

CURRICULUM VITAE

GREGG B. FIELDS, Ph.D.

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EDUCATION

1976-1979 A.A., Chemistry, Broward Community College, Davie, FL 33314
1979-1982 B.S., Department of Chemistry, University of Florida, Gainesville, FL 32611
1983-1988 Ph.D., Department of Chemistry, Florida State University (FSU), Tallahassee, FL 32306

SCIENTIFIC EMPLOYMENT/ACADEMIC APPOINTMENTS

5/82-9/82 Quality Control Analytical Chemist, Key Pharmaceuticals, Incorporated, North Miami Beach, FL 33161
5/83-4/84 Teaching Assistant in Biochemistry and Organic Chemistry, Department of Chemistry, FSU
5/84-11/88 Research Assistant, Department of Chemistry, FSU
12/88-1/91 Postdoctoral Scholar with Professor Ken A. Dill, Department of Pharmaceutical Chemistry, University of California, San Francisco, CA 94143
3/90-1/91 Visiting Scientist, Peptide Synthesis Research and Development, Applied Biosystems, Incorporated, Foster City, CA 94404
2/91-5/95 Assistant Professor, Department of Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN 55455
2/91-5/95 Assistant Professor, Biomedical Engineering Center, University of Minnesota
2/93-5/95 Assistant Professor (Joint Appointment), Department of Biochemistry, University of Minnesota
5/95-12/97 Associate Professor, Department of Laboratory Medicine and Pathology, University of Minnesota
5/95-12/97 Associate Professor, Biomedical Engineering Center, University of Minnesota, Minneapolis
5/95-12/97 Associate Professor (Joint Appointment), Department of Biochemistry, University of Minnesota
1/96-12/03 Full Member, University of Minnesota Comprehensive Cancer Research Center
12/97-7/08 Professor, Department of Chemistry and Biochemistry, Florida Atlantic University (FAU), Boca Raton, FL 33431-0991
10/99-7/08 Professor, Department of Biomedical Science, FAU
8/00-7/08 Chair, Department of Chemistry and Biochemistry, FAU
7/05-12/14 Adjunct Professor, Advanced Technology, The Scripps Research Institute (TSRI)/Scripps Florida, Jupiter, FL 33458
3/06-7/08 Full Member, H. Lee Moffitt Comprehensive Cancer Center & Research Institute, Tampa, FL 33612
10/06-12/09 Full Member, Sylvester Comprehensive Cancer Center, University of Miami Miller School of Medicine, Miami, FL 33136
1/08-12/12 Full Member, Cancer Therapy & Research Center, University of Texas Health Science Center at San Antonio (UTHSCSA), San Antonio, TX 78229-3900
8/08-12/10 Professor, Department of Biochemistry, UTHSCSA
6/09-12/10 Adjunct Professor, Department of Chemistry, The University of Texas at San Antonio, San Antonio, TX 78249

12/10-2/16	Full Member, Torrey Pines Institute for Molecular Studies (TPIMS), Port St. Lucie, FL 34987
12/10-5/12	Director of Research, TPIMS
9/11-12/14	Affiliate Professor, Departments of Biomedical Science and Chemistry, FAU
5/12-12/14	Vice President of Scientific Affairs, TPIMS
9/13-12/14	President, TPIMS (appointed, but declined)
12/14-present	Professor, Department of Chemistry and Biochemistry, FAU, Jupiter, FL 33458
12/14-6/19	Chair, Department of Chemistry and Biochemistry, FAU, Jupiter, FL
12/14-5/23	Director, Center for Molecular Biology & Biotechnology, FAU, Jupiter, FL
12/14-4/22	Adjunct Professor, Department of Chemistry, TSRI/Scripps Florida
9/16-present	Member, FAU Brain Institute
2/17-present	Member, FAU Research Core Facility Oversight Committee
3/17-present	Member, FAU 2015-2025 Strategic Planning Committee
9/17-present	Member, FAU Harbor Branch Pillar
10/17-present	Member, FAU Research Leadership Committee
11/17-present	FAU Jupiter Coordination Council
2/18-6/18	Member, Provost Search Committee, FAU
3/19-6/22	Jupiter Life Science Initiative (JLSI)/Legislative Budget Request (LBR) Strategy and Budget Committee, FAU
7/19-present	Executive Director, Institute for Human Health and Disease Intervention (I-HEALTH), FAU, Jupiter, FL
7/20-present	Co-Chair, Institutional Liaison Committee (ILC), FAU
2/21-present	Co-Director, Memorial Cancer Institute Florida Atlantic University (MCIFAU) Florida Department of Health Cancer Center of Excellence
4/21-1/22	Member, Dean of the College of Medicine Search Committee, FAU
4/22-9/22	Member, Provost Search Committee, FAU
7/22-present	Member, FAU Health Internal Visioning Committee, FAU
9/22-present	Courtesy Professor, Department of Chemistry, Herbert Wertheim UF Scripps Institute for Biomedical Innovation & Technology, Jupiter, FL
12/22-present	Member, Jupiter Visioning Committee, FAU
5/23-present	Interim Vice President for Research, FAU

HONORS

Young Investigator Award, Matrix Metalloproteinase Conference, 1989.

Young Investigator Award, 12th American Peptide Symposium, 1991.

McKnight-Land Grant Professorship, University of Minnesota, 1993-1995.

National Institutes of Health Research Career Development Award, 1994-1999.

Invited Lecturer, Carlsberg Laboratory, Valby, Denmark, 1994.

Invited Guest Editor, *Peptide Science: Comprehensive Reports & Reviews*, 1994-1996.

Invited Editor, *Methods In Enzymology*, 1995-1998.

Profiled in *Today's Life Sciences* **9**(1), January 1997, "Tumours and techniques," p. 36.

Association of Biomolecular Resource Facilities Excellence Award in Peptide Synthesis Research, 1997.

Selected as one of "2000 Outstanding Scientists of the 21st Century," 2000.

Researcher of the Year Award (Full Professor), FAU, 2000-2001.

Profiled in *Boca Raton Magazine* **23**(3), May/June 2003, "8 Florida Scientists Who Are Saving Your Life: Breakthrough Medicine - Stopping The Spread Of Cancer," pg. 98-100.

Invited Editor, *Methods In Molecular Biology*, 2003-2007.

Profiled in *Time Magazine* **163**(23), June 7, 2004, "The Secrets Of Their Success," pg. 107-110.

