Proposal ID	PI	Title	Abstract
91001	METZGER	PARTICLE ACCELERATION AND NON-THERMAL EMISSION IN GAMMA-RAY NOVAE	The discovery by Fermi LAT of GeV gamma-rays from classical novae illustrates that shocks and high energy particle acceleration are common in nova outflows. A model will be developed for the non-thermal emission of nova shocks, which connects the GeV to hard X-ray (e.g. NuSTAR) and TeV (photon and neutrino) bands. This model will include radiative cooling of the shocked gas and the effects of relativistic particles and magnetic fields on its compressibility and emission. The prospects for TeV emission depends on the maximum particle energy accelerated in nova shocks. The latter will be evaluated by analyzing the growth rate of the cosmic-ray current-driven instability including neutral-ion damping and a self-consistent treatment of the photo-ionization of the upstream gas.
91002	MASSARO	CONTINUING THE OPTICAL SPECTROSCOPIC CAMPAIGN OF THE GAMMA-RAY BLAZAR CANDIDATES	One of the main scientific objectives of the Fermi-NOAO Cooperative Arrangement is: studying candidate counterparts, including redshift determination of previously unknown BL Lacs and high-redshift blazars. We propose to continue our optical spectroscopic campaign, already approved in Fermi Cycle 6, to reveal the nature of all the blazar candidates of uncertain type (BCUs) associated in the Third Fermi-LAT catalog and all the blazar-like objects, potential counterparts of the unidentified gamma-ray sources (UGSs), selected according to our methods based on the IR colors. Our legacy project is crucial to prepare the future releases of the Fermi catalogs and to improve our knowledge of the blazar population.
91005	FRAIL	TRACING HADRONIC PARTICLE ACCERATION IN SUPERNOVA REMNANTS	The Fermi mission has used it spectral and spatial resolution to great affect to study the sites of cosmic ray acceleration in Galactic supernova remnants (SNRs). The recent LAT catalog identified 30 GeV SNRs. Distinguishing between hadronic and leptonic emission processes is difficult. As a result, more than half the LAT SNR catalog remains unclassified. We propose VLA observations of these sources to search for OH maser emission at 1720 MHz. The detection of such masers is unambiguous proof that the SNR is interacting with a molecular cloud, and hence a hadronic origin for the gamma-ray emission. OH masers allow measurements to be made of the gas density, the distance and (in some cases) the magnetic field of the SNR. All of these are important quantities in testing acceleration models.

91054	CORBET	NEW GAMMA-RAY BINARIES	The higher sensitivity of Pass 8 data has enabled the discovery of the first definite new high-mass gamma-ray binary in five years, a luminous source in the LMC, and one very good and several weaker Galactic candidates. We propose to investigate the new source and candidates in detail using multiwavelength observations and search for additional candidates.
91065	DESAI	THE LAT ON STEROIDS AND THE ROLE OF GALAXIES IN THE UNIVERSE	The extragalactic background light (EBL) encodes the emission from all the stars and galaxies that ever existed in the observable Universe. Fermi has already detected the attenuation caused by the EBL in the spectra of 150 BL Lacs up to z=1.5. This program uses more and better data to constrain, for the first time, the EBL and its evolution up to a redshift of z=2.5 reducing considerably the uncertainties across all the redshift range. This has the power to discriminate between EBL models (at z=2) and provide reliable estimates of the UV-optical background, placing strong constraints on the integrated light from all galaxies and on the fraction of photons that escape their host galaxies. Both quantities are fundamental to understand the role of faint galaxies during re-ionization.
91092	PASCHALIDIS	STUDIES OF GAMMA-RAY BURST ENGINES IN FULL GENERAL RELATIVITY	We propose to perform magnetohydrodynamic simulations in full general relativity of short and long GRB engines. In particular, we propose to simulate the dynamical capture merger of magnetized binary black hole-neutron stars (BHNSs) and the collapse of massive, rotating PopIII stars, to investigate the conditions under which relativistic jets can be launched from these systems. These studies are motivated by recent results arguing that eccentric BHNS mergers can be frequent enough to account for at least a fraction of short GRBs, and from Fermi GBM (and Swift) observations of GRBs at redshifts z~5.3-8.0, where the PopIII star formation rate is expected to peak. We will explore the effects of different equations of state, mass ratios, magnetic field geometries and total masses.
91097	JENKE	GBM EARTH OCCULTATION MONITORING	We propose to use software developed for Fermi/GBM Earth occultation analysis to continue to monitor a catalog of sources, providing automatically updated light curves (plots, ASCII files, and FITS files) and energy spectra for select sources as a service to the community via our website and FITS files via the FSSC. We propose to continually enhance our website in response to the scientific community s needs as exposure to our website increases beyond the X-ray community.

