenile Detention (DAJD)*. King County, WA.

Hamilton, Zachary, **Alex Kigerl**, Jacqueline van Wormer, Breanna Hayden, & Richard Matheson (2021). Spokane Pathways HUB Program Evaluation. *Washington State Institute for Criminal Justice*. Spokane, WA.

Hamilton, Zachary, **Alex Kigerl**., Melissa Kowalski, Douglas Routh, & Xiaohan Mei (2020). PACT Validation and Weighting Results Technical Report Deliverable 2: PACT Responsivity Assessment. *Washington Association of Juvenile Court Administrators*. Olympia, WA.

Hamilton, Zachary & **Alex Kigerl** (2019). Washington State Department of Corrections Prison Classification Project Deliverable 1: Progress Report and Technical Report. *Washington State Institute for Criminal Justice*. Spokane, WA.

van Wormer, Jacqueline, Zachary Hamilton, & **Alex Kigerl** (2019). Snohomish County Juvenile Drug Treatment Courts: Outcome Evaluation. *Washington State Institute for Criminal Justice*. Snohomish County, WA.

Hamilton, Zachary, Mia Abboud Holbrook, & **Alex Kigerl** (2019). City of Spokane Municipal Community Court: Process and Outcome Evaluation. *Washington State Institute for Criminal Justice*. Spokane, WA.

Hamilton, Zachary, **Alex Kigerl**, Xiaohan Mei, Douglas Routh, & Melissa Kowalski (2018). PACT Validation and Weighting Results: Updated PACT Risk and Needs Assessment. *Washington Association of Juvenile Court Administrators*. Olympia, WA.

- McCurley, Carl, & **Alex Kigerl**, Andrew Peterson (2017). Students Before and After Juvenile Court Dispositions: Student Characteristics, Education Progress, Juvenile Court Dispositions, and Education Outcomes in Washington State. *Center for Court Research, Administrative Office of the Courts*. Olympia, WA.
- Hamilton, Zachary & **Alex Kigerl** (2016). Research in Brief – TDOC STRONG-R Development. *Tennessee Department of Corrections*. Nashville, TN.
- Hamilton, Zachary & **Alex Kigerl**. (2016). Iowa Delinquency Assessment (IDA) Validation, Assessment, & Recommendations. *Washington State Institute for Criminal Justice*. Spokane, WA.
- Hamilton, Zachary, & **Alex Kigerl** (2016). Development and Validation of the Nebraska Department of Correctional Services Prison Classification System. *Nebraska Department of Correctional Services*. Lincoln, NE.
- Hamilton, Zachary, Jacqueline van Wormer, **Alex Kigerl**, Christopher Campbell & Brianne Posey (2015). Evaluation of Washington State Department of Corrections (WADOC) Process, Outcome and Cost-Benefit Evaluation Swift and Certain (SAC) Policy. *Washington Department of Corrections*. Olympia, WA.
- Kigerl, Alex** & Zachary Hamilton (2015). Risk Assessment Validation for Washington's Involuntary Treatment and Forensic Commitment Populations – Phase 1 Technical Report. *Washington State Institute for Public Policy*. Olympia, WA.
- Hamilton, Zachary, Jacqueline van Wormer, **Alex Kigerl**, Michael Campagna, Robert Barnoski, Lauren Block & Stephen Lee (2014). The STRONG-R Recidivism Risk Assessment. *Washington State Department of Corrections*. Olympia, WA.
- van Wormer, Jacqueline & **Alex Kigerl** (2014). Washington State Department of Corrections Dog Handlers Outcome Report. *Washington Department of Corrections*. Olympia, WA.
- Hamilton, Zachary, **Alex Kigerl** & Christopher Campbell (2014). The Gender Responsive Initiative's Women's Risk and Needs Assessment Instrument Pilot. *Washington State Department of Corrections*. Olympia, WA.

