Positive Psychology Center Annual Report
May 27, 2014

Martin Seligman, Director
Peter Schulman, Executive Director

Contents:

Significant Developments
MacArthur Fellowship
Resilience Training for Army Soldiers
New Research Grants
Research Supported with PPC Funds
Outreach Programs

Organization and Operation
PPC Personnel
PPC Advisory Board
PPC Advisors

Activities
Research
Education: Graduate and Undergraduate
Resilience Training Programs

This is a report on the activities of the Positive Psychology Center (PPC). The PPC was officially created November 7, 2003 and is thriving intellectually and financially. It is the leading center for research, teaching, application and the dissemination of Positive Psychology in the world. It is widely recognized in both the scholarly and public press.

The mission of the PPC is to promote empirical research, education, training, application, and the dissemination of Positive Psychology. Positive Psychology is the scientific study of the strengths that enable individuals and communities to thrive. This field is founded on the belief that people want to lead meaningful and fulfilling lives, to cultivate what is best within themselves, and to enhance their experiences of love, work, and play.
SIGNIFICANT DEVELOPMENTS

**MacArthur Fellow**: Dr. Angela Duckworth received the prestigious 2013 MacArthur Fellowship.

**Ongoing Resilience Training for Army Soldiers:**
- The PPC continues to deliver resilience training programs to the U.S. Army, through a multi-year contract with the U.S. government. Since November 2009, we have helped train thousands of soldiers who have in turn taught resilience skills to tens of thousands of other soldiers.

**New Research Grants:**
- **World Well Being Project.** Dr. Martin Seligman (PI) received a new three-year grant from the Templeton Religion Trust (TRT) from July 2014 to June 2017. We will use massive social media datasets to predict mental health and physical health outcomes.
- **Advancing the Science of Imagination: Toward an “Imagination Quotient”**. Dr. Seligman (PI) received a 3.3 year subaward from the Imagination Institute under a grant from the Templeton Foundation) from May 2014 to August 2017. This grant includes: (1) An award program to fund researchers interested in the measurement and enhancement of imagination and (2) A series of research meetings during which creative leaders in various fields will be invited to exchange and discuss ideas about the nature and enhancement of imaginative abilities.
- **Universal Assessments Research.** Dr. Martin Seligman (PI) received a 1.25-year grant from the Templeton Religion Trust (TRT) from May 2014 to July 2015. We will explore how overall judgments of the world, termed “universal assessments” (UA), affect human behavior and life outcomes.
- **The Humanities and the Science of Well-Being: Toward a Strategic Collaboration for Understanding, Measuring, and Cultivating Human Flourishing.** Dr. James Pawelski (PI) received a 1.67-year grant from the Templeton Religion Trust (TRT) from May 2014 to December 2015.
- **Character Development in Adolescence.** Dr. Angela Duckworth (PI) received 3-year grant from the Templeton Foundation from March 2014 to February 2017, to examine the impact of character strengths on academic success, social functioning, and psychological well-being.
- **Online Performance Tasks of Academic Diligence.** Dr. Angela Duckworth (PI) received a 2-year subaward from the University of Notre Dame (under a Templeton Foundation grant) from March 2014 to February 2016 to develop scaleable, online measures of academic diligence in a variety of domains.
- **Building Grit via Online Interventions.** Dr. Angela Duckworth (PI) received a 2-year grant from the Character Lab from August 2013 to June 2015, to develop an online intervention that makes middle and high school students grittier, and to develop a series of behavioral tasks that reliably measure grit.
- **Character Counts: Development of a Character Growth Card.** Dr. Angela Duckworth (PI) received a 2-year grant from the Character Lab from August 2013 to June 2015, to develop teacher-report and self-report questionnaires assessing character strengths in middle school students.
- **Character counts: Developing and Validating Novel Measures of Character Skills.** Dr. Angela Duckworth (PI) received a 1-year grant from the Spencer Foundation from July 2013
to June 2014, to develop teacher-report and self-report questionnaires assessing character strengths in middle school students.

