

University of Minnesota - Twin Cities
CLINICAL SCIENCE & PSYCHOPATHOLOGY
RESEARCH PROGRAM



Department of Psychology
75 East River Road, Minneapolis, Minnesota
<http://www.psych.umn.edu>

Christopher J. Patrick, Ph.D., Director

*The University of Minnesota's Clinical Psychology Program has been accredited by the American Psychological Association *since 1948. It began training top-quality clinical psychological science researchers even earlier. For many years the program has enjoyed an extremely good reputation and the distinction of being considered among the best for clinical psychology.*

(*phone # for APA's Committee on Accreditation is- (202) 336-5979)

Relevant information can also be found at our program web site :<http://www.psych.umn.edu/areas/clinical/index.htm>

Core Clinical Psychology Faculty

Bruce N. Cuthbert, Professor
William M. Grove, Associate Professor
William G. Iacono, Professor
Monica M. Luciana, Associate Professor
Angus MacDonald III, Assistant Professor
Ann Masten, Professor
Christopher J. Patrick, Professor, Director

Developmental Psychology & Clinical Science (DPCS) Faculty

Dante Cicchetti, Professor, ICD*
Byron Egeland, Professor ICD
Canan J. Karatekin, Associate Professor ICD
Ann Masten, Professor, Director ICD
L. Alan Sroufe, Professor ICD
Rich Weinberg, Professor ICD
*ICD: Institute of Child Development
<http://education.umn.edu/icd/default.html>

Adult Clinical Emeritus Faculty

Norman Garnezy
Irving Gottesman
Gloria R. Leon
Auke Tellegen

Program Overview

As our name implies, our program is designed to train clinical scientists. We combine training in assessment and intervention techniques with a solid grounding in psychopathology research to produce graduates prepared for careers in which research has an important component. Although our Clinical Science and Psychopathology Research (CSPR) program supports a wide variety of career choice outcomes, we expect students to be attracted to our program because they are attracted to the research of our faculty and because they are more interested in research than practice-oriented careers. Throughout their graduate careers, our students frequently contribute to the scientific literature and typically participate in the meetings of scholarly societies.

We offer training in both adult and child clinical psychology through a program that is jointly operated by the Department of Psychology and the Institute of Child Development. Students with primary interests in developmental psychopathology who are seeking specialty training in child psychology are admitted to the Developmental Psychopathology and Clinical Science track of the program through the [Institute of Child Development](#). Students who are interested in adult psychopathology (or childhood psychopathology but who do not wish to develop specialized expertise in child development) are admitted to the general CSPR program through the Department of Psychology. Child clinical students spend the first year of the program in a core child development sequence at ICD, then take the basic clinical core sequence in their second year. All students in the program take their practicum placements in clinical settings around the community. This provides students with experience in many varieties of clinical work, including both assessment and treatment techniques, and a knowledge of contemporary clinical practice that is invaluable for the internship and for planning research studies.

Reminder: If your primary interest involves work with children, you must apply directly to the Institute of Child Development.

Clinical Science Faculty Research Interests

Practice and Research in the Program

We want to highlight several important facts for the prospective applicant to consider about our program.

- First, we are a highly research-oriented program and do not have as our primary goal the training of full-time clinicians. We regard the relationship between science and practice as follows: Practice with clients gives psychologists hypotheses that can be tested in research. Therefore, clinical scientists need to have excellent clinical skills, so that their research is guided by, and remains relevant to, clinical realities. However, clinical experience alone has almost never proved anything important about the proper classification of, best ways to assess, or etiology of, major mental disorders. This is because of well-documented biases and weaknesses in the process of forming judgments based solely on unsystematic and unquantified clinical experience. By contrast, only systematically conducted, basic science or applied clinical research can have "the final say" about such matters.

- Second, our program covers many disorders and studies them by many methods. Disorders from cocaine addiction to schizophrenia are studied, using animal models, twin studies, family studies, and longitudinal follow-ups. It is a rare student who cannot find a fascinating research topic to study in our program.

- Third, we are prolific. Our output of scientific papers per faculty member is very high, and our faculty both win major awards and have high citation counts (a measure of the influence of one's publications).

Students who come to Minnesota should expect to work hard, but this hard work can net them credit for a lot of high-quality, high-visibility research.

WHO SHOULD APPLY TO OUR PROGRAM

All students entering the Ph.D. program are expected to have:

- a strong undergraduate background in psychology
- courses in abnormal psychology and statistics
- a strong record of previous achievement in research
- excellent grades and

- high test scores (GRE) are helpful, but are not as important as a record of accomplishments in research.

We find that students who fare best and are happiest in our program are those who

- come with an agenda
- are ready to work with one or more particular faculty members

Student Adviser Assignments

Adviser assignments differ somewhat for students admitted to the program through Psychology compared with those admitted through the Institute of Child Development. Those entering through Psychology are admitted to work from the start with a specific member of the core CSPR faculty who serves as the student's academic and research adviser. Students entering through the Child Development Institute are admitted by the faculty of the Institute as a whole and commence their training with dual academic advisors, one from child development and the other from clinical psychology. Child students decide on a research mentor part way through their initial year in the program based on experience gained with different child development faculty.

Program Options

Our Clinical Science and Psychopathology Research Training Program is designed to accommodate a wide variety of interests in clinical psychology. However, it is possible to receive more specialized clinical training as outlined in the two options described below.

1. Adult Clinical Science Training

Our program combines rigorous training in assessment and intervention techniques with a solid grounding in psychopathology research. Although graduates from our program will find themselves prepared for various applied and research careers, the program is designed to train students who wish to become academic clinical psychologists or research scientists. Our ties to psychologists in affiliated departments, area hospitals, and mental health centers make it possible for us to offer students a broad array of research and clinical experiences. This allows us to accommodate almost any research interest or clinical training need that our students may have. However, we are especially strong in the psychopathology or personality research areas listed below. These areas of emphasis

collectively represent the research interests of the clinical faculty members listed at the end of this section.

Neurobehavioral Research Traineeships

Located within the main adult component of our clinical program is a specialized traineeship funded by a National Institute of Mental Health (NIMH) training grant that has as its focus the training of biologically sophisticated clinical psychologists. The purpose of this NIMH-funded traineeship is to produce clinical students who can effectively integrate neurobiology, behavior genetics, and psychophysiology in the study of psychopathology and personality. Clinical psychology graduate students with biological interests typically apply for this NIMH traineeship at the end of their second year in the program. Traineeships are awarded competitively, based on merit, for two years, allowing the advanced clinical student to develop specialized skills in this area. In addition to course work and seminars, trainees run a colloquium series featuring nationally recognized psychopathology researchers and receive funds to travel to national conferences to present research findings.

2. Developmental Psychology and Clinical Science (DPCS) Training

As mentioned above, nested in our clinical program is a specialty track in child clinical psychology, the Developmental Psychopathology and Clinical Science (DPCS) track, run collaboratively by the Department of Psychology (College of Liberal Arts) and the Institute of Child Development (College of Education). Students appropriate for this program are those with primary interests in children and adolescents, strongly emphasizing developmental psychopathology. Students in the DPCS track of the program complete the same core clinical curriculum as adult CSPR students, but follow the preliminary examination and other general requirements of the Institute of Child Development and receive a Ph.D. in Child Psychology. Courses in the Institute of Child Development and in the Department of Psychology may be taken as electives by all clinical science students. **If your primary interest involves work with children, you must apply directly to the Institute of Child Development, 51 East River Road, University of Minnesota, Minneapolis, MN 55455 (or call 612-624-0526).**

PROGRAM COSTS AND EDUCATION/TRAINING OUTCOMES

The following information is current as of August, 2007:

A. Program Costs

[Note: Students are normally admitted to the program with some form of financial support that includes coverage of full-time tuition expenses; available support mechanisms include fellowships, traineeships, research assistantships, and teaching assistantships.]

1. Full time student tuition (6-14cr): \$4,870.00 per semester for resident tuition; \$8,200.00 per semester for non-residents
2. Tuition per credit hour for part-time students: \$811.67 per credit for residents; \$1,403.17 for non-residents
3. Additional student fees (beyond tuition costs): \$324.10 per semester

Detailed information regarding tuition and fees at the U of M can be found at the following web site:

http://www.onestop.umn.edu/onestop/Tuition_Billing/Tuition_Rates.html and at http://www.onestop.umn.edu/onestop/Tuition_Billing/Tuition_Rates/Student_Services_Fee.html

Information about funding for graduate training can be found in Appendix C of this document and at the following web site:

<http://online.psych.umn.edu/grads/fellowawards/fellowawards.htm#apf>

B. Time to Program Completion

Program Completion data for the past 7 years (2000-2007):

a. *Students entering the program with a bachelor's degree: 52*

Number of students graduating during the period 2000-07: 41

Mean time to completion from time of program entrance: 6.7 years

Median time to completion: 5.8 years

% of students who completed the program in...