Distinguished Visiting Professor, Imperial College London, 2004.

Faculty of 1000 Biology, Chemical Biology Faculty, Protein Chemistry & Proteomics section, 2004-present.

Profiled in *NanoBiotech News* **3**(36), September 21, 2005, "Florida Atlantic University, Moffitt get \$1M to develop liposome-based drugs," p. 7.

Researcher of the Year Award (Full Professor), FAU, 2005-2006.

Profiled in *Chemical Biology & Drug Design* **67**(2), February 2006, "Who's Who In Chemical Biology & Drug Design," p. 187.

Keynote Speaker, PepCon-2008, Shenzhen, China, 2008.

Roche U.S.-Sponsored Keynote Speaker, Chemistry & Biology of Peptides 2008, University of Nottingham, England.

BIT Life Sciences Lifetime Membership Award, 2008.

Robert A. Welch Foundation Distinguished University Chair in Chemistry, UTHSCSA, 2008-2010.
University of Texas System Science and Technology Acquisition and Retention (STAR) Award, 2008.
University of Texas System Science and Technology Acquisition and Retention (STAR) Plus Award, 2008.
Keynote Speaker, PepCon-2009, Seoul, South Korea, 2009.
Commencement Speaker, UTHSCSA, School of Graduate Sciences, 2009.
Keynote Speaker, 2nd World Cancer Congress, Beijing, China, 2009.
Plenary Lecturer, 2nd Modern Solid Phase Synthesis & Its Applications Symposium, Brisbane, Australia, 2009.
Distinguished Chair of Metalloproteinase and Multiple Sclerosis Research, TPIMS, 2010-2014.
Arthritis & Chronic Pain Research Institute Lecturer, University of Florence, Italy, 2011.
Profiled by *Journal of Biological Chemistry*, http://www.jbc.org/content/288/13/8785/suppl/DCAuthor_profile, 2013.
Profiled in *ASBMB today* **12**(5), May 2013, "Deconstructing Collagen: Insights into collagen mechanisms," p. 23.
Plenary Lecturer, 2nd Proteomics & Peptide Synthesis Core Workshop, University of Michigan, 2013.
Elected Fellow, National Academy of Inventors, 2014 [*Technology and Innovation* **17**, 75-84 (2015)].
Profiled in *International Innovation* **190**, 2015, "Constraining cancer," pp. 92-95.
Elected Fellow, American Association for the Advancement of Science (AAAS), 2015 [*Science* **350**, 1047-1049 (2015)].
Profiled in *Current Protein & Peptide Science* **17**(1), 2016, "Meet Our Editorial Board Member: Gregg B. Fields," p. 1.
President's Leadership Award, FAU, 2017-2018.
Research Park at FAU Distinguished Researcher Award, 2018.
Inducted Member, FAU Chapter of the National Academy of Inventors, 2018.
Keynote Speaker, PepCon-2018, Miami, FL, 2018.
Profiled in *Florida Trend* **65**(10), January 2023, "Early Detection," pg. 14-15.

RESEARCH INTERESTS

Extracellular matrix biochemistry; synthetic protein design and construction; metalloproteinases; chemical biology; tumor cell biology/signal transduction; proteases in neurodegenerative diseases; solid-phase peptide synthesis methodology.

SELECTED PROFESSIONAL ACTIVITIES

Editorial Boards

Editor-In-Chief, *Journal of Biomolecular Techniques*, 2001-2011; *International Journal of Peptide Research and Therapeutics*, 2004-2019; *Journal of Cellular Physiology*, 2020-present.
Editor, *Letters in Peptide Science*, 1993-2004.
Editorial Board, *Biopolymers*, 2002-2006; *Biopolymers (Peptide Science)*, 2004-2021; *Current Protein and Peptide Science*, 2000-present; *The Journal of Biological Chemistry*, 2001-2006, 2008-2013; *The Journal of Peptide Research*, 1997-2004.
Editorial Advisory Board, *Chemical Biology & Drug Design*, 2006-present; *Protein and Peptide Letters*, 1994-2004.
Section Editorial Board, *Expert Opinion on Therapeutic Patents*, 1998-2004.

Grant Reviews

Grant Proposal Reviewer: International Science Foundation, 1993; National Science Foundation, 1994, 1998-1999, 2004-2005, 2008; North Carolina Biotechnology Center, 1994; Medical Research Council of Canada, 1996; American Chemical Society Petroleum Research Fund, 1997; Research Corporation Cottrell College Science Awards, 1998, 2005-2007; Center of Biomedical Research Excellence (CoBRE), University of Kansas, 2001-2002, 2005; The Wellcome Trust, 2000, 2002, 2004, 2016; Professional Staff Congress-City University of New York (PSC-CUNY) Research Award Program, 2007; Cancer Research UK, 2007; Center of Biomedical Research Excellence (CoBRE) Center for Protease Research, North Dakota State University, 2007; Austrian Science Fund, 2007-2008, 2019; Council for Chemical Sciences (CW) of the Netherlands Organisation for Scientific Research (NWO), 2007-2008, 2015; Israel Science Foundation, 2009, 2014; Swiss National Science Foundation, 2010; Australia National Health & Medical Research Council, 2013; Center of Biomedical Research Excellence (CoBRE), University of Montana, 2014; Biotechnology and Biological Sciences Research Council (BBSRC) of the United Kingdom, 2014; Medical Research Council (MRC) of the United Kingdom, 2014; Arthritis Research UK, 2015; Deutsche Forschungsgemeinschaft (German Research Foundation), 2016; Yorkshire Cancer Research, 2017; United States - Israel Binational Science Foundation (BSF), 2018; Fonds zur Förderung der wissenschaftlichen Forschung (FWF) Austrian Science Fund, Hertha Firnberg-Programme, 2018; Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO), 2018.
Panel Member, Department of Defense CET-4 Breast Cancer Research Program, 1996.