GRANTS AND CONTRACTS

- Hamilton, Zachary, **Alex Kigerl** (January, 2020). South King County Pretrial Services Outcomes Evaluation. King County, WA. Amount requested: \$49,910; Accepted.
- Hamilton, Zachary, **Alex Kigerl** (2019). California Department of Corrections and Rehabilitation Inmate Classification System. Amount requested: \$698,934; Pending.
- Hamilton, Zachary, **Alex Kigerl**, Dale Willits (April, 2019). A Practical Exploration of the Mechanisms, Group Differences, and Intervention Effects of Desistance. *Department of Justice*. Amount requested: \$526,984; Not funded.

Hamilton, Zachary, **Alex Kigerl** (March, 2019). BJA's Smart Reentry: Focus on Evidence-based Strategies for Successful Reentry from Incarceration to Community. Spokane, WA. Amount requested: \$72,016; Accepted.

Hamilton, Zachary, **Alex Kigerl** (June, 2019). Pioneer Human Services' Community-based Adult Reentry Project. *Department of Justice*. Amount requested: \$96,040; Not funded.

Alex Kigerl (May, 2019). Exploring the Data Horizon: Evaluating the Need for More Frequent Offender Risk Rescoring and Reweighting. *National Institute of Justice*, Artificial Intelligence Research and Development to Support Community Supervision. Amount requested: \$921,548; Not funded.

Hamilton, Zachary, **Alex Kigerl** (February, 2017). Optimizing Juvenile Assessment Performance. *Department of Justice*. Amount requested: \$124,803; Accepted.

Hamilton, Zachary, **Alex Kigerl** (February, 2016). Education and Juvenile Justice Outcomes. *Office of Financial Management*. Olympia, WA. Amount requested: \$90,000; Accepted.

Hamilton, Zachary, **Alex Kigerl**, Jacqueline van Wormer (January, 2016). Washington State Offender Risk Assessment Project. *Washington State Department of Corrections*. Tumwater, WA. \$185,000; Accepted.

Kigerl, Alex (July, 2015). Fraud and Malware through Spam: Evaluating Federal Cybercrime Laws. *National Science Foundation, Law and the Social Sciences Section*, Solicitation 15-514. Amount requested: \$108,845; Not funded.

Hamilton, Zachary & **Alex Kigerl** (October, 2013). Involuntary Treatment Act Risk Assessment. *Washington State Institute of Public Policy*. Olympia, WA. Amount requested: \$80,000; Accepted.

Hamilton, Zachary, & **Alex Kigerl** (October, 2013). Women's Risk-Need Assessment. *Washington State Department of Corrections*. Tumwater, WA. Amount requested: \$68,000; Accepted.

EDITED VOLUMES

Kigerl, Alex (2019). Spam-Based Scams. In Holt, T., & Bossler, A. (Ed.). *The Palgrave Handbook of International Cybercrime and Cyberdeviance*. Palgrave Macmillan, Cham.

Kigerl, Alex (2017). Malicious Spam: The Impact of Prosecuting Spammers on Fraud and Malware Contained in Email Spam. Chapter 3 in Saadawi, T. & Colwell, J. D (Ed.). *Cyber Infrastructure Protection*, Volume 3. Strategic Studies Institute and U.S. Army War College Press.

Kigerl, Alex (2013). Cybercrime: High Tech Crime in the Information Age. Chapter 9 in Helfgott, J. B. (Ed.). *Criminal Psychology*, Volume 2. Westport, CT: Praeger Publishers.

Lutze, Faith & **Alex Kigerl** (2013). The Psychology of Prisoner Reentry. Chapter 13 in Helfgott, J. B. (Ed.). *Criminal Psychology*, Volume 4. Westport, CT: Praeger Publishers.

INVITED PRESENTATIONS

Kigerl, Alex (2015). Malicious Spam: The Impact of Prosecuting Spammers on Fraud and Malware Contained in Email Spam. *Cyber Infrastructure Protection Conference*. City University of New York. New York, NY.