- **Research-Practitioner Partnerships in Education Research.** Dr. Angela Duckworth (PI) received a 1.5-year grant from the Department of Education from July 2014 to December 2015, to develop language to describe the grit and perseverance challenge among all members of the partnership and submit one or more proposals for further research and development.

- **Self-Control Strategies in School-Age Children.** Dr. Angela Duckworth (PI) received a 1.3-year grant from the Robert Wood Johnson Foundation from September 2013 to December 2014, to examine self-control strategies in children.

- **Getting Grittier: Grit Curriculum and Professional Development for RBCS Elementary and Middle School.** Dr. Duckworth (PI) received a 1-year grant from the Mellon Family Foundation from September 2013 to August 2014, to foster grit and other character strengths among the students.

**Research Supported with PPC Funds:**

- **PERMA and Global Well Being.** In his book, *Flourish*, Dr. Seligman proposed that well-being is defined by PERMA: Positive emotion, Engagement, Relationships, Meaning, and Accomplishment. Each of these has a lexicon, amounting to about 2,700 words in English. We are measuring PERMA across the planet in real time by mapping the frequency of these words in electronic media from moment to moment, across events, and across geography.

Under the umbrella of the “World Well-Being Project (WWBP)”, we are pioneering techniques for measuring psychological and physical well-being based on language in social media. As a collaboration between computer scientists, psychologists, and statisticians, we are shedding new light on the psychosocial processes that affect health and happiness and exploring the potential for our unobtrusive well-being measures to supplement - and in part replace - expensive survey methods. Ultimately, we hope that our insights and analyses will help individuals, organizations, and governments choose actions and policies that are not just in the best economic interest of the people or companies, but which truly improve their well-being. Here are some of the research findings:

**Heart Disease:**

- Community engagement, assessed via Twitter Language, is protective of heart disease mortality.
- A community’s psychological state, as measured through language in Twitter, is predictive of their rate of heart disease.
- Across U.S. counties, positive health assets such as positive emotions, engagement and social support seem to protect from heart disease, going beyond what has been shown at the individual level.

**Psychological Well-being:**

- One’s language in Facebook is predictive of one’s subjective well-being.
- Language on Twitter predicts community well-being above and beyond age, gender, education, and income.
In Twitter, communities that mention more outdoor activities, spiritual meaning, exercise, and good jobs are likely to have higher subjective well-being, while those communities expressing more disengagement (i.e., "bored", "tired") are likely to have low life satisfaction.

**Temporal Orientation**
- A language-based assessment of one's future orientation - tendency to think more about the future - correlates with age, conscientiousness, satisfaction with life, and low levels of impulsiveness.

**Outreach Programs:**

- **Positive Psychology Undergraduate Research Program (PPURP).** To support Penn undergraduate education and research, we launched this program in the summer of 2011. This program is designed to provide financial support for Penn undergraduate students interested in conducting research related to Positive Psychology, broadly defined, during the summer and fall terms. Students receive a stipend plus research funding. In the summer of 2013, seven students received this financial support, as well as mentoring from Penn faculty.

- **Duckworth Summer Fellows Program.** In the summer of 2014, like previous summers, Dr. Angela Duckworth will mentor 8 college and high school students, including 4 Penn undergraduates. Over an 8-week period, these 8 students will spend approximately full time at the Positive Psychology Center. They are expected to conduct independent research that will lead to a poster that they will submit to the annual Association for Psychological Science (APS) conference, plus contribute to existing research projects at the PPC. They are also expected to do guided work from a statistics text book, as well as participate in weekly lab meetings, and meetings to discuss reading assignments in Positive Psychology.