Member, National Institutes of Health (NIH) Study Sections: Hematology-1 ZRG4-HEM-01 Small Business Innovation Research (SBIR) and Technology Transfer (STTR) Grants, 1998; Special Emphasis Panel ZRG1-CVB-02 SBIR and STTR Grants, 1999; Special Emphasis Panel ZRG1-MCHA-1, 1999; Special Emphasis Panel ZRG1-MEDB-1, 2000; Bioengineering Research Partnership Special Emphasis, 2000-2001; Tissue Engineering Special Emphasis, 2000-2002; Biochemistry, 2002; Bioorganic and Natural Products, 2002; Bioengineering Research Partnership, 2004; Neurotechnology/Engineering Special Emphasis, 2007; National Cancer Institute Discovery and Development Special Emphasis, 2007; Musculoskeletal, Oral & Skin Sciences (MOSS), 2008; Drug Discovery & Molecular Pharmacology (DMP), 2009; ARRA/Challenge Grant Program ZRG1 BST-M (58), 2009; Special Emphasis Panel ZRG1 F14-C Biotechnology Fellowships, 2009; Special Emphasis Panel ZRG1 OTC-F (55) R, 2010; National Institute on Drug Abuse (NIDA) Synthetic Peptides and Other Drugs of Abuse – Purity Determination, Stability Testing & Quantitative Analysis Panel ZDA1 JXR-D(44), 2013; National Institute of Child Health and Human Development Special Emphasis Panel ZHD1 DSR-Y (50) 1, 2016; National Institute of Child Health and Human Development Special Emphasis Panel on Structural Birth Defects ZHD1 DRG-D (50), 2017; Oncological Sciences Fellowship Special Emphasis Panel 10 ZRG1 F09B-M (20) L, 2017; National Institute of General Medical Sciences (NIGMS) K99/R00 Pathway to Independence Panel ZGM1 TWD-8 (KR), 2018; National Institute of Neurological Disorders and Stroke (NINDS) Special Emphasis Panel ZNS1 SRB-H (05), 2019.

Member, National Center for Research Resources, Research Centers in Minority Institutions, NIH, Clark Atlanta University Site Visit, 1999.

Chair, Center for Scientific Review Special Emphasis Panel ZRG1-SSSM-2, NIH, 2001.

Chair, Reparative Medicine Study Section SSSM-1, NIH, 2003-2004.

Member, Subcommittee D: Clinical Studies, National Cancer Institute, 2004.

Invited Member, Biomaterials and Biointerfaces Study Section, NIH, 2005-2009 (invitation declined).

Site Visit Committee, Research Council of Canada, Natural Sciences and Engineering, Strategic Network Grant Program (NETGP), 2007.

Member, American Cancer Society Peer Review Committee on Institutional Research Grants, 2012-2017.

Member, Register of Expert Peer Reviewers for Italian Scientific Evaluation (REPRISE), The National Committee of Research Guarantors (CNGR) of the Italian Ministry of Education, Universities and Research (MIUR), 2018-present.

Symposia Organization and Related

Peptide Synthesis Workshop Leader, Eighth Symposium of the Protein Society, 1994.

Peptide Synthesis Workshop Leader, Ninth Symposium of the Protein Society, 1995.

Session Chair, "Peptide Structure And Design," Division of Medicinal Chemistry, 31st Annual American Chemical Society Western Regional Meeting & 4th Annual San Diego Biotech Exposition, 1995.

Session Chair, 24th Symposium of the European Peptide Society, 1996.

Member, Program Committee, 15th American Peptide Symposium, 1997.

Session Chairman, 15th American Peptide Symposium, 1997.

Co-Chair, Molecular Biophysics Symposium on Biomolecular Design, 1997.

Session Chair, Gordon Research Conference on Chemistry and Biology of Peptides, 1998.

Session Chair, Woessnerite Symposium on Proteases and Extracellular Matrix, 1998.

Session Chair, "Recent Advances in Synthetic Protein Construction and Utility," ABRF '99: Bioinformatics and Biomolecular Technologies - Linking Genomes, Proteomes and Biochemistry, 1999.

Co-Chair, 16th American Peptide Symposium: Peptides for the New Millennium, 1999.

Session Chair, "Non-Globular Proteins: Folding and Function," 16th American Peptide Symposium, 1999.

Session Co-Chair, Symposium on Synthetic Macromolecules with Higher Structural Order, 219th American Chemical Society National Meeting, 2000.

Session Chair, "Collagenase Molecular Tectonics," 2003 Matrix Metalloproteinase Gordon Research Conference.

Session Chair, "New Technologies for Proteomic Profiling of Proteases," ABRF 2006.

Member, Program Committee, Modern Solid Phase Peptide Synthesis & Its Applications: An Official Satellite Symposium of the 7th International Australian Peptide Symposium, 2007.

Member, Scientific Advisory Committee, PepCon-2008.

Member, Program Committee, Modern Solid Phase Peptide Synthesis & Its Applications 2009: An Official Satellite Symposium of the 8th International Australian Peptide Symposium, 2009.

Member, Organizing Committee, 5th International Peptide Symposium/47th Japanese Peptide Symposium, 2010.

Member, 2010 Akabori Memorial Award Committee.

Session Co-Chair and Panelist, "Platform Technologies and Novel Therapeutics," Science, Partnering and Investment Forum 2012.

Session Chair, "Visualization and Control of Metalloproteases," 2015 Matrix Metalloproteinase Gordon Research Conference.

Member, 2019 Makineni Lectureship Selection Committee.

Discussion Leader, "Late-Breaking Topics," 2019 Metalloproteases Gordon Research Conference.

Member, 2021 Vincent du Vigneaud Award Selection Committee.

Member, Organizing Committee, XVth Association for Ocular Pharmacology and Therapeutics (AOPT) Meeting, 2021.

Consulting and Related

Consultant, Peptide Synthesis Research and Development, Applied Biosystems, Inc., 1991.

Consultant on applications of synthetic peptides, Bio-Metric Systems, Inc., 1991-1996.

Consultant on development of peptide synthesis reagents, Millipore Corporation, 1992-1994.

Member, Scientific Advisory Board, BioStratum, Inc., 1994-1997.

Consultant on applications of synthetic peptides for type IV collagen related disease states, BioStratum, Inc., 1994-1997.

Consultant on peptide chemistry, Mallinckrodt Chemical, Inc., 1994-2004.

Member, Scientific and Business Advisory Board, Xenna Corporation, 1998-2012.

Consultant on conopeptide chemistry, Cognetix, Inc., 2000-2001.

Consultant on peptide chemistry, Peptisyntha/Solvay, 2002-2010.

External Reviewer, Department of Chemistry and Biochemistry, The University of North Carolina - Greensboro, 2007-2008.

Co-Founder, Nano Wound Devices, Inc., 2011-2015.