CONFERENCE PRESENTATIONS

Zachary Hamilton, Mia Abboud, **Alex Kigerl**, & Jacqueline van Wormer (2017). The SAFER Pretrial Assessment Tool. *American Society of Criminology*. Philadelphia, PA.

Van Wormer, Jacqueline, Zachary Hamilton, **Alex Kigerl**, Christopher Campbell, & Brianne Posey (2015). Evaluation of Washington State's Swift and Certain Policy for Community Supervision of Offenders. *American Society of Criminology*. Washington, DC.

Kigerl, Alex (2014). Evaluation of the CAN SPAM Act: Testing Deterrence and Other Influences of Email Spammer Behavior Over Time. *American Society of Criminology*. San Francisco, CA.

Hamilton, Zachary, Michael Campagna, **Alex Kigerl** & Elizabeth Tollefsbol (2014). The STRONG-N Stand-Alone Needs Assessment. *American Society of Criminology*. San Francisco, CA.

Hamilton, Zachary, **Alex Kigerl**, Michael Campagna, Robert Barnoski, Lauren Block & Stephen Lee (2014). The Washington State Risk-Needs System: STRONG-R. *Academy of Criminal Justice Sciences*. Philadelphia, PA.

Hamilton, Zachary & **Alex Kigerl** (2014). The Washington State Risk-Needs System for Prison Infractions: STRONG-R-PI. *Academy of Criminal Justice Sciences*. Philadelphia, PA.

Hamilton, Zachary, Ming-Li Hsieh, **Alex Kigerl** & Andrea Walker (2014). The Washington State Risk-Needs System for Sex Offenders: STRONG-R-SO. *Academy of Criminal Justice Sciences*. Philadelphia, PA.

Kigerl, Alex & Zachary Hamilton (2013). The Impact of Transfers between Prisons on Inmate Misconduct: Testing Importation, Deprivation, and Transportation Models. *American Society of Criminology*. Atlanta, GA.

Kigerl, Alex (2013). Infringing Nations: Predicting Software Piracy Rates, BitTorrent Tracker Hosting, and P2P File Sharing Client Downloads Between Countries. *Wiley Research Exposition*. Pullman, WA.

Hamilton, Zachary, **Alex Kigerl** & Zachary Hays (2012). Evaluation of Washington State's Earned Release Date Housing Voucher Program. *American Society of Criminology*. Chicago, IL.

Schaefer, Roger, **Alex Kigerl** & Amber Morczek (2012). Examining the Relationship Between Victim-Offender Relationship and Recidivism Type Among Child-Based Sex Offenders. *American Society of Criminology*. Chicago, IL.

SKILLS

Statistical Packages and Programming: R, SPSS with Python, SAS, Gurobi, Stata

- Statistical methods: Time series, panel data models, count models, cost-benefit analysis, event-history analysis, multi-level modeling, item response theory, path models, trajectory modeling, quasi-experimental designs (weighting and matching), imputation, and optimization
- Supervised machine learning: Penalized & boosted regression, neural networks, K-nearest neighbors, support vector machines, naïve Bayes, and random forests
- Unsupervised machine learning: Hierarchical agglomerative clustering, k-means clustering, latent Dirichlet allocation, topic modeling, and latent class analysis

Databases: SQL, TSQL, SQL Server, MySQL, SQLite, MongoDB, Access

Computer Programming and Web Development

- Knowledge of multiple programming and markup languages for web, desktop, and mobile based applications
- Datasets: Experience building datasets with third generation programming languages such as PERL, Python, VBA, Java, and R
- Surveys: Programmed both desktop and online surveys to collect self-report data in C++, C#, and PHP

Distributed Computing Systems: AWS, Python/Fabric, SLURM, MapReduce, Hadoop, HDFS