91107	PEARSON	OPTICAL POLARIZATION MONITORING OF FERMI BLAZARS WITH ROBOPOL	The optical emission in blazars is generally highly variable and strongly polarized. Many blazars have shown EVPA rotation events in which the plane of optical polarization rotates continuously through large angles (> 90deg), and it is clear that most of the events are not due to a random walk of the polarization vector. Some of the events are associated with strong gamma-ray flares. The association promises to provide insight into the location of the gamma-ray emission and the role of geometry and magnetic field in shaping a coherent EVPA rotation. We will provide optical R-band intensity and linear polarization time series of selected blazars from the RoboPol instrument to compare with Fermi light curves and test physical models of blazar jets.
91118	WILLIAMS	SPECTROSCOPY AND EVOLUTION OF THE EXTRAGALACTIC BACKGROUND LIGHT	We have developed a method to determine the extragalactic background light (EBL) by means of the joint fit of multiple blazars' spectra from ground-based observatories. We propose to extend this method by the incorporation of data from the Fermi-LAT. First, we will improve the extracted EBL spectrum at near ultraviolet and optical wavelengths, probing sources important for understanding the reionization of the Universe and not well constrained by current models or observations. Second, we will study the redshift evolution of the EBL for the first time in a model-independent way. An additional outcome of this work will be a new constraint on the Hubble constant.
91129	FORTSON	VERITAS MONITORING OF THE PERIODIC BLAZAR PG 1553+113 DURING FERMI-LAT PREDICTED MAXIMUM	Recent results of the Fermi-LAT collaboration show a signature of a periodic modulation of ~2 years on the gamma-ray light curve of the blazar PG 1553+113. Similar modulation was found at lower frequencies. This is the first time that such periodicity has been found in gamma-ray emission from a blazar. Several scenarios have been proposed to explain the two-year oscillation period and multi-frequency monitoring campaigns with the VHE band in particular are fundamental to differentiating between them. To probe the minimum of the periodicity in VHE, the three major IACTs (VERITAS, HESS and MAGIC) have initiated a joint observing campaign for the 2016 season. This Fermi-VERITAS GI proposal seeks to secure 20 hours of VERITAS observing time for the 2017 season to probe the predicted maximum.

91141	CENKO	THE BEAMING AND ENERGETICS OF NATURE'S BRIGHTEST EXPLOSIONS	We propose here to continue our successful program to provide complementary multi-wavelength observations of well-localized gamma-ray bursts (GRBs) detected by the Fermi Large Area Telescope. Specifically, our program is designed to 1) identify long-wavelength (optical and radio) counterparts, 2) obtain spectroscopic redshifts, and 3) measure beaming-corrected energies (burst plus afterglow) of Fermi-LAT GRBs. This study will provide us with new insights into the least understood aspect of GRBs -- the central engines -- by constraining the maximum energy available for progenitor models (e.g., magnetars and black holes).
91142	BAILYN	SMARTS OPTICAL AND INFRARED MONITORING OF FERMI LAT BLAZARS	Blazars are AGN in which a relativistic jet is directed toward the observer resulting in Doppler boosting. Much of the spectral energy distribution of these sources is dominated by the jet. Thus blazars are key to understanding the physics of relativistic jets. Several blazars have exhibited remarkable gamma-ray flares that are also observed in optical/near-infrared (O/IR) wavelengths. Simultaneous data provides strong constraints on the geometry and physical conditions of the jet-emitting plasma. Here we propose to monitor the ensemble of gamma- ray bright blazars with in the optical and IR with the SMARTS 1.3m telescope at Cerro Tololo and the ANDICAM dual channel imager.
91148	WILSON-HODGE	STUDIES OF ACCRETING BINARY PULSARS WITH THE FERMI GAMMA-RAY BURST MONITOR IN CYCLES 9 AND 10	Since Cycle 1 we have been continuously monitoring the full sky with Fermi GBM for pulsars with spin frequencies in the 1 mHz to 2 Hz (to 16 Hz starting in cycle 7) range. We conduct daily blind searches to discover previously unknown or quiescent pulsars. We also perform source specific analyses to track the evolving pulse frequencies of all detected pulsars, resulting in time histories of the pulse profile, pulsed flux, and frequency of these sources. We are providing, through our website and ATels, quick-look estimates of pulsed flux and frequency for use in multi-wavelength observations. We propose to continue this pulsar monitoring in cycles 9 & 10, and to perform updated orbital analysis for GRO J1008-57, V0332+53, and other sources as they outburst.