Member, Executive Steering Committee and Industry Advisory Council, Banner Center for Life Sciences, 2012.

Member, Advisory Board, Ali's Alliance: The Alison Arnesen Cowan Cancer Resource & Support List, 2012-2016.

Member, Palm Beach State College Biotechnology Business Partnership Council, 2013-2014.

Member, Scientific Advisory Board, Akron Biotech, 2012-present.

Consultant on peptide chemistry and applications, Plastic Surgery Innovations, 2013-present.

Trustee, Alzheimer's and Aging Research Center, 2013-2016.

Trustee, Diabetes National Research Group, 2013-2016.

Trustee, Osteoporosis and Breast Cancer Research Group, 2013-2016.

Consultant on application of peptides in nutraceuticals, Vital Pharmaceuticals, 2015-2019.

Co-Founder and Vice President, MMP Biopharma, Inc., 2017-present.

External Evaluator, Foundation for Polish Science (FNP) Prize, 2019.

Consultant on the role of matrix metalloproteinases in cancer, Ellipses Pharma, 2020-present.

MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES

Member, American Chemical Society, 1986-2020; European Peptide Society, 1996-2001; American Society for Cell Biology, 1998-2005; Protein Society, 2001-2005; American Society for Biochemistry and Molecular Biology, 2001-2013; Society for Melanoma Research, 2004-2008; American Association for the Advancement of Science, 2011-present.

American Peptide Society Charter Member, 1990-2015.

Association of Biomolecular Resource Facilities (ABRF) Research Committee on Peptide Synthesis and Mass Spectrometry Member, 1991-1996.

Facility Director, ABRF, 1992-2010.

Co-Chair, ABRF Research Committee on Peptide Synthesis and Mass Spectrometry, 1992.

Chair, ABRF Research Committee on Peptide Synthesis and Mass Spectrometry, 1992-1994.

Chairman, American Peptide Society Publications Committee, 1993-1995.

Member, American Peptide Society Publications Committee, 1995-1997.

New York Academy of Sciences Active Member, 1994-1997.

American Peptide Society Council, 1997-2003.

President-Elect, American Peptide Society, 2007-2009.

President, American Peptide Society, 2009-2011.

Past President, American Peptide Society, 2011-2013.

Member, Federation of American Societies for Experimental Biology (FASEB) Board of Directors (American Peptide Society Representative), 2012-2013.

Member, American Chemical Society Insight Lab, 2015-2019.

EXTERNALLY FUNDED RESEARCH SUPPORT (CURRENT)

1. Autoantibody Modulation of Cartilage Turnover in Rheumatoid Arthritis, NIH R15-AI154248-01A (Gregg B. Fields, P.I.), 4/9/21-3/31/24, \$429,189 total costs.
2. Local and Systemic Control of Multiple Myeloma Skeletal Colonization by MMP-13, NIH R01-CA239214 (Conor Lynch, P.I.; Gregg B. Fields, Co-P.I.), 4/1/19-3/31/24, \$2,917,995 total costs (\$749,995 Fields laboratory).
3. STEM Articulation and Transfer Collaborative Project, National Science Foundation (NSF) DUE-1928343 [Improving Undergraduate STEM Education (IUSE): Hispanic-Serving Institutions (HIS) program 19-540] (Becky A. Mercer, P.I.; Gregg B. Fields, Co-P.I.; Cynthia Judd, Co-P.I.; Evonne Rezler, Co-P.I.; Marina Rines, Co-P.I.), 10/1/19-9/30/24, \$1,553,556 total costs.
4. Memorial Cancer Institute Florida Atlantic University Cancer Center of Excellence, Florida Department of Health (Gregg B. Fields, P.I.), 2/1/21-1/31/24.
5. Breast Cancer Prevention: A Grassroots Initiative to Increase Access to Care, Equitable Imaging, and Diagnostic Testing Services and Subsequent Research on Biological Disparities in Clinical Outcomes in Black and Hispanic Minorities, The Community Foundation of Broward Cancel Cancer (Aurelio B. Castellon, P.I.; Gregg B. Fields, Co-P.I.), 7/1/21-5/30/23, \$200,000 total costs.
6. Research University Alzheimer's Research Using Exablate Neuro-focused Ultrasound, State of Florida Board of Governors (Gregg B. Fields, P.D./Co-P.I.; Lloyd Zucker, P.I.), 12/1/21-11/30/27, \$1,500,000 total costs.
7. IL-1R1, MMP-9, and EAE, NIH R21-AI169218 (Ning Quan, P.I.; Gregg B. Fields, Co-P.I.), 4/16/22-4/15/24, \$275,000 direct costs.
8. Memorial Cancer Institute (MCI)/Florida Atlantic University (FAU) Cancer Biospecimen Resource (CBR), Mary N. Porter Cancer Research Fund of The Community Foundation of Broward (Gregg B. Fields, Co-P.I.; Luis Raez, Co-P.I.), 8/1/22-7/31/25, \$300,000 total costs.
9. Insights Into Structure-Function Relationships of Matrix Metalloproteinase 1 from Computational and Experimental Studies, NIH R15 (Tatyana Karabencheva-Christova, P.I.; Gregg B. Fields, Co-P.I.), 7/1/23-6/30/26, \$427,002 total costs (\$114,375 Fields laboratory). Recommended for funding.

INTERNALLY FUNDED RESEARCH SUPPORT (CURRENT)

1. Orbitrap Mass Spectrometer, FAU Technology Fee Grant (Gregg B. Fields, P.I.), 3/1/23-2/28/24, \$100,000 total costs.

EXTERNALLY FUNDED RESEARCH SUPPORT (PRIOR)