- **Positive Psychology Lunch Series Talks.** In November of 2010, we initiated the Positive Psychology Lunch Series talks, which is held approximately monthly at the Positive Psychology Center, for the local Positive Psychology community. Speakers are local or visiting scholars with research relevant to Positive Psychology. Speakers also meet with interested faculty, post-doctoral fellows and graduate students. These talks will continue on a monthly basis for FY15. Some of the speakers are scholars from other Penn departments, to forge connections with these departments.
**PPC PERSONNEL**

Martin Seligman, Ph.D., Director of PPC and Zellerbach Family Professor of Psychology  
Angela Duckworth, Ph.D., Assistant Professor of Psychology  
Paul Rozin, Ph.D., Professor of Psychology  
Peter Schulman, Executive Director  
Karen Reivich, Ph.D., Resilience programs research, training, and curriculum development  
Jane Gillham, Ph.D., Resilience programs research, training, and curriculum development  
Lawrence Scheier, Ph.D., Senior Project Director, Positive Soldier Health grant  
Tiffany Ho, Statistical Programmer, Positive Soldier Health grant  
Gordon Bermant, Ph.D., lecturer  
Elizabeth Van Leer, Senior Project Manager, Resilience training programs, PPC-wide support  
Samantha Burton, Project Manager, Resilience training  
Emily Raiche, Project Manager, Resilience training and video producer  
Grace Cormier, Project Manager, Resilience training  
Amy Walker, Project Manager, Positive Neuroscience Project  
Olivia Riffle, Project Manager, Prospective Psychology Stage 1 and Stage 2 grants  
LizBeth Benson, Research Coordinator, Positive Health grant  
Jeanette Elstein, Project Manager, Creativity grant  
Alyssa Matteucci, Research Coordinator for Dr. Angela Duckworth, Grit research  
Benjamin Plummer, Research Coordinator for Dr. Angela Duckworth, Grit research  
Sarah Patrick, Research Coordinator for Dr. Angela Duckworth, Grit research  
David Meketon, Research Coordinator for Dr. Angela Duckworth, Grit research  
Maarten Sap, Research Analyst, World Well Being Project  
Rosemary Hancock, Research Coordinator, World Well Being Project  
Jeremy Clifton, Research Coordinator, Universal Assessment Research grant  
David Yaden, Research Coordinator, Meaning and Purpose Project  
Linda Newsted, Administrative Assistant for Dr. Martin Seligman  
Samuel Buchl, PPC IT Support Specialist  
Jill Chivers, PPC IT Support Specialist

Master of Applied Positive Psychology Program (MAPP):  
James Pawelski, Ph.D., Director of Education  
Aaron Boczkowski, Administrative Coordinator  
Andrea Allmayer, Administrative Director  
Sydney Rubin, Assistant Coordinator

Graduate Students:  
Alejandro Adler  
Johannes Eichstaedt  
Marie Forgeard  
Xuan Gao  
Ann Roepke  
Lauren Eskreis-Winkler

Postdoctoral Fellows:  
Brian Galla, Grit research  
Margaret Kern, Positive Health grant  
Gregory Park, World Well Being Project
Hansen Andrew Schwartz, World Well Being Project
Liz Shulman, Grit research
Eli Tsukayama, Grit research
Loryana Vie, Positive Soldier Health grant
Rachel White, Grit research

Undergraduate Student Assistants: Numerous student research assistants help with various projects

**PPC ADVISORY BOARD**

The board consists of Richard Schultz, Martin Seligman, Robert DeRubeis, Jerry Wind, Larry Gladney, John DiIulio, and Kathleen Hall Jamieson. Ex officio members include Nora Lewis, Ralph Rosen and James Pawelski. This board advises both PPC and MAPP.