91154	CHEUNG	PROMPT FOLLOW-UP OF FLARING/TRANSIENT FERMI-LAT GALACTIC PLANE SOURCES	We propose a comprehensive search and follow-up program of flaring/transient Fermi-LAT Galactic plane gamma-ray sources. Essential to this effort are the VLA observations requested here. At high-significance (>=5 sigma), we expect up to 2-3 all-sky events/year, with ~2/3 visible with the VLA, thus request 2 ToOs. Together with pre-approved Swift XRT/UVOT observations, we aim to identify plausible radio, X-ray, and optical counterparts following the LAT event via expected correlated variability. In case a plausible VLA counterpart is identified, we will obtain further radio follow-up with our OVRO and LWA1 partners. After the successful discovery of novae as a class of GeV emitters, these coordinated observations will enable us to uncover even rarer types of Galactic gamma-ray transients.
91170	BUTLER	TOWARD NEXT GENERATION FOLLOWUP OF COMPACT BINARY COALESCENCE EVENTS	Compact binary coalescence (CBC) events represent powerful engines for the production of gravitational, electromagnetic and neutrino radiation. Many facilities around the world -- like our RATIR camera -- are engaged in attempting to find the electromagnetic counterparts to LIGO gravity wave triggers. A complementary approach -- given the possible linkage between short-duration Gamma-ray bursts (sGRBs) and CBC events -- is to focus on the followup of sGRBs. We propose to utilize a novel short-duration GRB selection methodology to optimize Fermi followup with RATIR and two other new facilities coming online at the same observatory.
91175	GEORGANOPOULOS	THE EXTENDED GEV EMISSION OF CEN A: THE EXTRAGALACTIC BACKGROUND LIGHT IN DISGUISE?	The southern lobe of Cen A offers a unique opportunity to measure the extragalactic background light (EBL). In leptonic models, the LAT-detected emission below ~ 2 GeV is inverse Compton scattering (ICS) of CMB photons by the lobe electrons. The LAT-detected emission above 2 GeV is ICS of EBL photons by the same electron population, and a measurement of this can recover the EBL. Previous studies suffered from short integration times that resulted in low energy cutoffs and large errors in the LAT spectrum. The study we propose will overcome these issues in measuring the EBL and also evaluate the required hadronic emission from the lobes which in turn will measure the required relativistic proton population for the first time.

91194	GEORGANOPOULOS	LOCATING THE GAMMA-RAY EMISSION SITE OF POWERFUL BLAZARS: THE SED DIAGNOSTIC	The location of the Gamma-ray emission of powerful blazars is a matter of active debate. Is the location within the UV-emitting sub-pc scale broad line region, or farther out at pc scales where the molecular torus IR emission dominates? We present a diagnostic that connects three observables, the synchrotron and external Compton peak frequencies and the Compton dominance (the ratio of Compton to synchrotron luminosity) to the seed photon energy and energy density. We discuss encouraging preliminary results and propose to use our diagnostic to understand the location of the Gamma-ray emission as a function of source power through the use of multiwavelength observations, including data from WISE, Planck, BAT, SWIFT and LAT.
91201	DRLICA-WAGNER	SEARCH FOR DARK MATTER ANNIHILATION IN NEWLY DISCOVERED MILKY WAY SATELLITE GALAXIES	One of the primary objectives of the Fermi mission is to probe the nature of dark matter. Searches for gamma-ray signals from dark-matter-dominated Milky Way satellite galaxies are one of the most sensitive and robust probes of particle dark matter. Over the last year, optical imaging surveys have nearly doubled the number of Milky Way satellite galaxies. We propose to: (1) search for gamma-ray signals coincident with all recently discovered dwarf galaxies, (2) discover new Milky Way satellite galaxies in large optical surveys, and (3) perform spectroscopic observations to better characterize the dark matter content of newly discovered dwarf galaxies. We will publicly release intermediate LAT data products that can be used to further investigate dwarf galaxies in a dark matter context.
91212	MAJID	TESTING MILLISECOND PULSAR INTERPRETATION OF THE GALACTIC CENTER GAMMA-RAY EXCESS	Over the past few years, a number of groups using data from the Fermi LAT instrument have identified excess gamma-ray flux toward the inner one degree of the Galactic Center. One possible source of this excess is suggested to be a population of millisecond pulsars (MSP). The goal of this project is to constrain the MSP population in this region of the galaxy by carrying out a sensitive search for MSPs at high radio frequencies.