1. Collagen Model Peptides for Study of Cancer Cell Adhesion and Spreading, American Cancer Society Institutional Research Grant 13-32-6 (Gregg B. Fields, P.I.), 1/1/92-12/31/92, \$10,000 total costs.
2. The Development of Conformationally Constrained Peptides As Drugs and Therapeutic Agents (Gregg B. Fields, P.I.), Millipore Corporation, 1/1/92-12/31/94, \$30,000 total costs.
3. A Study of the Osteoconductive/Osteoinductive Properties of Synthetic Peptides Derived from Extracellular Matrix Proteins, SenMed Medical Ventures (Dr. Daniel L. Mooradian, P.I.), 4/1/92-3/31/94, \$400,340 total costs.
4. Collagen Models for Study of Diabetes Mellitus, NIH First Independent Research Support and Transition (FIRST) Award R29-KD44494 (Gregg B. Fields, P.I.), 9/30/92-9/29/97, \$490,000 total costs.
5. Type IV Collagen Peptides: Receptors in Corneal Function, NIH R01-EY09065 (Dr. Leo T. Furcht, P.I.), 5/1/93-4/30/94, \$182,865 costs (Fields' laboratory).
6. Tubulointerstitial Nephritis/Basement Membrane Antigens, NIH R01-DK36007 (Dr. Aristidis S. Charonis, P.I.), 7/1/93-6/30/95, \$278,620 costs (Fields' laboratory).
7. Helical Collagen Peptides, Cell Surface Proteoglycans and Tumor Metastasis, American Cancer Society CB-101 (Drs. James B. McCarthy and Gregg B. Fields, Co-P.I.), 1/1/94-12/31/96, \$318,634 total costs.
8. Molecular Mechanisms of Cell Interactions With Collagens, NIH Research Career Development Award K04-AR01929 (Gregg B. Fields, P.I.), 3/1/94-2/28/99, \$297,153 total costs.
9. Peptide Inhibition of Leukocyte Responsiveness, Senmed Medical Ventures (Dr. James B. McCarthy, P.I.), 4/1/95-3/31/97, \$391,254 total costs.
10. Synthetic Peptide Approaches For the Design of Substrates/Inhibitors of Matrix Metalloproteinases, Pfizer Central Research (Gregg B. Fields, P.I.), 8/1/95-6/30/99, \$85,162 total costs.
11. Type IV Collagen in Melanoma Cell Invasion & Metastasis, NIH R01-CA63671 (Dr. James B. McCarthy, P.I.; Dr. Gregg B. Fields, Co-P.I.), 8/1/95-7/31/98, \$564,982 total costs.
12. The Development of Type IV Collagen-Derived Sequences As Therapeutic Agents, BioStratum Incorporated (Gregg B. Fields, P.I.), 10/1/95-3/31/98, \$310,000 total costs.
13. Establishment of a High Field Nuclear Magnetic Resonance Facility, National Science Foundation ARI Instrumentation Program/OSTI (Dr. Ian M. Armitage, P.I.; Dr. Kevin H. Mayo, Co-P.I.), 9/1/96-8/31/99, \$860,073 total costs.

14. Interactive Materials and Devices for Medical and Biological Engineering, The Whitaker Foundation Biomedical Engineering Special Opportunity Award (Dr. Matthew Tirrell, Program Director), 10/1/96-9/30/98, \$1,000,000 total costs.
15. Biomedical Engineering Center and Microtechnology Laboratory Biomedical Engineering Initiative, State of Minnesota 1998-1999 Legislative Request (Drs. Gregg B. Fields, James B. McCarthy, Ronald C. McGlennen, Daniel L. Mooradian, and Dennis Polla, Co-P.I.), 1/1/98-12/31/98, \$300,000 total costs.
16. National Cancer Institute Comprehensive Cancer Center Peptide Synthesis & Design Core Facility, NIH P30-CA077598 (Dr. Gregg B. Fields, P.I.), 6/1/98-5/31/03, \$294,000 total costs.
17. Collagen Structural Modulation of Tumor Behaviors, NIH R01-CA77402 (Gregg B. Fields, P.I.), 8/14/98-4/30/04, \$1,029,103 total costs.
18. Tissue Engineering Using Peptide-Amphiphile Biomimetics, NIH R01-HL62427/EB000289 (Gregg B. Fields, P.I.), 7/15/98-6/30/04, \$1,203,320 total costs.
19. Purchase of a 500 MHz Nuclear Magnetic Resonance Spectrometer, Kresge Foundation Science Initiative (Drs. Hank Steele, John Wiesenfeld, Gregg B. Fields, and Frank Marí, Co-P.I.), 9/17/98-9/16/00, \$333,333 total costs.
20. Identification of AcrySof™ Binding Domains Within Lens Capsule Components, Alcon Laboratories (Gregg B. Fields, P.I.), 7/1/99-9/30/00, \$24,168 total costs.
21. Identification of Novel Conopeptides, Cognetix Incorporated (Frank Marí, P.I.), 1/1/00-12/31/00, \$35,000 total costs.
22. Isolation and Characterization of Novel Pharmacological Agents from Atlantic and Panamic Cone Snails Species, Florida Sea Grant College Program (Frank Marí, P.I.; Gregg B. Fields, Co-P.I.), 2/1/02-1/31/04, \$226,000 total costs.
23. Mechanism & Inhibition of Collagenolytic Activity, NIH R01-CA98799 (Gregg B. Fields, P.I.), 3/5/03-2/29/08, \$1,746,579 total costs.
24. Identification of Novel Compounds and New Targets for Cancer Therapy, FAU Center of Excellence for Biomedical and Marine Biotechnology (Gregg B. Fields, P.I.), 9/1/03-8/31/05, \$95,238 total costs.
25. Characterization and Synthesis of Hydroxyconophans: A New Class of Neuropharmacological Agents from Cone Snails, Florida Sea Grant College Program (Frank Marí, P.I.; Gregg B. Fields, Co-P.I.), 2/1/04-1/31/06, \$226,000 total costs.
26. Novel Pharmacological Agents from *Conus regius*, NIH R15-GM066004 (Frank Marí, P.I.; Gregg B. Fields, Co-P.I.), 7/1/03-6/30/06, \$138,654 total costs.
27. State of Florida Center of Excellence in Biomedical and Marine Biotechnology (Larry F. Lemanski, P.I.; Russell G. Kerr, Project Director; Gregg B. Fields and 17 others, Co-P.I.), 9/1/03-8/31/07, \$10,000,000 total costs.
28. Peptide-Amphiphile Biomimetics for Targeted Therapies, NIH R01-EB000289-07S1 (Gregg B. Fields, P.I.), 7/1/06-6/30/09, \$219,242 total costs. Terminated after one year due to departure of postdoctoral fellow.
29. ADAMTS/MMP Drug Development, NIH X01-MH078948 (Gregg B. Fields, P.I.), 8/1/06-7/31/07, \$0 total costs [PAR-05-147: Solicitation of Assays for High Throughput Screening in the Molecular Libraries Screening Centers Network].
30. MBRS Support of Continuous Research Excellence (SCORE) at Florida Atlantic University, National Institutes of Health 1S06GM073621 (Gregg B. Fields, Program Director), 6/1/05-5/31/09, \$3,689,612 total costs [resigned as Program Director upon move to UTHSCSA].
31. Florida Atlantic University Institutional Research Grant, American Cancer Society IRG-08-063-01 (Gregg B. Fields, Program Director), 1/1/08-12/31/10, \$270,000 total costs [resigned as Program Director upon move to UTHSCSA].
32. Neuropharmacology of Conophans and Hydroxyconophans, NIH R15-GM080737 (Frank Marí, P.I.; Gregg B. Fields, Co-P.I.), 4/12/07-3/31/10, \$196,750 total costs.
33. Peptide-Amphiphile Biomimetics for Targeted Therapies, NIH R01-EB000289 (Gregg B. Fields, P.I.), 8/25/05-6/30/10, \$1,013,958 total costs.
34. Nanomedicine for Inhibition of Proteolysis and Targeted Drug Delivery, Texas Higher Education STAR Award Program (Gregg B. Fields, P.I.), 8/1/08-7/31/11, \$1,440,000 total costs.
35. Nanomedicine for Inhibition of Proteolysis and Targeted Drug Delivery, Texas Higher Education STAR Plus Award Program (Gregg B. Fields, P.I.), 8/1/08-7/31/11, \$200,000 total costs.
36. Near Infra-Red Imaging of MMP-2/MMP-9 With a Highly Specific Optical Probe, NIH R21-CA131660 (W. Barry Edwards, P.I.; Gregg B. Fields, Collaborator), 7/1/08-4/30/11, \$418,000 total costs.
37. Development of Matrix Metalloproteinase Inhibitors for Treatment of Osteoarthritis, Arthritis & Chronic Pain Research Institute International Travel Grant (Gregg B. Fields, P.I.), 11/28/11-12/2/11, \$2,250 total costs.
38. Mechanism & Inhibition of Collagenolytic Activity, NIH R01-CA098799 (Gregg B. Fields, P.I.), 4/1/08-3/31/13, \$1,395,029 total costs.