**PPC ADVISORS**

Following are some of the leading scholars who have worked with Dr. Seligman in charting the course of Positive Psychology:

- Mihalyi Csikszentmihalyi, Claremont Graduate University
- Edward Diener, Psychology, University of Illinois
- Kathleen Hall Jamieson, University of Pennsylvania Annenberg School of Communication
- George Vaillant, Psychiatry, Harvard University
- Darwin Labarthe, Centers for Disease Control and Prevention
- Steven Blair, University of South Carolina
- Roy Baumeister, Florida State University
- Peter Railton, University of Michigan
- Chandra Sripada, University of Michigan

**RESEARCH ACTIVITIES**

Dr. Martin Seligman, Dr. Angela Duckworth, as well as some of the current and former PPC graduate students have received research grants from several foundations – the John Templeton Foundation, Templeton Religion Trust, Robert Wood Johnson Foundation, Mellon Family Foundation, Spencer Foundation, and the Gates Foundation. Following are descriptions of the current research grants at the Positive Psychology Center.

**World Well Being Project (WWBP): Measuring well-being using big data, social media, and language analyses (Templeton Religion Trust, PI-Dr. Martin Seligman).** WWBP is an interdisciplinary collaboration drawing on psychology, natural language processing, and machine learning to develop new techniques to measure psychological and physical well-being based on language in social media such as Facebook and Twitter. By leveraging massive social media datasets (“Big Data”) containing information of tens of millions of people, we are shedding light on psychosocial processes underlying health and well-being. Our unobtrusive measures complement, and often provide deeper insights than expensive survey methods. Ultimately, we hope that our insights and analyses will help individuals, organizations, and governments choose actions and policies that will improve psychological, social, physical, spiritual, and economic well-being for people worldwide.
Advancing the Science of Imagination: Toward an “Imagination Quotient” (Templeton Foundation/Imagination Institute, PI-Dr. Martin Seligman). This grant is comprised of two main components: (1) An award program to fund researchers interested in the measurement and enhancement of imagination. The objective is to stimulate interest and support rigorous research in this area. (2) A series of research meetings during which creative leaders in various fields will be invited to exchange and discuss ideas about the nature and enhancement of imaginative abilities. The objective of this component is to generate innovative research questions and to investigate imagination from a domain-specific perspective.

Prospective Psychology Stage 1: Imagination and Being Drawn into the Future and Prospective Psychology Stage 2: A Research Competition (Templeton Foundation, PI-Dr. Martin Seligman). These are two inter-linked new grants for the field of Prospective Psychology. These two 3-year grants will explore how people are drawn to the future as opposed to driven by the past. We will conduct foundational research on prospective thought, defined as mental and emotional representations of possible future events, hold conferences of leading scholars and award research grants through a competitive RFP process.

Positive Soldier Health (Robert Wood Johnson Foundation: PI-Dr. Martin Seligman). This 4-year project supports a collaboration between the University of Pennsylvania and the U.S. Army to explore, on a large scale, the influence of psychological and physical health assets on illness, health care utilization and health care expenditure. This project is enabled by an Army initiative that is integrating 40 different datasets, combining data on the health, illness, health care utilization and psychological fitness of all active-duty personnel – currently more than a million soldiers. The project will also create the infrastructure for a civilian-military collaboration that will enable researchers outside the military to analyze the dataset and to explore issues related to traditional health-risk factors. Deliverables will include 40 proof-of-concept cross-sectional analyses for the relationship of key health assets and health-risk factors to key utilization variables; 40 proof-of-concept longitudinal analyses for the relationship of health assets and health-risk factors as predictors of illness and utilization; establishment of a civilian-military steering committee to oversee the analyses and develop protocols, processes and resources to enable external researchers to use the database; initiation of at least five external research projects in each of Project Years 3 and 4; and a plan for sustainability.

Positive Health (Robert Wood Johnson Foundation: PI-Dr. Martin Seligman). This 4-year project lays the groundwork for a new approach to improving physical health that focuses on "health strengths," instead of the traditional emphasis on diagnosis, treatment and prevention of disease. The premise is that health strengths are a buffer against physical and mental illness and, more importantly, that low-cost interventions can be designed to increase a person's health strengths. Such interventions could provide some low-cost options that improve health and reduce costs. The deliverables include (1) a formalized concept of Positive Health, (2) identification of variables that appear to be strong predictors of Positive Health, (3) a review of the relevant longitudinal studies that could be re-analyzed for Positive Health, (4) identification of interventions that could help people improve performance on those predictors, and (5) ideas for further development of the field.