Visualization: Tableau, Sisense, R/ggplot2

Microsoft Office Suite: VBA programming skills for writing macros in Access, Excel, Word, and Outlook

EXPERIENCE

- 2020.10 – Present **Research Associate**, University of Nebraska Omaha, Omaha, NE
- Develop risk assessments which are used across the US at the county, state, and federal level
 - As part of a federal grant, constructed a dataset of risk assessments administered to juvenile offenders across 10 different states in the US, totaling over 250,000 individual youth, to further improve on risk forecasting methods
 - Developed custom probabilistic matching software in R to synthesize multiple data sources lacking common identifiers to facilitate dozens of research projects
- 2018.08 – Present **Data Scientist**, Vant4ge, Salt Lake City, UT
- Curate and preprocess client database exports to build final datasets for analysis
 - Develop and deploy patented machine learning algorithms to build risk assessment products
 - Provide diagnostic support to address questions about existing data sources

- 2014.08 – 2020.08 **Assistant Research Professor**, Washington State University, Spokane, WA
Data Scientist, Washington State Institute for Criminal Justice Research
- Deployed statistical models on WSU's Kamiak high performance computing cluster using SLURM
 - Provide cost-benefit analyses evaluating government policies, saving millions in tax dollars
 - Designed a bootstrapping feature selection algorithm, for the STRONG-R risk assessment
- 2019.01 – 2019.12 **Research Consultant**, National Institute of Justice
- Hired to implement the requirements of the First Step Act to build a risk and needs assessment for the Bureau of Prisons (BOP)
 - Built the analytic datasets from the BOP administrative database
 - Wrote and deployed custom machine learning tool to develop the PATTERN, a new risk assessment to be administered to all federal prisoners
- 2012.01 – 2014.07 **Research Assistant**, Washington State University, Pullman, WA
- Managed the data warehouse for the Washington State Department of Corrections database provided to the Criminal Justice and Criminology department at WSU
 - Built datasets from among the 400+ tables of the database upon faculty request for research purposes using Python, SPSS, and SAS as needed
 - Conducted statistical analysis for select projects in R

SERVICE

Ad Hoc Reviewer	<i>Justice Quarterly</i>	2022
Ad Hoc Reviewer	<i>Journal of Cyber Policy</i>	2022
Ad Hoc Reviewer	<i>Social Network Analysis and Mining</i>	2021
Ad Hoc Reviewer	<i>Social Science Computer Review</i>	2021
Ad Hoc Reviewer	<i>Social Science Computer Review</i>	2020
Ad Hoc Reviewer	<i>Journal of Experimental and Theoretical Artificial Intelligence</i>	2019
Ad Hoc Reviewer	<i>Computers in Human Behavior</i>	2018
Ad Hoc Reviewer	<i>Criminology and Public Policy</i>	2017
Ad Hoc Reviewer	<i>Sociological Spectrum</i>	2016
Ad Hoc Reviewer	<i>Justice Quarterly</i>	2016
Ad Hoc Reviewer	<i>International Journal of Cyber Criminology</i>	2016
Ad Hoc Reviewer	<i>American Journal of Criminal Justice</i>	2015
Ad Hoc Reviewer	<i>Journal of Criminal Justice</i>	2014
Ad Hoc Reviewer	<i>International Journal of Cyber Criminology</i>	2014
Ad Hoc Reviewer	<i>International Journal of Sociology and Anthropology</i>	2013
Ad Hoc Reviewer	<i>Annals of Telecommunications</i>	2013
Ad Hoc Reviewer	<i>Criminal Justice Policy Review</i>	2013
Ad Hoc Reviewer	<i>Information</i>	2012
Ad Hoc Reviewer	<i>Social Science Computer Review</i>	2012
Ad Hoc Reviewer	<i>International Journal of Cyber Criminology</i>	2011

AWARDS

2014 Outstanding Doctoral Student, Washington State University, Department of Criminal Justice and Criminology