<5 years: 25% 5 years: 20% 6 years: 28% 7 years: 15% >7 years: 12%

b. *Students entering the program with a master's degree: 3*

Number of students graduating during the period 2000-07: 2

Mean time to completion from time of program entrance: 5.3 years

Median time to completion: 5.3 years

% of students who completed the program in...

<5 years: 0% 5 years: 100% 6 years: 0% 7 years: 0% >7 years: 0%

C. Internship Application Outcomes

	06-07	05-06	04-05	03-04	02-03	01-02	00-01
Number of Applicants	5	7	6	4	12	5	5
Number (%) who Obtained Internships	4 (80%)	7 (100%)	5 (83.3%)	4 (100%)	12 (100%)	5 (100%)	5 (100%)
Number (%) who Obtained Paid Internships	4 (80%)	7 (100%)	5 (83.3%)	4 (100%)	12 (100%)	5 (100%)	5 (100%)
Number (%) who Obtained APPIC Member Internships	4 (80%)	7 (100%)	5 (83.3%)	4 (100%)	12 (100%)	5 (100%)	5 (100%)
Number (%) who Obtained APA/ CPA Accredited Internships	4 (80%)	7 (100%)	5 (83.3%)	4 (100%)	12 (100%)	5 (100%)	5 (100%)
Number (%) who Obtained Two Half-Time Internships	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

D. Attrition from Program

Number of students entering the program over the past 7 years (2000-2007): 55
Students leaving the program (without graduating) over the past 7 years: 3 (5.45%)

E. Training Outcomes: Data from Survey of Program Graduates (1998-2007)

1. RESEARCH PRODUCTIVITY

Publications

Total: M = 9.6, median = 8; 94% have one or more publications.
Since graduation – M = 6.4, median = 2; 70% have one or more

Conference presentations

Total: M = 13.0, Median = 13; 89% have one or more presentations
Since graduation: M = 6.5, median = 3; 69% have one or more.

2. EVALUATION OF RESEARCH TRAINING

Graduates were asked to rate on a 5-point scale, with 5 representing ‘most,’ “how helpful” the program was in preparing them for a research career regardless of the nature of their current job.

With regard to how helpful the program was in terms of preparing them for a research career, 96% gave a rating of either 4 or 5.

3. JOB STATISTICS

Academic/research position –	35%
Academic/teaching position –	6%
Research associate/fellow –	7.5%
Research/clinical postdoc –	7.5%
Research/clinical psychologist –	23%
Exclusively clinical psychologist –	15%
Clinical/administrative position -	4%
Clinically oriented postdoc -	2%

Interesting notes: 35% now have tenure or are in a tenure-track (assistant or associate professor) job, and research is a job component for 79% of the positions held by our grads. Thirty percent have held at least one research grant since graduation. Forty percent are currently involved in teaching, 19% in administration, and 73% in applied clinical work.

4. LICENSURE STATISTICS

Number of students graduating from the program between 1997-2005 = 69

Number of these program graduates who have obtained licensure = 45/69 = 65%

In a survey of our graduates from 1998-2007, 94% had one or more publications (the median number of authored papers was eight) and 89% had one or more conference presentations (the median number of presentations was 13).

Over half had jobs with a strong research focus (more than a third had academic tenure or tenure-track jobs), and about three quarters had jobs that involved carrying out research.

Financial support for graduate students includes fellowships, teaching assistantships, research assistantships, and traineeships associated with our "Neurobehavioral" training program. Essentially all of our graduate students receive financial support from one or more of these sources. These financial packages include tuition remission along with a financial stipend to cover living expenses. Continued financial support in second and later years in the program is, of course, dependent on merit. However, essentially all students have quarter-time (50% tuition remission) or half-time (100% tuition remission) appointments through 4 years of graduate school.

MEMBERSHIP IN THE ACADEMY OF CLINICAL SCIENCE

In addition to being accredited by the American Psychological Association, the Clinical Science and member of the Academy of Psychological Clinical Science, which is a coalition of doctoral training programs that share a common goal of producing and applying scientific knowledge to the assessment, understanding, and amelioration of human problems. Membership in the Academy is granted only after a thorough peer review process. Membership in the Academy indicates that the Clinical Science and Psychopathology Research program at the University of Minnesota is committed to excellence in scientific training, and to using clinical science as the foundation for designing, implementing, and evaluating assessment and intervention procedures. The program was one of those involved in starting the Academy.

FACULTY RESEARCH INTERESTS AND SELECTED PUBLICATIONS

Adult Psychology Faculty

Bruce N. Cuthbert, Ph. D.

The goal of Dr. Cuthbert's research is to develop new psychophysiological models and measures of affective processes, and to employ the findings in studies directed at an improved understanding of mood and anxiety disorders. The long-term goal of such a translational research program is to explain these internalizing disorders in terms of interactions among the major motivational systems of the brain. A particular focus of this work involves the explication of the frequent comorbidity observed between anxiety and mood disorders, and the development of models to account for the fact that anxiety occurs before depression in a majority of cases.

Lang, P. J., McTeague, L. M., & Cuthbert, B. N. (2007). Fear, anxiety, depression, and the anxiety disorder spectrum: A psychophysiological analysis. In T. Baker, R. Bootzin, & T. Treat (Eds.), Psychological clinical science: Recent advances in theory and practice. Integrative perspectives in honor of Richard M. McFall. New York: Taylor & Francis. (pp. 167-196)

Cuthbert, B. N. (2007). Translational research and the future of psychological clinical science. In T. Baker, R. Bootzin, & T. Treat (Eds.), Psychological clinical science: Recent advances in theory and practice. Integrative perspectives in honor of Richard M. McFall. New York: Taylor & Francis. (pp. 321-348)

Lang, P. J., McTeague, L. M., & Cuthbert, B. N. (2006). Fear, startle, and the anxiety disorder spectrum. In B. Rothbaum (Ed.), Pathological anxiety: Emotional processing in etiology and treatment. New York: Guilford Press. (pp. 56-77)

Steffens, D. C., Otey, E. O., Alexopoulos, G. S., Butters, M. A., Cuthbert, B. N., Ganguli, M., et al. (2006). Perspectives on depression, mild cognitive impairment, and cognitive decline. Archives of General Psychiatry, 63, 130-138.

Blumenthal, T. D., Cuthbert, B. N., Filion, D. L., Hackley, S. Lipp, O. V., & van Boxtel, A. (2005). Committee report: Guidelines for human startle eyeblink electromyographic studies. Psychophysiology, 42, 1-15.

Cuthbert, B. N. (2005). Dimensional models of psychopathology: Research agenda and clinical utility. Journal of Abnormal Psychology.

Schupp, H. T., Cuthbert, B. N., Bradley, M. M., Hillman, C. H., Hamm, A. O., & Lang, P. J. (2004). Brain processes in emotional perception: Motivated attention. Cognition and Emotion, 18, 593-611.

First, M. B., Bell, C. C., Cuthbert, B. N., Krystal, J. H., et al. (2002). Personality disorders and relational disorders: A research agenda for addressing crucial gaps in DSM. In D. J. Kupfer (Ed.), A research agenda for DSM-V. Washington, DC: American Psychiatric Association Press, Inc. (pp. 123-200.)

Cuthbert, B. N., Schupp, H. T., Bradley, M. M., Birbaumer, N., & Lang, P. J. (2000). Brain potentials in affective

picture processing: Covariation with autonomic arousal and affective report. *Biological Psychology*, *52*, 95-111.

William M Grove, Ph.D., L.P.

Dr. Grove's interests include clinical judgment and psychological assessment (clinical vs. statistical prediction, validity of projective tests such as Rorschach, scientific basis of clinical judgment/assessment in forensic psychology), and the diagnosis, classification, and behavior genetics of major forms of adult-onset psychopathology (e.g., schizophrenia, severe affective disorders). He also has strong methodological interests in psychometrics (especially of diagnostic assessments) and taxometrics (i.e., numerical classification schemes for testing theories postulating latent categorical sources of individual differences).