Universal Assessment Research: Is the world good and does it matter? (Templeton Religion Trust, PI-Dr. Martin Seligman). We will explore how overall judgments of the world, termed
“universal assessments” (UAs), affect human behavior and life outcomes. Key questions include: Which UA profiles are most conducive to wellbeing? Can interventions be administered? The goal of this project is to identify innovative, efficacious, and scaleable interventions which can be used to improve the human condition. In decades ahead, businesses, teachers, therapists, religious leaders, governments, and others may adopt practices promoting certain UAs. Parents may make conscious choices about which UAs they wish to pass on to children. Individuals will be able to take questionnaires to assess their UA profile, learn how it might be optimized, and discover how others’ UAs influence them through the social network.

The Humanities and the Science of Well-Being: Toward a Strategic Collaboration for Understanding, Measuring, and Cultivating Human Flourishing (Templeton Religion Trust, PI-Pawelski). The purpose of this project is research to define, measure, and cultivate well-being in the humanities. There are three main activities: (1) research on the nature of the contemporary “positive turn” toward well-being and on the contributions the humanities might make in this endeavor, (2) the identification of leading scholars in the humanities, who believe in the importance of a strategic collaboration between these two domains for the study of well-being, and (3) the development of a large, multi-year, interdisciplinary grant proposal to launch such a strategic collaboration. Outputs include three peer-reviewed articles, a major entry in a standard reference work, six public lectures, a graduate course, a detailed listing of interested scholars in various disciplines, a planning meeting with some dozen key thought leaders, and a major grant proposal.

Positive Neuroscience (Templeton Foundation: PI-Dr. Martin Seligman). The primary purpose of the Positive Neuroscience project is to encourage and disseminate research at the intersection of Neuroscience and Positive Psychology. This project brings the maturing tools of neuroscience to bear on advances in Positive Psychology. One goal of the project is to create a network of talented young scientists to conduct research in this new field. To foster this network, the project will launch the Templeton Positive Neuroscience Research Awards competition. The awards will encourage research aimed at understanding how the brain enables flourishing. Up to twenty (20), 2-year grants averaging $200,000 were awarded to scientists from around the world who have received a Ph.D. or the equivalent and have begun their independent research careers within the past ten years. In addition to the awards competition, major activities of the project include creating a world-class Positive Neuroscience website, building a Positive Neuroscience Network via research retreats, and publishing a scholarly anthology of the research.

Character Development in Adolescence (Templeton Foundation: PI-Dr. Angela Duckworth). The primary aims of the project are: (1) to examine the impact of character strengths on academic success, social functioning, and psychological well-being; and (2) to examine potential interactions and overlap among character strengths. The primary measurement aims of the project are: (1) to develop age-appropriate, ecologically valid, teacher-report and self-report questionnaires assessing behavioral, cognitive, and motivational dimensions of these character strengths for use by both researchers and educational practitioners; (2) to create protocols and scoring rubrics for semi-structured interviews with adolescents about these strengths for use by researchers; (3) to examine evidence of reliability and construct validity (i.e., convergent, discriminant, and predictive validity) of newly developed questionnaires; and (4) in partnership with the Character Lab, to promote the use of valid measurement practices in the construction and evaluation of character development interventions.
Online Performance Tasks of Academic Diligence (University of Notre Dame, under a Templeton Foundation grant: PI-Dr. Angela Duckworth). The primary aim of this grant is to develop scaleable, online measures of academic diligence in a variety of domains. This involves rigorously piloting and revising novel tasks and culminates in a large-scale data collection in which we aim to validate these measures.