39. Selective Matrix Metalloproteinase Inhibition for Treatment of Multiple Sclerosis, Multiple Sclerosis National Research Institute (Gregg B. Fields, P.I.), 7/1/11-6/30/13, \$120,000 total costs.
40. Towards Immune Specific Diagnosis and Prevention of Rheumatoid Arthritis, Karolinska Institutet K2009-75SX-21029-01-3 (Rikard Holmdahl, P.I.; Gregg B. Fields, Collaborator), 12/1/12-11/30/13, \$60,000 total costs (Fields laboratory).
41. Molecular Target for Neuroblastoma Therapy, Department of Defense (DOD) Congressionally Directed Medical Research Programs (CDMRP) Peer Reviewed Cancer Research Program (PRCRP) Idea Award PR100563 (Linda H. Malkas, P.I.; Gregg B. Fields, Co-P.I.), 11/15/11-10/14/14, \$750,000 total costs (\$225,000 Fields laboratory).
42. Mechanism & Inhibition of Collagenolytic Activity Administrative Supplement, NIH R01-CA098799 (Gregg B. Fields, P.I.), 4/1/14-3/31/15, \$29,000 total costs.
43. ADSC Isolation by MMPs, NIH R43-GM106469 (Claudia Zylberberg, P.I.; Gregg B. Fields, Co-P.I.), 9/15/14-3/14/15, \$140,446 total costs (\$49,475 Fields laboratory).
44. UTHSCSA Cardiovascular Proteomics Center, NIH/NHLBI Contract 268201000036C-0-0-1 (Merry L. Lindsey, P.I.; Gregg B. Fields, Susan T. Weintraub, Seema Ahuja, Richard A. Lange, Robert J. Chilton, John M. Erikson, Co-P.I.), 8/1/10-7/31/15, \$11,854,012 total costs (\$1,033,688 Fields laboratory).
45. The Role of Macrophage-Derived MMP-9 in LV Remodeling, NIH R01-HL075360 (Merry L. Lindsey, P.I.; Gregg B. Fields, Co-P.I.), 8/1/10-7/31/15, \$1,863,375 total costs (\$104,006 Fields laboratory).
46. The role of galectin-3 processing by MMPs in fibrosis and cardiac remodeling, FAU Mentee-Mentor Award (Mare Cudic, Mentee; Gregg B. Fields, Mentor), 4/13/15-4/12/16, \$6,000 total costs (\$2,000 Fields laboratory).
47. Development of Pancreatic Cancer Therapeutic Agents, Lustgarten Foundation FAU Pancreatic Cancer Program (Gregg B. Fields, P.I.), 1/1/16-12/31/16, \$58,000 total costs.
48. New Probes for Matrix Metalloproteinase 13, NIH R01-AR063795 (Gregg B. Fields, P.I.), 9/17/13-7/31/17, \$1,539,810 total costs.
49. Novel synthetic tools for mucin glycobiology, NIH R21-CA178754 (Mare Cudic, P.I.; Gregg B. Fields, collaborator), 9/15/14-8/31/17, \$391,318 total costs (\$23,555 Fields laboratory).
50. HTS for selective inhibitors of meprin alpha and beta, NIH R01-AR066676 (Dmitriy Minond, P.I.; Gregg B. Fields, collaborator), 4/24/15-3/31/18, \$1,144,936 total costs (\$31,914 Fields laboratory).
51. CC*DNI Networking Infrastructure: Enabling Multi-Campus, Data-Driven Science and Engineering through a 10Gb FAU DMZ, NSF OAC/CSE-1541330 (Jason O. Hallstrom, P.I.; Fraser Dagleish, Gregg B. Fields, Borko Furht, and Michele Pergadia, Co-P.I.), 3/1/16-2/28/18, \$498,006 total costs.
52. Mechanism & Inhibition of Collagenolytic Activity, NIH R01-CA098799 (Gregg B. Fields, P.I.), 4/1/13-3/31/19, \$1,751,527 total costs.
53. ECM Remodeling Mechanisms in Infectious Diseases, US-Israel Binational Science Foundation (BSF) 2015180 (Irit Sagi, P.I.; Gregg B. Fields, co-P.I.), 9/16-9/20, \$230,000 total costs (\$92,000 Fields laboratory).
54. Inhibition of Tumor Cell Surface Proteolysis, James and Esther King Biomedical Research Program 8JK01 (Gregg B. Fields, P.I.), 4/1/18-3/31/21, \$708,046 total costs.
55. Insights Into Structure-Function Relationships of Matrix Metalloproteinase 1 from Computational and Experimental Studies, NIH R15-GM132873 (Tatyana Karabencheva-Christova, P.I.; Gregg B. Fields, Collaborator), 4/1/20-3/31/23, \$439,609 total costs (\$112,125 Fields laboratory).