91224	FALCONE	SYSTEMATIC SEARCH FOR X-RAY COUNTERPARTS OF FERMI-LAT UNASSOCIATED SOURCES USING SWIFT: NEW BLAZARS, PULSARS, AND MORE	We propose to use Swift to search for X-ray and UV/optical counterparts of unassociated 3FGL Fermi-LAT sources. Prior programs led to Swift observations of 261 and 199 Fermi unassociated sources from the 1FGL and 2FGL catalogs respectively, as well as initial 3FGL observations. Possible x-ray counterparts are found in ~1/3 of these. These new data will determine the properties (with ~5 arcsec positions) of all detected X-ray sources in the LAT unidentified 3FGL regions, contributing to identification, classification, and follow-up. This proposal supports the large analysis and interpretation task, which will require additional data reduction software. The Swift PI and Exec Committee commit to the Swift observing time. Reduced data will be made publicly available to everyone.
91230	BOGDANOV	A VLA SURVEY FOR TRANSITIONAL MILLISECOND PULSARS IN UNASSOCIATED FERMI LAT SOURCES	Three neutron star systems were recently observed to switch between accretion-powered and radio millisecond pulsar (MSP) states. Fermi LAT revealed that these so-called transitional MSPs exhibit gamma-ray emission even during their accreting states. At the same time, highly-variable flat-spectrum radio emission is seen. This observational characteristic offers a particularly promising approach towards identifying additional accreting MSPs. We propose to conduct a pilot survey with the Very Large Array of seven 3FGL sources that are strong accreting MSP candidates. Extending the presently limited sample of these systems has important implications for accretion processes and jet formation physics, and potentially the nature of the puzzling Galactic center gamma-ray excess.
91237	VIANELLO	THE LAT TRANSIENT FACTORY: THE FIRST 130 LAT GRBS AND A BLIND SEARCH FOR SHORT-DURATION TRANSIENTS	Our triggered search for GRBs outperforms the previous one by 60%, yielding 130 GRBs in 6 years. We will characterize temporal and spectral features of this sample, providing a dataset which will serve as a reference for many years to come. We will model them with leading theoretical models and gain insights on particle acceleration mechanism in the ultra-relativistic regime. We also devised a blind search unlocking a new discovery space, looking for short and faint transients invisible to existing algorithms. It can detect GRBs from high-redshift Pop-III stars, orphan GeV afterglows, primordial Black Holes and unexpected phenomena. We will detect these transients in real time and on archival data for the first time, or constrain their rate and features.

91241	SIRONI	FIRST-PRINCIPLE MODELING OF THE CRAB GEV FLARES	Our high-energy view of the Crab nebula has been recently revolutionized by the Fermi and AGILE satellites, which detected a number of hours-long flares at GeV energies. In this two-year project, we propose to perform unprecedentedly large fully-kinetic particle-in-cell simulations, to directly test whether relativistic magnetic reconnection can be a viable explanation for the short rise times, hard spectra and high peak frequency of the Crab flares. Unlike earlier simulations (a factor of ~ 50 smaller than the estimated emission size), we will study from first principles the length and time scales relevant for the Crab flares, produce synthetic lightcurves and spectra from the accelerated particles, and thus assess the physical conditions that give rise to such extraordinary phenomena.
91245	DI MAURO	DETERMINING THE CONTRIBUTION OF POINT SOURCES TO THE IGRB WITH AN ENERGY-DEPENDENT PHOTON FLUCTUATION ANALYSIS.	We propose to use for the first time photon fluctuation analysis (PFA) in different energy bins at E > 1 GeV to constrain the contribution of undetected point sources to the IGRB as a function of energy. The PFA is sensitive to the source count distribution (dN/dS) well below the threshold of the LAT, thus reducing the need to extrapolate the dN/dS. This technique applied to E > 10 GeV would be sensitive to fluxes a factor of 30 lower than the present Fermi-LAT catalogs and increase the fraction of EGB resolved as due to point sources from 50% to about 90%. Such a result would leave little room for exotic mechanisms such as gamma-ray emission from dark matter particle interactions and would constrain the flux distribution of gamma-ray faint source populations.
91248	FALCONE	LONG-TERM SIMULTANEOUS OPTICAL/X-RAY/GAMMA-RAY SPECTRA AND LIGHT CURVES OF BLAZARS	This proposal will enable long-term low-to-high state multiwavelength coverage, specifically Swift data, on the Fermi monitored source list and many other blazars and transients. We will also obtain deeper simultaneous Swift data during high states from these sources or from any other new sources that exceed this threshold, thus triggering larger monitoring campaigns. Continuation of this previously successful effort is needed for long-term multi-band correlation and emission studies in low through high states. Observations will be coordinated with other observatories to maximize science return. Automatically reduced data will be made public in near-real-time thus providing a public service and an archival legacy project on these high interest sources (available at www.swift.psu.edu/).