Robiner, W.N., Bearman, D., Berman, M., Grove, W.M., Colón, E., Armstrong, J., Mareck, S., & Tanenbaum, R. (2003). Prescriptive authority for psychologists: Despite traditional deficits in education and knowledge? *Journal of Clinical Psychology in Medical Settings*, *10*, 211-222.

Grove, W.M. (2004). The MAXSLOPE taxometric procedure: Mathematical derivation, parameter estimation, consistency tests. *Psychological Reports*, *95*, 517-550.

Calkins, M.E., Curtis, C.E., Iacono, W.G., & Grove, W.M. (2004). Antisaccade performance is impaired in medically and psychiatrically healthy biological relatives of schizophrenics. *Schizophrenia Research*, *71*, 167-178.

Grove, W.M. (2004). Comment on Meehl's "Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology." *Journal of Applied and Preventive Psychology*, *11*, 31-34.

Grove, W.M. (2004). Introduction to P.E. Meehl's "Psychology: Does our heterogeneous subject matter have any unity?" *Minnesota Psychologist*, *2*.

Grove, W.M. (2005). Clinical versus statistical prediction: The contribution of Paul E. Meehl. *Journal of Clinical Psychology*, *61*, 1233-1243.

Garb, H.N., & Grove, W.M. (2005). On the merits of clinical judgment: Comment. *American Psychologist*, *60*, 658-659. [Letter]

Grove, W.M., & Waller, N.G. (2006). Problem sets and solutions for Bayes' Theorem, base rates, and prediction. In Waller, N.G., Yonce, L.J., Grove, W.M., Faust, D., & Lenzenweger, M. (Eds.), (2006), *A Paul Meehl reader: Essays on the practice of scientific psychology*. Mahwah, NJ: Lawrence Erlbaum Associates, pp. 237-247.

Grove, W.M. (2006). Meehl as colleague. *Journal of Abnormal Psychology*, *115*, 219-220.

Grove, W.M., & Lloyd, M. (2006). Meehl's contribution to clinical versus statistical prediction. *Journal of Abnormal Psychology*, *115*, 192-194.

Schmidt, A.T., Waldow, K.T., Grove, W.M., Salinas, J.A., & Georgieff, M.K. (2007). Dissociating the long-term effects of fetal/neonatal iron deficiency on three types of learning in the rat. *Behavioral Neuroscience*, *121*, 475-482.

Grove, W.M. (2007). Dimensional analyses of taxonomic data. *Psychological Reports*, *101*, 617-625.

Vrieze, S., & Grove, W.M. (2008). Predicting sex offender recidivism. I. Correcting for item overselection and accuracy overestimation in scale development. II. Sampling error-induced attenuation of predictive validity over base rate information. *Law and Human Behavior*, *32*, 266-278.

William G. Iacono, Ph.D.

Dr. Iacono's research is focused on the identification and evaluation of psychophysiological and other characteristics for their potential as indices of genetic risk for the development and course of their disorder. Current research includes the study of preadolescent, adolescent, and young adult twins and adoptees at risk for developing substance use and related disorders.

Legrand, L.N., Iacono, W.G., & McGue, M. (2005). Predicting addiction. *American Scientist*, *93*, 140-147.

McGue, M., & Iacono, W.G. (2005). The association of early adolescent problem behavior with adult psychopathology. *American Journal of Psychiatry*, *162*, 1118-1124.

Herndon, R. W., & Iacono, W.G. (2005). Psychiatric disorder in the children of antisocial parents. *Psychological Medicine*, *35*, 1815-1824.

Iacono, W.G., & Patrick, C.J. (2006). Polygraph ("lie detector") Testing: Current status and emerging trends. In I.B. Weiner & A.K. Hess (Eds.), *The handbook of forensic psychology (3rd ed.)* pp. 552-588. Hoboken, NJ: Wiley.

Iacono, W.G., & Lykken, D.T. (2006). The Case Against Polygraph Tests. In D.L. Faigman, D.H. Kaye, M.J. Saks, J. Sanders, & E.K. Cheng (Eds.), *Modern Scientific Evidence: The Law and Science of Expert testimony. Volume 4.* (pp. 831-895). Eagan, MN: Thomson/West.

MacDonald, A. W. III, & Iacono, W. G. (2006). Toward an integrated perspective on the etiology of psychopathy. In Patrick, C. J. (Ed), *Handbook of psychopathy* (pp. 375-385). New York: Guilford Press.

- Iacono, W.G., & McGue, M. (2006). Association between P3 event-related potential amplitude and adolescent problem behavior. *Psychophysiology*, *43*, 465-469.
- Iacono, W.G., McGue, M., & Krueger, R.F. (2006). Minnesota Center for Twin and Family Research. *Twin Research and Human Genetics*, *9*, 978-984.
- Bierut, L., Cubells, J.F., Iacono, W.G., Li, M.D., Madden, P.A.F., Nelson, E.C., Pollock, J.D., Swan, G.E., & Vanyukov, M. (2007). Genetic research and smoking behavior. *JAMA*, *297*, 809.
- Keyes, M.A., Iacono, W.G., & McGue, M. (2007). Early onset problem behavior, young adult psychopathology, and contextual risk. *Twin Research & Human Genetics*, *10*, 45-53.
- Iacono, W.G. (2007). Polygraph testing. In E. Borgida & S.T. Fiske (Eds.). *Beyond common sense: Psychological science in the courtroom*. (pp. 219-235). Oxon, UK: Blackwell.
- Hicks, B.M., Blonigen, D.M., Kramer, M.D., Krueger, R.F., Patrick, C.J., Iacono, W.G., & McGue, M. (2007). Gender differences and developmental change in externalizing disorders from late adolescence to early adulthood: A longitudinal twin study. *Journal of Abnormal Psychology*, *116*, 433-447.
- Klump, K.L., Perkins, P.S., Burt, S.A., McGue, M., & Iacono, W.G. (2007). Puberty moderates genetic influences on disordered eating. *Psychological Medicine*, *37*, 627-634.
- Loney, B.R., Taylor, J., Butler, M.A. & Iacono, W.G. (2007). Adolescent psychopathy features: 6-year temporal stability and the prediction of externalizing symptoms during the transition to adulthood. *Aggressive Behavior*, *33*, 242-252.
- Marmorstein, N.R., von Ranson, K.M., Iacono, W.G., & Malone, S.M. (2008). Prospective associations between depressive symptoms and eating disorder symptoms among adolescent girls. *International Journal of Eating Disorders*, *41*, 118-123.
- Derringer, J., Krueger, R.F., McGue, M., & Iacono, W.G. (2008). Age and sex effects on the etiology of substance use in 11- to 17-year-old twins. *Addiction*, in press.
- Bemmels, H.R., Burt, S.A., Legrand, L.N., Iacono, W.G., & McGue, M. (2008). The heritability of life events: An adolescent twin and adoption study. *Twin Research and Human Genetics*, *11*, 257-265.
- Carlson, S.R., & Iacono, W.G. (2008). Deviant P300 amplitude development in males is associated with paternal externalizing psychopathology. *Journal of Abnormal Psychology*, in press.
- Dr. Luciana's research involves brain-behavior relationships in adults and children, particularly the relationship between neurotransmitter activity and behavior. One particular area of interest is to examine behaviors mediated by the prefrontal cortex, including working memory, planning, and affective control. Developmental studies of prefrontal maturation in normal children as well as children with neurological impairments, ages 4 to 18, are also in progress. Clinical interests include the neurobiology of affective disorders.
- Burgund, ED, Marsolek, CJ, & **Luciana, M.** (2003) Serotonin levels influence patterns of implicit memory, *Neuropsychology*, *17*(1), 161-170.
- Luciana, M. (2003) Practitioner Review: Computerised assessment of neuro-psychological function in children: clinical and research applications of the Cambridge Neuropsychological Testing Automated Battery (CANTAB). *Journal of Child Psychology and Psychiatry*, *44*(0), 1-15.
- Luciana, M. (2003). Cognitive development in children born preterm: Implications for theories of brain plasticity following early injury *Development and Psychopathology*, *15*, 1017-1047.
- Hanson, K. and Luciana, M (2004). Neurocognitive function in recreational use of MDMA: The importance of clinically-significant patterns of use. *Psychological Medicine*. *34*, 229-246.
- Luciana, M., Hanson, KL and Whitley, C (2004). A preliminary report on dopamine system reactivity in PKU: Acute effects of haloperidol on neuropsychological, physiological, and neuroendocrine functions. *Psychopharmacology*. *175*, 18-25.
- Luciana, M., Conklin, H., Hooper, C., & Yarger, R. (2005). The development of nonverbal working memory processes in adolescents: Different maturational trajectories for recall versus executive control. *Child Development*. *76*(3), 697-712.
- Scott, L, Luciana, M. & Nelson, CA. (2005) Electrophysiological correlates of facial self-recognition in young adults. In the official journal of the Romanian Association of Cognitive Sciences: *Cognition, Brain, Behavior*, special issue on Developmental Cognitive Neuroscience.
- Wahlstrom, D.B., White, T., Hooper, C.J., Vrshek-Schallhorn, S., Oetting, W.S., Brott, M.J. and Luciana, M. (2007). Variations in the Catechol-O-Methyltransferase polymorphism and prefrontally-guided behaviors in adolescents. *Biological Psychiatry*, *61*(5), 626-632.
- Olson, E. and Luciana, M. (2008). The development of prefrontal cortex functions in adolescence: theoretical models and a possible dissociation of

Monica Luciana, Ph.D.

dorsal versus ventral subregions. In Nelson, C.A. and Luciana, M. *The Handbook of Developmental Cognitive Neuroscience*, 2nd Edition. MIT Press.