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JOURNAL PUBLICATIONS

1. Gregg B. Fields, Harold E. Van Wart, and Henning Birkedal-Hansen. Sequence Specificity of Human Skin Fibroblast Collagenase: Evidence For the Role of Collagen Structure in Determining the Collagenase Cleavage Site. *J. Biol. Chem.* **262**, 6221-6226 (1987).
2. Gregg B. Fields, Cynthia G. Fields, Jonathan Petefish, Harold E. Van Wart, and T.A. Cross. Solid-phase peptide synthesis and solid state NMR spectroscopy of [¹⁵N-Ala³]-Val¹-gramicidin A. *Proc. Natl. Acad. Sci. USA* **85**, 1384-1388 (1988).
3. Gregg B. Fields, Cynthia G. Fields, Hank Henricks, and Tim A. Cross. Reversed Phase Purification of Synthetic Gramicidins. *Chromatogram* **9**(2), 6-8 (1988).

4. Cynthia G. Fields, Gregg B. Fields, Richard L. Noble, and T.A. Cross. Solid phase peptide synthesis of ¹⁵N-gramicidins A, B, and C and high performance liquid chromatographic purification. *Int. J. Peptide Protein Res.* **33**, 298-303 (1989).
5. Gregg B. Fields and Richard L. Noble. Solid phase peptide synthesis utilizing 9-fluorenylmethoxycarbonyl amino acids. *Int. J. Peptide Protein Res.* **35**, 161-214 (1990).
6. Gregg B. Fields, Sarah J. Netzel-Arnett, Lester J. Windsor, Jeffrey A. Engler, Henning Birkedal-Hansen, and Harold E. Van Wart. The Proteolytic Activities of Human Fibroblast Collagenase: Hydrolysis of a Broad Range of Substrates at a Single Active Site. *Biochemistry* **29**, 6670-6677 (1990).
7. David S. King, Cynthia G. Fields, and Gregg B. Fields. A cleavage method which minimizes side reactions following Fmoc solid phase peptide synthesis. *Int. J. Peptide Protein Res.* **36**, 255-266 (1990).
8. Gregg B. Fields and Cynthia G. Fields. Solvation Effects in Solid-Phase Peptide Synthesis. *J. Am. Chem. Soc.* **113**, 4202-4207 (1991). Supplementary material: 7 pages.
9. Gregg B. Fields. A Model For Interstitial Collagen Catabolism by Mammalian Collagenases. *J. Theor. Biol.* **153**, 585-602 (1991).
10. Sarah Netzel-Arnett, Gregg B. Fields, Henning Birkedal-Hansen, and Harold E. Van Wart. Sequence Specificities of Human Fibroblast and Neutrophil Collagenases. *J. Biol. Chem.* **266**, 6747-6755, 21326 (1991).
11. Gregg B. Fields, Darwin O.V. Alonso, Dirk Stigter, and Ken A. Dill. Theory for the Aggregation of Proteins and Copolymers. *J. Phys. Chem.* **96**, 3974-3981 (1992).
12. Cynthia G. Fields, Albert Loffet, Steven A. Kates, and Gregg B. Fields. The Development of High-Performance Liquid Chromatographic Analysis of Allyl and Allyloxycarbonyl Side-Chain-Protected Phenylthiohydantoin-Amino Acids. *Anal. Biochem.* **203**, 245-251 (1992).
13. Gregg B. Fields and Harold E. Van Wart. Unique Features of the Tissue Collagenase Cleavage Site in Interstitial Collagens. *Matrix: Coll. Rel. Res., Suppl.* **1**, 68-70 (1992).
14. Umesh B. Goli, Gregg B. Fields, and Harold E. Van Wart. Synthetic Triple Helical Models for the Collagen Cleavage Site in Interstitial Collagens. *Matrix: Coll. Rel. Res., Suppl.* **1**, 71-72 (1992).
15. Sarah J. Netzel-Arnett, Gregg B. Fields, Hideaki Nagase, Ko Suzuki, William G.I. Moore, Henning Birkedal-Hansen, and Harold E. Van Wart. Comparative Sequence Specificities of Human Fibroblast and Neutrophil Matrix Metalloproteinases. *Matrix: Coll. Rel. Res., Suppl.* **1**, 74-75 (1992).
16. Cynthia G. Fields, Vickie L. VanDrisse, and Gregg B. Fields. Edman Degradation Sequence Analysis of Resin-Bound Peptides Synthesized by 9-Fluorenylmethoxycarbonyl Chemistry. *Peptide Res.* **6**, 39-47 (1993).
17. Cynthia G. Fields, Daniel J. Mickelson, Sandra L. Drake, James B. McCarthy, and Gregg B. Fields. Melanoma Cell Adhesion and Spreading Activities of a Synthetic 124-Residue Triple-helical "Mini-collagen." *J. Biol. Chem.* **268**, 14153-14160 (1993).
18. Gregg B. Fields. Synthetic Peptides and Tumor Cell Metastasis. *Peptide Res.* **6**, 115-120 (1993).
19. W. Dale Branton, Cynthia G. Fields, Vickie L. VanDrisse, and Gregg B. Fields. Solid-Phase Synthesis of O-Palmitoylated Peptides. *Tetrahedron Lett.* **34**, 4885-4888 (1993).
20. W. Dale Branton, Marla S. Rudnick, Yi Zhou, Eric D. Eccleston, Gregg B. Fields, and Larry D. Bowers. Fatty Acylated Toxin Structure. *Nature* **365**, 496-497 (1993).
21. Cynthia G. Fields, Christine M. Lovdahl, Andrew J. Miles, Vickie L. Matthias Hagen, and Gregg B. Fields. Solid-Phase Synthesis and Stability of Triple-Helical Peptides Incorporating Native Collagen Sequences. *Biopolymers* **33**, 1695-1707 (1993).
22. Cynthia G. Fields and Gregg B. Fields. Minimization of Tryptophan Alkylation Following 9-Fluorenylmethoxycarbonyl Solid-Phase Peptide Synthesis. *Tetrahedron Lett.* **34**, 6661-6664 (1993).
23. W.B. Edwards, C.J. Anderson, M.J. Welch, C.G. Fields, and G.B. Fields. The Synthesis of DTPA-D-Phe¹-Ostreotide by Solid-Phase Synthesis. *J. Labelled Compds. Radiopharm.* **35**, 359-361 (1994).
24. Liana Harvath, Nicole E. Brownson, Gregg B. Fields, and Amy P.N. Skubitz. Laminin Peptides Stimulate Human Neutrophil Motility. *J. Immunol.* **152**, 5447-5456 (1994).
25. Gundu H.R. Rao, Cynthia G. Fields, James G. White, and Gregg B. Fields. Promotion of Human Platelet Adhesion and Aggregation by a Synthetic, Triple-helical "Mini-collagen". *J. Biol. Chem.* **269**, 13899-13903 (1994).
26. Leo T. Furcht, Amy P.N. Skubitz, and Gregg B. Fields. Tumor Cell Invasion, Matrix Metalloproteinases, and the Dogma. *Lab. Invest.* **70**, 781-783 (1994).
27. Hideaki Nagase, Cynthia G. Fields, and Gregg B. Fields. Design and Characterization of a Fluorogenic Substrate Selectively Hydrolyzed by Stromelysin 1 (Matrix Metalloproteinase-3). *J. Biol. Chem.* **269**, 20952-20957 (1994).
28. W. Barry Edwards, Cynthia G. Fields, Carolyn J. Anderson, Tammy S. Pajean, Michael J. Welch, and Gregg B. Fields. Generally Applicable, Convenient Solid-Phase Synthesis and Receptor Affinities of Octreotide Analogs. *J. Med. Chem.* **37**, 3749-3757 (1994).