Building Grit via Online Interventions (Character Lab, PI-Dr. Angela Duckworth). This project has two primary aims: (1) to develop an online intervention that makes middle and high school students grittier, and (2) to develop a series of behavioral tasks that reliably measure grit. The proposed online intervention studies build upon a series of randomized-controlled interventions. Further randomized-controlled grit-building interventions will be administered to students in schools across the U.S. beginning in September, 2013.

Character Counts: Development of a Character Growth Card (Character Lab, PI-Dr. Angela Duckworth). This project has three related aims: (1) to develop teacher-report and self-report questionnaires assessing character strengths in middle school students, (2) to establish evidence of these questionnaires’ internal reliability, test-retest stability, convergent validity, discriminant validity, and predictive validity for a wide range of outcomes, and (3) to develop a format for reporting data from these questionnaires that makes salient to students changes in their character ratings over time and encourages them to set goals for improvement and plan for them.

Character counts: Developing and Validating Novel Measures of Character Skills (Spencer Foundation: PI-Dr. Angela Duckworth). The project has three related aims: (1) to develop teacher-report and self-report questionnaires assessing character strengths in middle school students, (2) to establish evidence of these questionnaires’ internal reliability, test-retest stability, convergent validity, discriminant validity, and predictive validity for a wide range of outcomes, and (3) to develop a format for reporting data from these questionnaires that makes salient to students changes in their character ratings over time and encourages them to set goals for improvement and plan for them.

Researcher-Practitioner Partnerships in Education Research grant R305H140121 (Department of Education: PI-Dr. Duckworth). The Strategic Education Research Partnership (SERP) and the Baltimore City Public Schools (BCPS) have established a “field site” partnership to focus on a district-identified challenge with students’ “grit and perseverance.” The primary aims of this grant and the proposed partnership are: 1) to establish infrastructure for a sustainable research-practice partnership; 2) to develop language to describe the grit and perseverance challenge among all members of the partnership; 3) to submit one or more proposals for further research and development; 4) to review and possibly revise the data collected routinely by BCPS on student grit and perseverance, and of the decisions that are informed by those data, and 5) to survey data on the effectiveness of the partnership from the perspective of all of its members.

Getting Grittier: Grit Curriculum & Professional Development for RBCS Elementary & Middle School (Mellon Family Foundation: PI-Dr. Duckworth). To meet the needs of students and families, RBCS plans to increase enrollment by 52%, from 485 to 730 students, and create a leading middle school serving grades 6 through 8. In addition to a rigorous core academic curriculum, we believe that helping students build character will be essential to their long-term success. Educators and researchers agree that character strengths like “grit” are highly correlated
with academic, social, health, and professional success. While the RBCS elementary school builds character through a myriad of activities, we plan to design a middle school that deliberately and systematically fosters grit and other essential character strengths in every student through an advisory model.

**Self-Control Strategies in School-Age Children (Robert Wood Johnson Foundation: PI-Dr. Duckworth).** The primary aim of this study is to examine self-control strategies in children, aimed to help them bypass immediately rewarding temptations for rival activities whose benefits accrue much later. This project will develop brief online interventions that teach self-control strategies to school-age children and adolescents, and test their effects on academic outcomes (e.g., homework completion, grades) and physical outcomes (e.g., healthy eating, physical activity).

**Understanding and Increasing College Persistence (Gates Foundation: PI-Dr. Angela Duckworth).** The purpose of this project is to provide new insight into student factors that predict college persistence and develop strategies to cultivate them via school-based interventions. This investigation entails three complementary components: (1) a longitudinal study of urban high school seniors through their first year of college; (2) an in-depth, multi-method study of urban high school seniors who have demonstrated exceptional learning trajectories; (3) a series of double-blind randomized intervention experiments with urban high school seniors aimed at improving their mindsets about their academic potential as well as the intellectual and social meaning of critical feedback from college professors.

**The Economics and Psychology of Self-Control (NIA: PI-Dr. Angela Duckworth).** This award supports training in economics and lifespan development under the mentorship of economists James Heckman and Flavio Cunha and personality psychologist Brent Roberts. Planned collaborative research will develop a multi-dimensional measurement system linking self-control and time preference, estimate the causal role played by self-control and other capacities for economic, social, and health outcomes across the lifespan, and develop a model of the development of self-control from infancy through old age.