91250	RANSOM	NEW SEARCHES FOR RADIO MILLISECOND PULSARS IN FERMI SOURCES	Fermi has had a spectacular impact on pulsar research, and millisecond pulsars (MSPs) in particular. In the past 7 years, astronomers have discovered 69 new MSPs (3/4 by our group, 34 at the GBT, and 8 at Arecibo) in Fermi unassociated sources. The vast majority were discovered as part of the Pulsar Search Consortium. We aim to continue this amazing MSP discovery pace using the GBT and Arecibo. With 7 years of Fermi survey data, and the new "Pass 8" analysis, there are scores of new high Galactic latitude unassociated sources to search. In addition, we will re-search ~10 bright and very pulsar-like sources in case eclipses or unfortunate scintillation hampered earlier search efforts. We request 50 hours of GBT time and 30 hours of Arecibo time for this project.
91261	ABAZAJIAN	EMPIRICAL MULTIWAVELENGTH ANALYSES OF THE MILKY WAY'S GALACTIC CENTER	We propose to create and test a set of diffuse and extended emission models based on empirical multiwavelength observations of the Milky Way's Galactic Center (GC) region with maps of the molecular and ionized gas as well as inverse Compton emission of leptonic cosmic rays in the interstellar radiation field. These models and maps would be complementary to detailed numerical reconstructions of cosmic ray emission in the GC. We aim to use radio, optical and X-ray map templates with appropriate spectral models for the GC region. We also aim to find how robust the extended emission detected in the GC is to variation of these empirical models, and how it changes the inferred properties of millisecond pulsar population or dark matter annihilation interpretations of extended emission in the GC.
91263	KAUR	HUNTING HIGH-REDSHIFT BL LACERTAE OBJECTS	We will perform 13-filter photometry, using Swift and GROND, with the goal of measuring photometric redshifts for the Fermi BL Lacs (unknown z) visible from Chile. GROND+UVOT coupling allows us to determine accurate photo-z in the 1.3--8.0 range. We will target 80 objects and expect to find ~20 of them at z>1.3 thus doubling the current number of high-z sources. While undoubtedly rare, these detections represent a major achievement as high-z BL Lacs probe the UV-optical radiation field to understand the evolution of the blazar family. This program will provide high-quality IR-to-UV data that will be released to the general public. We also request to establish spectroscopic redshifts for 5 new high-z BL Lacs obtained through this continuing program (cycle 8) with the SOAR telescope.