Hanson, K.L., Luciana, M., Sullwold, K. (2008). Reward-related decision-making deficits among MDMA and other drug users. *Drug and Alcohol Dependence*, 96(1), 99-110.

Nelson, CA & Luciana, M. (2008) *Handbook of Developmental Cognitive Neuroscience*, 2nd Edition. MIT Press.

Angus W. MacDonald III, Ph.D.

The goal of Dr. MacDonald's Translational Research in Cognitive and Affective Mechanisms (TRiCAM) laboratory is to draw from advances in cognitive neuroscience and genetics to push forward our understanding of psychosis. This approach begins with an array of studies designed to understand basic cognitive and biological processes associated with the symptoms of schizophrenia. Much continuing work focuses on the role of cognitive control, prefrontal cortical impairments and their influence on disorganization. A number of new approaches focus on factors that contribute to emotional processes, including the development of trust, and conversely, delusional paranoia. To better understand both normal and abnormal cognition, we are working to improve our computational approaches to the analysis of neuroimaging data, to develop methods to control for psychometric confounds, and to integrate advances from other disciplines, including economics, computer science, neuroscience, molecular genetics and MR physics.

MacDonald, A.W., III, Cohen, J.D., Stenger, V.A., & Carter, C.S. (2000). Dissociating the role of the dorsolateral prefrontal cortex and anterior cingulate cortex in cognitive control. *Science*, 288, 1835-1838.

MacDonald, A.W., III, Pogue-Geile, M.F, Johnson, M.K., & Carter, C.S. (2003). A specific deficit in context processing in the unaffected siblings of patients with schizophrenia. *Archives of General Psychiatry*, 60, 57-65.

MacDonald, A.W., III, & Carter, C.S. (2003). Event-related fMRI study of context processing in the dorsolateral prefrontal cortex of patients with schizophrenia. *Journal of Abnormal Psychology*, 112, 689-697.

Kerns, J.G., Cohen, J.D., MacDonald, A.W., III, Cho, R.Y., Stenger, V.A., & Carter, C.S. (2004). Anterior cingulate conflict monitoring and adjustments in control. *Science*, 303, 1023-1026.

MacDonald, A.W., III, Carter, C.S., Kerns, J.G., Ursu, S., Barch, D., Holmes, A.J., Stenger, V.A., & Cohen, J.D. (2005). Specificity of prefrontal dysfunction and context processing deficits to schizophrenia in an unmedicated first-episode psychotic sample. *American Journal of Psychiatry*, 162, 475-484

MacDonald, A.W., III, Becker, T.M., Carter, C.S. (2006). Functional magnetic resonance imaging study of cognitive

control in the healthy relatives of schizophrenia patients. *Biological Psychiatry*, 60, 1241-1249.

MacDonald, A.W., III, & Iacono, W.G. (2006). Toward an integrated etiology of psychopathy. In C.J. Patrick (Ed.), *Handbook of Psychopathy*. New York: Guilford Press. pp. 375-385.

MacDonald, A.W., III, & Chafee, M.V. (2006). Translational and developmental perspective on NMDA synaptic deficits in schizophrenia. *Development & Psychopathology*, 18, 853-876.

MacDonald, A.W., III, Carter, C.S., Flory, J.D., Ferrell, R.E., Manuck, S.B. (2007). COMT Val158Met and executive control: a test of the benefit of specific deficits to translational research. *Journal of Abnormal Psychology*, 116, 306-312.

MacDonald, A.W., III & Kang, S.S. (in press). Misinterpreting schizophrenia relatives' impairments. *American Journal of Human Genetics B: Neuropsychiatric Genetics*.

MacDonald, A.W., III, & Hurdelbrink, J.A. (in press). Functional imaging in clinical assessment? The rise of neurodiagnostics. In J. Butcher (Ed.), *Oxford Handbook of Personality Assessment*. Oxford University Press.

MacDonald, A.W., III (in press). A sneaking suspicion: The semantics of emotional beliefs and delusions. Commentary on Rogers & McClelland (2004). *Brain and Behavior Sciences*.

Matthew McGue, Ph.D.

Dr. McGue is a human behavioral geneticist and has two major research interests. The first concerns the etiology of alcoholism and related behavioral disorders, which he is pursuing, along with Dr. Iacono, in the Minnesota Twin Family Study, a prospective study of 1400 adolescent twin pairs and their parents. The second concerns aging, which he is pursuing with both a cross-sectional study of elderly Minnesota twins as well as a longitudinal study of elderly Danish twins.

Christensen, K., McGue, M., Yashin, A.I., Iachine, I., Corder, L., Holm, N. & Vaupel, J.W. (2000). Genetic and environmental influences on functional abilities in Danish twins aged 75 years and older. *Journal of Gerontology, Series A - Biological Sciences*, 55: M446-M452.

McGue, M. & Christensen, K. (2001). The heritability of cognitive functioning in the very old: evidence from Danish twins aged 75 years and older. *Psychology and Aging*, in press.

Nybo, H., Gaist, D., Jeune, B., Bathum, L., McGue, M., Vaupel, J.W., & Christensen, K. (2001). The Danish 1905-Cohort: A genetic-epidemiological nationwide survey. *Journal of Aging and Health*, 13: 32-46.

Finkel, D. & McGue, M. (2007). Genetic and environmental influences on intraindividual variability in reaction time. *Experimental Aging Research*, 33: 13-35.

McGue, M., Keyes, M., Sharma, A., Elkins, I., Legrand, L., Johnson, W. & Iacono, W.G. (2007). The environments of adopted and non-adopted youth: Evidence on range restriction from the Sibling Interaction and Behavior Study (SIBS). *Behavior Genetics*, in press.

McGue, M. (2007). Early drinking and the development of alcoholism: Comment on Sartor et al. (2007). *Addiction*, 102: 188-189.

Christiansen, L., Tan, Q. H., Iachina, M., Bathum, L., Kruse, T. A., McGue, M. & Christensen, K. (2007). Candidate gene polymorphisms in the serotonergic pathway: Influence on depression symptomatology in an elderly population. *Biological Psychiatry*, 61(2), 223-230.

Hicks, B. M., Bernat, E., Malone, S. M., Iacono, W. G., Patrick, C. J., Krueger, R. F. & McGue M. (2007). Genes mediate the association between P3 amplitude and externalizing disorders. *Psychophysiology*, 44(1), 98-105.

Burt, S. A., McGue, M., Carter, L. A., & Iacono, W. G. (2007). The different origins of stability and change in antisocial personality disorder symptoms. *Psychological Medicine*, 37(1), 27-38.

McGue, M. & Christensen, K. (2007). Social activity and healthy aging: A study of aging Danish twins. *Twin Research and Human Genetics*, in press.

McGue, M. & Johnson, W. (2007). Genetics of cognitive aging. In Craik, F.I.M. & Salthouse, T.A. (eds). *Handbook of Cognitive Aging*, Third Edition. Erlbaum, in press.

McGue, M. & Iacono, W.G. (2007). The adolescent origins of substance use disorders. *International Journal of Methods in Psychiatric Research*, in press.

Johnson, W., Hicks, B.M., McGue, M. & Iacono, W.G. (2007). "Most of the girls are alright but some aren't: Personality trajectory groups from ages 14 to 24 and some associations with outcomes. *Journal of Personality and Social Psychology*, in press.

Christopher J. Patrick, Ph.D.