**Fostering Self-Control: Strategies that Facilitate Working, Waiting, and Emotion Regulation (Templeton Foundation: PI-Dr. Angela Duckworth).** The goal of this project is to identify and understand learnable, teachable strategies that facilitate self-control and improve theoretical understanding of self-control. Controlled, random-assignment experiments will be designed to assess psychological distancing as a self-control strategy with preschool and school-age children, adolescents and young adults.

**Love Made Visible: Exploring the Role of Prosocial Motivation in Creativity (Templeton Foundation: PI: Dr. Martin Seligman and Marie Forgeard-Co-Leader, graduate student at PPC).** The main goal of this 3-year project is to investigate the role of prosocial motivation in creativity, and on the psychological well-being of creators in the arts and sciences. Although creativity has often been portrayed as a self-absorbed endeavor, we hypothesize that creative individuals may be moved by a desire to positively contribute to the lives of others. The series of studies included in this research program will use a combination of qualitative, quantitative, correlational and experimental methods to explore this topic. We expect that our program will yield effective new tools to help promising individuals fulfill their creative potential.
What Are the Real Benefits of Hardship? Examining Possibilities for Behavioral Growth Following Adversity (Templeton Foundation: PI-Eranda Jayawickreme, former graduate student at PPC, Martin Seligman-Co-Leader). This 3-year project examines actual behavioral growth following adversity, including: 1) the triggers of behavioral growth following adversity, 2) the key psychological connectors between cognitive growth and behavioral growth, and 3) the behavioral forms that growth takes. We believe our program is innovative for at least six reasons: First, this interdisciplinary research program combines rigorous scientific methodology with insights from philosophy, religious studies and the humanities. Second, we focus specifically on the growth effects of adverse life events, and moreover, conceptualize adversarial growth as a universal tendency as opposed to a clinical phenomenon. Third, we employ an eclectic multi-method approach towards examining behavioral growth. Fourth, we develop a series of studies utilizing innovative prospective designs to causally identify determinants of behavioral growth. Fifth, we capitalize on our access to extraordinary samples (conflict-affected populations in Sri Lanka and genocide survivors in Rwanda) to examine the relationship between different forms of adversity and positive behavioral growth. Sixth, we emphasize innovative dissemination strategies to ensure that our research has the widest impact. This research program has the potential to significantly advance our understanding of how adversity can lead to real positive behavioral change.

EDUCATION: GRADUATE AND UNDERGRADUATE

The Master of Applied Positive Psychology (MAPP). The MAPP program has completed its ninth year and this program has been successful in academic and financial terms. The number and quality of applicants and matriculates has been consistently high and the students have given the program high marks in their evaluations. Following are the number of applicants and admissions each year:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>106</td>
<td>111</td>
<td>123</td>
<td>166</td>
<td>163</td>
<td>181</td>
<td>178</td>
<td>236</td>
<td>198</td>
<td>166</td>
</tr>
<tr>
<td>Admits</td>
<td>34</td>
<td>36</td>
<td>41</td>
<td>38</td>
<td>45</td>
<td>36</td>
<td>36</td>
<td>36</td>
<td>39</td>
<td>40 (est.)</td>
</tr>
</tbody>
</table>

In line with the PPC’s stated mission of promoting education, PPC faculty, post-doctoral fellows and graduate students teach the following undergraduate and graduate-level courses through the School of Arts and Sciences and the College of Liberal and Professional Studies:

Martin Seligman
- MAPP 600: Intro to Positive Psychology (graduate level)

Angela Duckworth
- MAPP 601: Research Methods and Evaluation (graduate level)
- Psychology 266: Positive Psychology (undergraduate level)
Paul Rozin
- Psychology 301: Introduction to Experimental Psychology (undergraduate level)
- Psychology 70-001: Psychology of Food (undergraduate level)
- MAPP 700: Approaches to the Good Life (graduate level)
- Psychology 399: Independent Research (undergraduate level)