91264	GUIRIEC	TOWARD A UNIFIED MODEL FOR GRB BROADBAND PROMPT EMISSION	The goal of this project is to lay the foundation for a solid physical understanding of the radiation processes responsible for the prompt emission of GRBs. We propose a new model, which combines three physically-motivated components. Initially derived from a handful of bright Fermi GBM+LAT GRBs, we validated this model using BATSE, Swift+Suzaku and Konus data. It is now time to apply this model to all Fermi GRBs. A better understanding of the nature and temporal evolution of these components will inform on the composition and energy reservoirs powering GRB jets, on the particle acceleration processes within the jets, and subsequently on the nature of the central engine. A direct consequence of this new model is the potential for establishing GRBs as cosmic standard candles.
91268	HARTMANN	RAPID OPTICAL/NIR FOLLOW-UP OF FERMI TRANSIENTS	The Gamma-Ray burst Optical/Near-IR Detector (GROND) camera has supported Fermi observations of transients and steady sources since the beginning of the mission, providing sensitive and simultaneous Optical/NIR observations. GROND data allowed Fermi to achieve several key results like the detection of the most luminous GRB, constraints on Lorentz invariance violation and detection of absorption by the EBL. In an epoch when available telescope time is declining and the number of Fermi transients will likely increase, we propose to augment GROND capabilities for Fermi transient follow-up with the goal of increasing the rate of detected afterglows and to enable a new mode of community-triggered GROND responses.
91272	BARING	COMPTONIZED CLOUD MODELS FOR MAGNETAR FLARES	The Fermi mission has enhanced magnetar science through the observation of prolific flare activity from select sources using the Gamma-Ray Burst Monitor. Magnetar spectra are often best fit by a power law with an exponential cutoff, a so-called Comptonized form. This proposal is to perform detailed radiative transfer in an electron-photon cloud, modeling the establishment of magnetar soft gamma-ray spectra using a Monte Carlo approach. The high Thomson opacity in their magnetospheres yields polarization-dependent anisotropic Comptonization. Given an impulsive injection of energy at either equatorial or polar locales, the transport of radiation and energy exchange between pairs and photons will be tracked, using Fermi-GBM observations to provide diagnostics on the injection site.

91279	MEYER	UNDERSTANDING ENERGY-DEPENDENT VARIABILITY OF FERMI SOURCES	Many high-energy astrophysical phenomena observed by Fermi}are characterized by very short timescale variability. The standard method of lightcurve analysis usually involves either time binning or raw histograms. In the case of energy-dependent variability, further binning on photon energy presents the problem of demanding many more photons than are available to detect significant energy-dependent behavior, and of poorly satisfied assumptions. Based on previous work using an unbinned maximum-likelihood approach to fit blazar flares, we propose to develop a general-purpose tool which can be used to fit any (user-supplied) model for which the flux varies as a function of time and energy. We propose to use this method to analyze blazar flares for evidence of energy-dependent behavior.
91292	TROJA	PROMPT LOCALIZATION OF FERMI GBM AFTERGLOWS	We propose a systematic follow-up program of poorly localized Fermi/GBM gamma-ray bursts (GRBs). In order to fully exploit the large dataset of Fermi GRBs, it is of vital importance to rapidly provide an arcsecond localization, which enables extensive follow-up campaigns and redshift measurements. This effort will benefit the entire GRB community and greatly enhance the scientific return of Fermi GRB observations.
91293	KAZANAS	PROBING THE COMPOSITION AND MAGNETIC FIELD STRUCTURE OF THE FERMI BUBBLES	We propose a simple experiment to probe the composition and magnetic field morphology of the Fermi bubbles. This information has the potential to provide definitive clues about the origin and formation of these structures. To this end we propose VLBA observations under the joint Fermi-NRAO program to determine the Faraday rotation along three carefully selected lines of sight to bright background blazars.
91301	HUPPENKOTHEN	UNRAVELLING SOLAR FLARE VARIABILITY WITH FERMI/GBM	Despite being the most powerful events in the solar system, the energy release and emission mechanisms behind solar flares remain poorly understood. Here, we propose development of a new detection method for periodicities as well as the first ever large-scale sample study of solar flares detected with Fermi/GBM. The new method will allow us to detect periodicities with a high confidence. The study itself will lead to a precise characterization of these signals and provide both a direct way to distinguish competing theories of magnetic reconnection and MHD oscillations, as well as form the foundation for future multi-wavelength studies.

91303	GERINGER-SAMETH	DARK MATTER ANNIHILATION SEARCHES IN DWARF GALAXIES: INTEGRATED CHEMODYNAMICAL MIXTURE MODELING AND GAMMA-RAY ANALYSIS	We propose a novel method to improve constraints on dark matter annihilation from dwarf galaxies. Our method overcomes the inevitable contamination of stellar-kinematic samples, allowing us to model all relevant astrophysical data simultaneously, while avoiding several arbitrary assumptions to which all previous analyses have been sensitive. We propose to apply this new analysis to all known dwarf galaxies. The resulting constraints on dark matter density profiles will be the most robust available for these galaxies, and we expect they will be of high interest to the many groups currently searching Fermi data for signals of dark matter annihilation (and/or decay).