Dr. Patrick's research deals with investigating basic emotional and cognitive processes through use of psychophysiological and behavioral measures, and investigating the role of affect in psychological disorders. The clinical phenomena that interest him most are psychopathy, antisocial behavior, substance abuse, and deception. He has a particular interest in paradigms and measures that permit inferences about underlying brain systems involved in processing and reacting to emotional stimuli..

In addition to studies of on-line emotional processing, he is interested in affective individual differences as indexed by self-report and observer ratings. A particular focus has been on the

Multidimensional Personality Questionnaire (Tellegen, 1982), which assesses temperament-related personality traits. His interests in this area include trait correlates of psychopathy, antisociality, aggression, and alcohol abuse.

Patrick, C. J. (2006). *Handbook of psychopathy*. New York: Guilford Press.

Hicks, B. M., & Patrick, C. J. (2006). Psychopathy and negative affectivity: Analyses of suppressor effects reveal distinct relations with trait anxiety, depression, fearfulness, and anger-hostility. *Journal of Abnormal Psychology*, 115, 276-287.

Patrick, C. J., & Bernat, E. (2006). The construct of emotion as a bridge between personality and psychopathology. In: R. F. Krueger & J. Tackett (Eds.), *Personality and psychopathology* (pp. 174-209). New York: Guilford Press.

Patrick, C. J., and Patrick, D. L. (2007). The third degree: Uncovering the truth in '24'. In R. Minter & L. Wilson (Eds.), *Jack Bauer for President: Terrorism and Politics in 24* (pp. 87-102). Dallas, TX: BenBella Books.

Patrick, C. J. (2007). Getting to the heart of psychopathy. In: H. Hervé, & J. C. Yuille (Eds.), *The psychopath: Theory, research, and social implications* (pp. 207-252). Hillsdale, NJ: Lawrence Erlbaum Associates.

Vaidyanathan, U., Patrick, C. J., & Bernat, E. M. (in press). Startle reflex potentiation during aversive picture viewing as an index of trait fear. *Psychophysiology*.

Patrick, C. J., & Bernat, E. M. (in press). Neurobiology of psychopathy: A two-process theory. To appear in: G. G. Berntson & J. T. Cacioppo (Eds.), *Handbook of neuroscience for the behavioral sciences*. New York: John Wiley & Sons.

Patrick, C. J., & Bernat, E. M. (2008). Neuroscientific foundations of psychopathology. To appear in: T. Millon, R. F. Krueger, & E. Simonsen (Eds.), *Contemporary directions in psychopathology: Toward the DSM-IV*. New York: Guilford Press.

Edens, J. F., Poythress, N. G., Lilienfeld, S. O., & Patrick, C. J. (in press). A prospective comparison of two measures of psychopathy in the prediction of institutional misconduct. *Behavioral Sciences and the Law*.

Patrick, C. J. (in press). Conceptualizing psychopathic personality: Disinhibited, bold, or just plain mean? To appear in: D. R. Lynam & R. J. Salekin (Eds.), *Handbook of child and adolescent psychopathy*. New York: Guilford Press.

Sponheim Scott Ph.D., L.P. (also psychiatry)

Dr. Sponheim is a clinical psychologist at the VA Medical Center in Minneapolis. He conducts research focused on severe psychopathology. His studies test cognitive deficits as markers of genetic liability for schizophrenia. He also uses measures of brain function to

identify mechanisms associated with cognitive deficits and genetic vulnerability for schizophrenia. In his treatment of individuals with severe psychopathology he is studying the effectiveness of cognitive behavioral interventions for psychotic symptomatology and the influence of cognitive functions on functional outcome and treatment response.

Sponheim, S.R., McGuire, K.A., Stanwyck, J.J. (2006). Neural anomalies during sustained attention in first-degree biological relatives of schizophrenia patients. *Biological Psychiatry*, 60, 242-52.

Laes, J.R., **Sponheim, S.R.** (2006). Does cognition predict community function only in schizophrenia?: A study of schizophrenia patients, bipolar affective disorder patients, and community control subjects. *Schizophrenia Research*, 84, 121-31.

Davenport, N.O., **Sponheim, S.R.**, Stanwyck, J.J. (2006). Neural anomalies during visual search in schizophrenia patients and unaffected siblings of schizophrenia patients. *Schizophrenia Research*, 82, 15-26.

Richter H.O., Costello P., Sponheim S.R., Lee J.T., Pardo J.V. (2004). Functional neuroanatomy of the human near/far response to blur cues: eye-lens accommodation/vergence to point targets varying in depth. *European Journal of Neuroscience*, 20, 2722-32.

Sponheim, S.R., Steele, V.S., McGuire, K.A. (2004). Verbal Memory Processing in Schizophrenia Patients and Biological Relatives of Schizophrenia Patients: Intact Implicit Memory, Impaired Explicit Recollection. *Schizophrenia Research*, 71, 339-348.

Sponheim, S.R., Surerus-Johnson, C., Leskela, J., Dieperink, M.E. (2003). Proverb interpretation in schizophrenia: The significance of symptomatology and cognitive processes. *Schizophrenia Research*, 65: 117-123

Sponheim, S.R., Iacono, W.G., Thuras, P.D., Beiser, M. (2001). Using biological indices to classify schizophrenia and other psychotic disorders. *Schizophrenia Research*, 50, 139-150.

Niels Waller, Ph.D.

Dr Waller's primary research interests include the development and evaluation of Quantitative Models of Individual Differences; Scale Development and Models of Person-Item Interactions in Personality/Psychopathology Assessment (Item Response Theory, Adaptive Testing); Taxometrics, Factor Analysis and Structural Equation Modeling; Psychometric Theory; and Genetic and Environmental Models of the Development and Expression of Psychopathology, Personality, Social Attitudes and Beliefs.

Selected Publications

Waller, N. G., Yonce, L. J., Grove, W. M., Faust, D., & Lenzenweger, M. (Eds.) (2006). A Paul Meehl reader: Essays on the practice of scientific psychology. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Waller, N. G., & Meehl, P. E. (1998). *Multivariate taxometric procedures: Distinguishing types from continua*. Thousand Oaks, CA: SAGE Publications.

Waller, N. G. (2006). Carving nature at its joints: Paul Meehl's contributions to taxometrics. *Journal of Abnormal Psychology*, 115, 210-215

Waller, N. G., & Lilienfeld, S. (2005). Paul Meehl: The cumulative record. *Journal of Clinical Psychology*, 61, 1209-1229.

Kang, S. M., & Waller, N. G. (2005). Moderated multiple regression, spurious interaction effects, and IRT. *Applied Psychological Measurement*, 29, 87-105.

Waller, N. G. (2004). The fallacy of the null hypothesis in soft psychology. *Applied and Preventive Psychology*, 11, 83-86.

Tomarken, A., & Waller, N. G. (2005). Structural Equation Modeling as a Data-Analytic Framework for Clinical Science: Strengths, Limitations, and Misconceptions. *Annual Review of Clinical Psychology*, 1, 31-65.

Waller, N. G., & Meehl, P. E. (2002). Risky tests, verisimilitude and path analysis. *Psychological Methods*, 7, 323-337.

Developmental Psychology Faculty

Dante Cicchetti, Ph.D.

Professor Cicchetti's major research interests lie in the formulation of an integrative developmental theory that can account for both normal and abnormal forms of ontogenesis. His work has several foci: 1) developmental psychopathology; 2) the developmental consequences of child maltreatment; 3) neural plasticity and sensitive periods; 4) the impact of traumatic experiences upon brain development; 5) the biology and psychology of unipolar and bipolar depressive diseases; 6) the interrelationships among molecular genetic, neurobiological, socio-emotional, cognitive, linguistic and representational development in normal and pathological populations; and 7) the study of attachment relations and representational models of the self and its disorders across the life span. Professor Cicchetti is also interested in the application of developmental principles to the assessment, intervention and treatment of "high risk" children and their families.

Cicchetti, D., & Manly, J. T. (Eds.) (2001). Operationalizing child maltreatment: Developmental processes and outcomes [Special Issue]. *Development and Psychopathology*, 13(4), 755-1048.

Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Consulting and Clinical Psychology*, 70, 6-20.

Cicchetti, D. (2002). The impact of social experience on neurobiological systems: Illustration from a

constructivist view of child maltreatment. *Cognitive Development*, 17, 1407-1428.

Cicchetti, D., & Walker, E. F. (Eds.). (2003). *Neurodevelopmental mechanisms in psychopathology*. New York: Cambridge University Press.