Marie Forgeard
- Psychology 299: Independent Study in Positive Psychology (undergraduate level)
- Psychology 399: Independent Study in Positive Psychology (undergraduate level)

Karen Reivich
- MAPP 708: Positive Psychology and Individuals (graduate level)

James Pawelski
- MAPP 602: Foundations of Positive Interventions (graduate level)
- MAPP 710: Humanities and Human Flourishing (graduate level)

Gordon Bermant
- Psychology 045: The Embodied Mind (undergraduate level for Benjamin Franklin Scholars)
- Psychology 470-301: Psychology and Religion (undergraduate level)
- Psychology 470-301: Psychology and Law (undergraduate level)
- Psychology 399: Independent Research (undergraduate level)

Judith Saltzberg
- MAPP 700: Approaches to the Good Life (graduate level)
- MAPP 708 Positive Psychology and Individuals (graduate level)

Margaret Kern
- MAPP 601: Research Methods and Evaluations (masters level) – Assistant Instructor
- PSYC 399: Individual empirical research (undergraduate)

Xuan Gao
- Psychology 170: Social Psychology (undergraduate) – Teaching Assistant
- Psychology 001: Introduction to Psychology (undergraduate) – Teaching Assistant

Johannes Eichstaedt
- MAPP 600: Intro to Positive Psychology (graduate level) – Assistant Instructor

David Yaden
- MAPP 600: Intro to Positive Psychology (graduate level) – Assistant Instructor
- MAPP 710: Humanities and Human Flourishing (graduate level) – Assistant Instructor

Jeremy Clifton
- MAPP 702: Applied Positive Interventions (graduate level) – Assistant Instructor
- MAPP 710: Humanities and Human Flourishing (graduate level) – Assistant Instructor
RESILIENCE TRAINING PROGRAMS

Since 2007, the PPC has offered large-scale resilience training for educators, and starting in 2009 we have delivered resilience training to U.S. Army soldiers. These training programs for educators are training contracts between Penn and the educational sponsors, primarily schools in the United Kingdom and Australia. The training program for Army Soldiers is a contract with the U.S. Government.

Here is some background on our resilience programs: Resilience is teachable. From 1990 to 2009, Dr. Martin Seligman and his colleagues, Dr. Jane Gillham, Dr. Karen Reivich, and Peter Schulman, received over $10 million dollars in federal grants from the National Institute of Mental Health (NIMH) and U.S. Department of Education to conduct research and development on resilience programs with three different populations – middle school students, high school students, and college students. This series of large scale, longitudinal, controlled studies showed that individuals who attended the resilience programs had significantly less depression, anxiety and conduct problems, and higher well-being than those in the control group.

There is an extensive body of literature documenting the effects of the Penn team's resilience curricula. The resilience program for middle school students alone has been evaluated by Penn and other research teams in at least 22 controlled studies with more than 2,000 children and adolescents.

Drs. Seligman, Reivich, and Gillham are leaders in their fields. Dr. Seligman is well-known for his ground-breaking work in depression, helplessness, and Positive Psychology, and Dr. Reivich and Dr. Gillham are leaders in the field of depression prevention, resilience interventions and school-based intervention research.

The Penn team has 25 years of experience developing and delivering resilience curricula to students, as well as training teachers how to deliver the resilience programs to students. During this time, Penn has trained more than a thousand educators.

Since 2007, we have delivered large-scale resilience training programs using our train-the-trainer model. Our lead curriculum developer and head trainer, Dr. Karen Reivich, has led all aspects of this delivery and trained hundreds of trainers to work with the Penn team in the training of school teachers and Army soldiers. This has enabled Penn to carry out large-scale training programs with teachers and Army soldiers and train them how to deliver the resilience programs within their organizations.