Cicchetti, D. (Ed.) (2003). Experiments of nature: Contributions to developmental theory [Special Issue]. *Development and Psychopathology*, 15(4), 833-1106.

Eigsti, I. M., & Cicchetti, D. (2004). The impact of child maltreatment on expressive syntax at 60 months. *Developmental Science*, 7, 88-102.

Cicchetti, D., & Curtis, W. J. (2005). An event-related potential (ERP) study of processing of affective facial expressions in young children who have experienced maltreatment during the first year of life. *Development and Psychopathology*, 17(3), 641-677.

Cicchetti, D., & Toth, S.L. (2006). A developmental psychopathology perspective on preventive interventions with high risk children and families. In A. Renninger and I. Sigel (Eds.), *Handbook of Child Psychology* (6th Ed.) pp. 497-547. New York: John Wiley & Sons, Inc.

Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology*, 18(3), 623-650.

Teisl, M., & Cicchetti, D. (in press). Physical abuse, cognitive and emotional processes, and aggressive/disruptive behavior problems. *Social Development*.

Byron Egeland, Ph.D

Together with his collaborators, Professor Egeland continues to conduct a longitudinal study of high risk children and their families which began in 1975. The assessments, which were detailed and comprehensive, began before the birth of the first child and have continued at regular intervals through age 28. Originally we were interested in predicting good and poor parenting and parent-child relationship outcomes in our high risk sample with a particular interest in understanding the causes and consequences of child maltreatment. The current aims include determining the antecedents and developmental pathways leading to competence and maladaptation in childhood, adolescence and young adulthood. This includes the study of drug and alcohol abuse, depression, conduct disorder, and personality disorders as well as resilience. Of particular interest is the study of continuity of adaptation and maladaptation across the period of adolescence and young adulthood and to identify factors related to discontinuity.

Burt, K. B., van Dulmen, M. H. M., Carlivati, J., Egeland, B., Sroufe, L. A., Forman, D. R., Appleyard, K., & Carlson, E. A. (2005). Mediating links between maternal depression and offspring psychopathology: The importance of independent data. *Journal of Child Psychology and Psychiatry*, 46, 490-499.

Lawrence, C.R., Carlson, E.A., Egeland, B. (2006). The Impact of Foster Care on Development. *Development and Psychopathology*, 18, 57-76.

Siebenbruner, J., Englund, M., Egeland, B., Hudson, K., Whaley, G. (2006). Developmental Antecedents of Late Adolescence Substance Use Patterns. *Development and Psychopathology*, 18, 551-571.

Bosquet, M. & Egeland, B. (2006). The Development and Maintenance of Anxiety Symptoms from Infancy through Adolescence in a Longitudinal Sample. *Development and Psychopathology* 18, 517-550.

Obradovic, J., van Dulmen, M.H.M., Yates, T.M., Carlson, E.A., Egeland, B. (2006). Developmental assessment of competence from early childhood to middle adolescence. *Journal of Adolescence*, 29, 857-89.

Egeland, B. (in press). Understanding Developmental Process and Mechanisms of Resilience and Psychopathology: Implications for Policy and Practice. In A. Masten (Vol. Ed.), *The Minnesota Symposium on Child Psychology: Vol. 33. Multi-Level Dynamics in Developmental Psychopathology: Pathways to the future*. Hillside, NJ: Lawrence Erlbaum and Associates.

Siebenbruner, J., Zimmer-Gembeck, M. J., Egeland, B. (in press). Sexual Partners and Contraceptive Use: A 16-year Prospective Study Predicting Abstinence and Risk Behavior. *Journal of Research on Adolescence*.

Lorber, M.F. and Egeland, B. (in press). Parenting and Temperament in Infancy: Testing a Mutual Exacerbation Hypothesis to Predict Early Onset Conduct Problems. *Child Development*.

Shaffer, A., Huston, L. and Egeland, B. (in press). Identification of Child Maltreatment Using Prospective and Self-report Methodologies: A Comparison of Maltreatment Incidence and Relation to Later Psychopathology. *Child Abuse and Neglect*.

Appleyard, K., Egeland, B., Sroufe, L.A. (in press). Direct social support for young high risk children: Relations with behavioral and emotional outcomes across time. *Journal of Abnormal Child Psychology*.

Canan Karatekin, Ph.D.

Professor Karatekin is interested in investigating cognitive processes in children and adolescents with psychiatric and neurological disorders. This research can lead to a better understanding of the basic nature and normal development of the processes, the neurobiological bases and mechanisms of dysfunction in the disorders, as well as improved treatment options for the children and their families.

Karatekin, C., *Marcus, D., & White, T. (2007). Manual and oculomotor indices of incidental and intentional spatial sequence learning in middle childhood and adolescence. *Journal of Experimental Child Psychology*.

Karatekin, C. (2007). Improving antisaccade performance in adolescents with Attention-Deficit/Hyperactivity Disorder (ADHD). *Experimental Brain Research*.

* Marcus, D., Karatekin, C., & ** Markiewicz, S. W. (2006). Oculomotor evidence of sequence learning on the Serial Reaction Time (SRT) Task. *Memory and Cognition*, 34, 420-432.

Karatekin, C. (2005). A comprehensive and developmental theory of ADHD is tantalizing, but premature. Open peer commentary on "A dynamic developmental theory of attention-deficit/hyperactivity disorder (ADHD) predominantly hyperactive/impulsive and combined subtypes" by Sagvolden, Johansen, Aase, & Russell. *Behavioral and Brain Sciences*, 28, 430-431.

Karatekin, C. (2004). A test of the integrity of the components of Baddeley's model of working memory in Attention-Deficit/Hyperactivity Disorder (ADHD). *Journal of Child Psychology and Psychiatry*, 45, 912-926.

Karatekin, C., *Couperus, J., & *Marcus, D. (2004). Attention allocation on the dual task paradigm as measured through behavioral and psychophysiological responses. *Psychophysiology*, 41, 175-185.

Karatekin, C. (2004). Development of attentional allocation on the dual task paradigm. *International Journal of Psychophysiology*, 52, 7-22.

Ann Masten, Ph.D.

Professor Masten's work is focused on the development of competence, particularly in the context of high cumulative risk and stressful life events, with the goal of understanding the processes by which individuals negotiate hazardous experiences to succeed in life. With her colleagues and students, she has studied adaptation among diverse children, adolescents, and young adults, including those growing up in ordinary situations and others who have faced the extreme threats to development brought into children's lives by war or homelessness. By understanding resilience in development, they hope to inform policy and programs that have the aim of fostering a better future for children whose lives are threatened by adversity.

Masten, A. S. (2004). Regulatory processes, risk and resilience in adolescent development. *Annals of the New York Academy of Sciences*, 1021, 310-319.

Masten, A. S., Burt, K., Roisman, G. I., Obradović, J., Long, J. D., & Tellegen, A. (2004). Resources and resilience in the transition to adulthood: Continuity and change. *Development and Psychopathology*, 16, 1071-1094.

Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradović, J., Riley, J. R., Boelcke-Stennes, K., & Tellegen, A. (2005). Developmental cascades: Linking academic achievement, externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, 41, 733-746.

Masten, A. S. (2006). Developmental psychopathology: Pathways to the future. *International Journal of Behavioral Development*, 31, 46-53.

Masten, A. S., Burt, K., & Coatsworth, J. D. (in press for 2006). Competence and psychopathology in development. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology, Vol 3, Risk, disorder and psychopathology (2nd ed.)* New York: Wiley.

Masten, A. S., & Obradović, J. (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences*, 1094, 13-27.

Masten, A. S. (Ed.) (2007). *Multilevel dynamics in developmental psychopathology: The Minnesota Symposia on Child Psychology*. Vol. 34. Mahwah, NJ: Erlbaum.

L. Alan Sroufe, Ph.D.

Professor Sroufe's research involves the complementary study of normal and abnormal development. The basic strategy of that research is to define the salient developmental issues for each period, then trace normative pathways and delineate developmental deviations. The focus of his recent work is on adjustment in adolescence and the transition to adulthood. The longitudinal approach allows study of continuity and change from infancy forward.

Carlson, E., Sampson, M., & Sroufe, L. A. (2003). Attachment theory and pediatric practice. *Journal of Developmental and Behavioral Pediatrics*, 24 (5), 364-379.

Carlson, E.A., Sroufe, L.A., & Egeland, B. (2004). The construction of experience: A longitudinal study of representation and behavior. *Child Development*, 75(1), 66-83.

Appleyard, K., Egeland, B., van Dulmen, M., & Sroufe, L. A. (2005). When more is not better: The role of cumulative risk in child behavior outcomes. *Journal of Child Psychology and Psychiatry* 46, 235-245.

Sroufe, L. A., Egeland, B., Carlson, E., & Collins, W. A. (2005) *The Development of the Person: The Minnesota*

Study of Risk and Adaptation from Birth to Adulthood. New York: Guilford Publications.

Carlson, E., Yates, T., & Sroufe, L.A. (in press). Development of dissociation and development of the self. In P. Dell, J. O'Neil, & E. Somer (Eds.), *Dissociation and dissociative disorders*. New York: Routledge.

Sroufe, L. A. (in press). The place of development in developmental psychopathology. In A. Masten (Ed.), *Multilevel dynamics in developmental psychopathology: pathways to the future*. The Minnesota Symposia on Child Psychology, Vol. 34.

Rich Weinberg, Ph.D.

Professor Weinberg's research has focused on the development of individual differences in intellectual skills, personality characteristics, social attitudes, and other psychological variables from early childhood through young adulthood. He has employed the adoption method to study the effects of environments and human genetic endowment on development. The longitudinal follow-up study focused on academic and intellectual achievements and on life adjustment of the transracial adoptees and their non-adopted siblings during late adolescence/early adulthood.

Invited Review of "The Infant and the Family in the Twenty-First century." (2004). *Journal of the American Academy of Child and Adolescent Psychiatry*, 43:1, 115-116.

A Body Coming Through the Rye. (2004). *American Psychological Society Observer* 17(4), 35.

Children and Sports/Athletics (2005). In Fisher, C. B. & Lerner, R. M. (Eds.), *Applied Developmental Science An Encyclopedia of Research Policies and Programs* Thousand Oaks, CA: Sage Publications, 1048-1051 (with J. Ostrov).

Peers (2005). In Fisher, C. B. & Lerner, R. M. (Eds.), *Applied Developmental Science An Encyclopedia of Research Policies and Programs* Thousand Oaks, CA: Sage Publications, 816-819 (with J. Ostrov).

Intelligence Testing (2005). In Fisher, C. B. & Lerner, R. M. (Eds.), *Applied Developmental Science An Encyclopedia of Research Policies and Programs* Thousand Oaks, CA: Sage Publications, 599-601 (with A. Luckner).

The Minnesota Transracial Adoption Study: Parent reports of psychosocial adjustment at late adolescence (2004, approved 2005). *Adoption Quarterly*, 8(2), 27-44. (with I. Waldman, M. van Dulmen and J. Scarr).

Psychiatry Faculty

Scott J. Crow, M.D.

Dr. Crow's research focuses on the treatment outcome and nosology of eating disorders. In addition, he has active ongoing work in the area of obesity treatment and the relationship of obesity to psychopathology.

Crow SJ, Thuras P, Keel PK, Mitchell JE. Long-term menstrual and reproductive function in bulimia nervosa. *American Journal of Psychiatry*, 2002; 159:1048-50.

Crow SJ, Agras WS, Halmi K, Mitchell JE, Kraemer HC. Full syndromal vs subthreshold anorexia nervosa, bulimia nervosa, and binge eating disorder: A multicenter study. *International Journal of Eating Disorders*, 2002; 32:309-18.

Crow SJ, Peterson CB, Levine AS, Thuras P, Mitchell JE. A survey of obesity treatment practices among primary care providers. *International Journal of Eating Disorders*, 2004; 35:348-53.

Crow SJ, Keel PK, Thuras P, Mitchell JE. Bulimia symptoms and other risk behaviors during pregnancy in women with bulimia nervosa. *International Journal of Eating Disorders*, 2004; 36:220-23.

Halmi KA, Agras WS, Crow S, Mitchell J, Wilson GT, Bryson SW, Kraemer HC. Predictors of treatment acceptance and completion in anorexia nervosa: implications for future study designs. *Archives of General Psychiatry*, 2005; 62:776-81.

Crow S, Eisenberg ME, Story M, Neumark-Sztainer D: Psychosocial and Behavioral Correlates of Dieting Among Overweight and Non-Overweight Adolescents. *Journal of Adolescent Health*, 2006; 38:569-574.

Pope HG, Lalonde JK, Pindyck LJ, Walsh BT, Bulik CM, Crow SJ, McElroy SL, Rosenthal N, Hudson JI: Binge eating disorder: A stable syndrome. *American Journal of Psychiatry*, 163:2181-2183, 2006.

Dorothy Hatsukami, Ph.D.

Dr. Hatsukami's research involves examining the behavioral pharmacology and toxicity of drugs of abuse with a primary focus on nicotine. Human laboratory models have been developed to examine various aspects of drug abuse, including drug self-administration, withdrawal and relapse. These models are used to systematically examine innovative treatments that reduce drug seeking behavior or the self-administration of a drug. Individual differences (genotypes and phenotypes) that moderate drug responses are also examined. In addition, research is being conducted to examine the toxicity of tobacco use and innovative methods to reduce this toxicity that would have significant public health impact.

Hatsukami, D.K., Giovino, G.A., Eissenberg, T., Clark, P.I., Lawrence, D. & Leischow, S. (2005) Methods to assess potential reduced exposure products. *Nicotine & Tobacco Research*, 7(6):827-844.

- Hatsukami, D.K., Ebbert, J.O., Anderson, A., Lin, H., Le, C. & Hecht, S.S. (2006) Smokeless tobacco brand switching: A means to reduce toxicant exposure? *Drug and Alcohol Dependence*.
- Burgess, D., Fu, S.S., Joseph, A.M., Hatsukami, D.K., Solomon, J. & van Ryn M. (2007) Beliefs and experiences regarding smoking cessation among American Indians. *Nicotine & Tobacco Research*, 9(Supplement 1):S19-S28.
- Chen, L., Wang, M., Villalta, P.W., Luo, X., Feuer, R., Jensen, J., Hatsukami, D.K. & Hecht, S.S. (2007) Quantitation of an acetaldehyde adduct in human leukocyte DNA and the effect of smoking cessation. *Chemical Research in Toxicology*, 20(1):108-113.
- Mendoza-Baumgart, M.I., Tulunay, O.E., Hecht, S.S., Zhang, Y., Murphy, S., Le, C., Jensen, J. & Hatsukami, D. (in press) Pilot study on lower nitrosamine smokeless tobacco products compared to medicinal nicotine. *Nicotine & Tobacco Research*.
- Kotlyar, M., Mendoza-Baumgart, M.I., Li, Z.Z., Pentel, P.R., Barnett, B.C., Feuer, R.M., Smith, E.A. & Hatsukami, D.K. (in press) Nicotine pharmacokinetics and subjective effects of three potential reduced exposure products, moist snuff and nicotine lozenge. *Tobacco Control*.
- Hatsukami, D.K., Mooney, M.E., Murphy, S., LeSage, M., Babb, D. & Hecht, S. (in press) Effects of high dose transdermal nicotine replacement in cigarette smokers. *Pharmacology, Biochemistry and Behavior*.
- Matt Kushner, Ph.D.**
- Dr. Kushner conducts both laboratory and field studies aimed at better understanding the interaction of alcohol use with other psychopathology. He is especially interested in the anxiety disorders in general and panic disorder in particular. Laboratory studies often involve a biological challenge (e.g., carbon dioxide inhalation) and/or a pharmacological challenge (e.g., alcohol administration). Typical measures are psychophysiological and behavioral.
- Kushner, M. G., Abrams, K., Borchardt, C. (2000). Anxiety Disorders Co-Occurring with Alcohol or Drug Use Disorders: A Review of Major Perspectives and Findings. *Clinical Psychology Review*, 20, 149-171.
- Kushner, M. G., Abrams, K., Thuras, P., & Hanson, K. (2000). Individuals differences predictive of drinking to manage anxiety among non-problem drinkers with panic disorder. *Alcoholism: Clinical and Experimental Research*, 24, 448-458.
- Rassovsky, Y., Hurliman, E., Abrams, K., Kushner, M.G. (2004). CO₂ Hypersensitivity in recently abstinent alcohol dependent individuals: A possible mechanism underlying the high risk for anxiety disorder among alcoholics. *Journal of Anxiety Disorders*, 18, 159-176.
- Abrams, A. and Kushner, M. G. (2004). The moderating effects of tension-reduction alcohol outcome expectancies on placebo responding in individuals with social phobia. *Addictive Behaviors*, 29, 1221-1224
- Adson, D. E., Kushner, M.G., Eiben, K. M., & Schulz, S.C. (2004). Preliminary experience with adjunctive quetiapine in patients receiving selective serotonin reuptake inhibitors, *Depression and Anxiety*, 19, 121-126.
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- Ken Winters, Ph.D.**
- Dr. Winters' interests center on several related addiction topics, including the validation of assessment tools that assist in the identification of adolescents who may be abusing drugs, the examination of predictors of treatment outcome for youths who attend 12-step programs, the description of the long-term course of children with ADHD, the validity of diagnostic criteria for various addictions, and the use of brief interventions for moderate drug abusing adolescents.
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Winters, K.C., Leitten, W., Wagner, E., & O'Leary Tevyaw, T. (in press). Use of brief interventions in a middle and high school setting. Journal of School Health.

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A unique strength of the Minnesota program stems from the outstanding legacy of our emeritus faculty, whose contributions and perspectives continue to guide and shape the scientific climate of our work. In many cases, these faculty maintain an active role in conducting research, educating students, and publishing research and theoretical papers. The partial listing that follows serves to highlight a small part of these contributions.

To begin with, the late **Paul E. Meehl** (Past President of the American Psychological Association and member of the National Academy of Science) not only ran our program but matriculated from it. He gave the field many first-rank achievements. To name just three: a citation classic on the relative merits of statistical and clinical prediction, a book that has not been excelled to this day; a comprehensive theory of the genesis of schizophrenia, which is the focus of much current research attention; a field of applied statistics which he invented called "taxometrics" that is uniquely and powerfully designed for the study of classification issues. Meehl began his research work under his graduate adviser **Starke Hathaway**, himself famous as one of the authors of the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI is by now the most widely used, best researched personality inventory in clinical psychology. The successor inventory, the MMPI-2, came out of our department as well, under the guidance of **James N. Butcher** and **Auke Tellegen** as well as colleagues from other universities.

Developmental Psychopathology, which studies relationships between normal development in children and psychopathology, owes much to the inspired leadership of **Norman Garmezy** (emeritus), a member of the National Academy's Institute of Medicine. Researchers from the Institute of Child Development, with whom we run our Developmental Psychopathology and Clinical Science (DPCS) Program continue this tradition. These scientists include **Byron Egeland**, **Ann Masten**, **Alan Sroufe**, and **Richard Weinberg**. They focus on research on stress, coping, and resiliency in children under adverse rearing conditions.

Irving Gottesman is known internationally for his work on the genetics of psychopathology. One of our distinguished alumni, received APA's Award for Distinguished Scientific Contribution in 2000. Gottesman was a member of our faculty from 1966-1980. His first extensive study of the genetics of schizophrenia confirmed that genes were undeniably a determining factor in schizophrenia, a finding that had a profound influence on the field. After retiring from the University of Virginia, Gottesman has now returned to the University of Minnesota.

Irving Gottesman, Ph.D.

Dr. Gottesman's research focuses on psychiatric genetics. His work in the genetics of schizophrenia has resulted in 18 published books, 179 journal articles, 75 books chapters and, 23 book reviews with more books on the way.

Emeritus Faculty

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- Braff, D., Schork, NJ, & Gottesman, II (in press). Endophenotyping schizophrenia. *American Journal of Psychiatry*
- Auke Tellegen, Ph.D.**
- Dr. Tellegen's primary interest is the dimensional analysis and assessment of mood, temperament, personality generally, and personality disorders. This includes studies of "natural-language" personality description and the intensive "idiographic" analysis of personality descriptions generated by single subjects. Personality scale development and evaluation are an integral part of this research.
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RESEARCH OPPORTUNITIES

Here are some current research efforts in and around our program.

Minnesota Study of Twins Reared Apart (Bouchard)
A longitudinal study of mono- and dizygotic twins reared apart from an average age of a few months. Minnesota Twin Family Study (Iacono, Lykken, McGue, Tellegen) - a

longitudinal study of over 1,400 pairs of twin children, 600 pairs of adoptees and their parents, focused on parental psychopathology (especially substance abuse) and the development of psychopathology in the children.

Minnesota Sibling Interaction and Behavior Study (Iacono, McGue)

A longitudinal study of 600 pairs of adolescent siblings, two-thirds of whom are domestic or international adoptees, focused on the development of substance abuse and related psychopathology.

Minnesota Study of Aging Twins (McGue)

A longitudinal study of the genetics of the psychological and physiological aspects of aging in normal twins.

Psychophysiology of emotional perception and activation (Cuthbert).

Studies employing event-related potentials, the startle probe, and other methodologies to investigate dimensions of emotional responses to the viewing or imagination of affective stimuli.

Psychophysiology of internalizing disorders (Cuthbert):

Studies using psychophysiological measures to explore emotional responses in patients with anxiety and/or mood disorders, and individual differences that may constitute risk factors for emotional disorders in college student populations.

Antisocial Personality Disorder and Psychopathy (Iacono)

Studies on Lie Detection (Iacono) Methodological Studies in Taxometrics (Grovel) - development and validation of novel statistical techniques for classification research.

Mechanical vs. Statistical Prediction (Grove)

How best to make predictions in psychology and medicine.

Meta-Analytic Studies of the Validity of the Rorschach (Grove)

Re-examines the validity of interpretations based on the Rorschach Inkblot Technique.

Studies of Psychological Stress and Adaptation with relevance to Astronauts (Leon)

This study is funded by NASA.

General and Cross-Cultural Research on the MMPI-2 (Butcher, Tellegen)

Development, validation, translation into other languages, checking cross-national comparability of MMPI-2 profiles, etc.

Research on the Multidimensional Personality Questionnaire (Tellegen)

Validation, development studies, etc.

Research on the Structure of Mood (Tellegen)

Research on Hypnotizability (Tellegen)

The neurobehavioral development of the prefrontal cortex in adolescents (Luciana)

Examines the neuropsychological development of prefrontal cortex in healthy adolescents, ages 9 to 18. This study has recently been expanded to include neuroimaging and genetic components.

Neurocognitive effects of drug-induced alterations in brain serotonin activity (Luciana)

Examines the cognitive effects of brain neurotransmitter changes in normal and affectively-disordered adults and in people who abuse the drug Ecstasy.

Dopamine System Reactivity and Cognition (Luciana)

Pharmacological probes of dopamine function in healthy adults and young adults treated for PKU.

Ventromedial Prefrontal Function in College-Aged Substance Abusers. (Luciana)

Examines prefrontal function in young adult alcohol abusers, focusing on behaviors mediated by the ventromedial prefrontal cortex.

Cognitive Deficits as Indicators of Genetic Liability for Schizophrenia (Sponheim)

Veterans Administration and Medical Center study

Functional Magnetic Resonance Imaging (fMRI) Study of Twins (MacDonald, Iacono.)

Neuroimaging applied to parsing genetic and environmental influences on prefrontal cortex activity and brain structure.

Cognitive Control over Habitual and Emotional Responses (MacDonald, Patrick).

Functional magnetic resonance imaging study (fMRI) study using cognitive and emotional probes to evaluate the nature of cognitive control and their relationship to the organizational principles of prefrontal cortex.

Decision-making and Emotional Mechanisms in Schizophrenia (MacDonald). Game theory models and emotional probes of trust used to evaluate cognitive mechanisms underlying the development of paranoia in schizophrenia patients. (Collaboration with Aldo Rustichini, Dept. of Economics)

Cognitive and Functional Neuroanatomical Indices of the Genetic Predisposition to Schizophrenia (MacDonald, Sponheim).

Advanced Methods for Dissociating Cognitive Control Processes in fMRI (MacDonald). Determining optimal experimental design for event-related neuroimaging studies.

Alcoholism Resulting from Use of Alcohol to Self-Medicare for Panic Disorder (Kushner)

The study of psychopathology co-occurring with substance use disorders ("comorbidity") (Kushner)

Studies of Psychoactive Substance Craving (e.g., nicotine, "crack" cocaine) (Hatsukami)

Primate Models of Drug Abuse; Neurological Models of Drug Addiction (Carroll)

Borderline Personality Disorder (Kroll)

Adolescent Drug Abuse Assessment and Treatment (Winters)

Young Adult Functioning of Drug Abusers (Winters)

Pathological Gambling (Winters)

Stepped care versus best available care for bulimia nervosa (Crow)

Treatment of binge eating disorder (Crow)

Minnesota Obesity Center (Crow)

A series of studies examining all aspects of obesity from molecular biology through psychopathology.

Cluster analysis of personality styles in bulimia nervosa (Crow)

We are committed to the policy that all persons have equal access to our graduate program, without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

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