29. Andrew J. Miles, Amy P.N. Skubitz, Leo T. Furcht, and Gregg B. Fields. Promotion of Cell Adhesion by Single-stranded and Triple-helical Peptide Models of Basement Membrane Collagen $\alpha 1(IV)531-543$: Evidence for Conformationally Dependent and Conformationally Independent Type IV Collagen Cell Adhesion Sites. *J. Biol. Chem.* **269**, 30939-30945 (1994).
30. Janelle L. Lauer, Cynthia G. Fields, and Gregg B. Fields. Sequence Dependence of Aspartimide Formation During 9-Fluorenylmethoxycarbonyl Solid-Phase Peptide Synthesis. *Lett. Peptide Sci.* **1**, 197-205 (1995).
31. Leo T. Furcht, Amy P.N. Skubitz, and Gregg B. Fields. Metalloproteinases and Tumor Cell Invasion - Response. *Lab. Invest.* **72**, 125 (1995).
32. Gregg B. Fields. The Collagen Triple-Helix: Correlation of Conformation with Biological Activities. *Connect. Tissue Res.* **31**, 235-243 (1995).
33. Peter Berndt, Gregg B. Fields, and Matthew Tirrell. Synthetic Lipidation of Peptides and Amino Acids: Monolayer Structure and Properties. *J. Am. Chem. Soc.* **117**, 9515-9522 (1995).
34. Cynthia G. Fields, Beate Grab, Janelle L. Lauer, and Gregg B. Fields. Purification and Analysis of Synthetic, Triple-Helical "Minicollagens" by Reversed-Phase High-Performance Liquid Chromatography. *Anal. Biochem.* **231**, 57-64 (1995).
35. Andrew J. Miles, Jennifer R. Knutson, Amy P.N. Skubitz, Leo T. Furcht, James B. McCarthy, and Gregg B. Fields. A Peptide Model of Basement Membrane Collagen $\alpha 1(IV)531-543$ Binds the $\alpha 3\beta 1$ Integrin. *J. Biol. Chem.* **270**, 29047-29050 (1995).
36. Jennifer R. Knutson, Joji Iida, Gregg B. Fields, and James B. McCarthy. CD44/Chondroitin Sulfate Proteoglycan and $\alpha 2\beta 1$ Integrin Mediate Human Melanoma Cell Migration on Type IV Collagen and Invasion of Basement Membranes. *Mol. Biol. Cell* **7**, 383-396 (1996).
37. Cynthia G. Fields, Beate Grab, Janelle L. Lauer, Andrew J. Miles, Ying-Ching Yu, and Gregg B. Fields. Solid-phase synthesis of triple-helical collagen-model peptides. *Lett. Peptide Sci.* **3**, 3-16 (1996).
38. Beate Grab, Andrew J. Miles, Leo T. Furcht, and Gregg B. Fields. Promotion of Fibroblast Adhesion by Triple-Helical Peptide Models of Type I Collagen-Derived Sequences. *J. Biol. Chem.* **271**, 12234-12240 (1996).
39. Joseph B. Huebsch, Gregg B. Fields, Thomas G. Triebes, and Daniel L. Mooradian. Photoreactive analog of peptide FN-C/H-V from the carboxy-terminal heparin-binding domains of fibronectin supports endothelial cell adhesion and spreading on biomaterial surfaces. *J. Biomed. Mat. Res.* **31**, 555-567 (1996).
40. Gregg B. Fields and Darwin J. Prockop. Perspectives on the Synthesis & Application of Triple-Helical, Collagen-Model Peptides. *Biopolymers (Pept. Sci.)* **40**, 345-357 (1996).
41. Hideaki Nagase and Gregg B. Fields. Human Matrix Metalloproteinase Specificity Studies Using Collagen Sequence-Based Synthetic Peptides. *Biopolymers (Pept. Sci.)* **40**, 399-416 (1996).
42. Ying-Ching Yu, Peter Berndt, Matthew Tirrell, and Gregg B. Fields. Self-Assembling Amphiphiles for Construction of Protein Molecular Architecture. *J. Am. Chem. Soc.* **118**, 12515-12520 (1996).
43. Vladimir A. Daragan, Elena E. Ilyina, Cynthia G. Fields, Gregg B. Fields, and Kevin H. Mayo. Backbone and Side-Chain Dynamics of Residues in a Partially Folded β -Sheet Peptide from Platelet Factor 4. *Protein Sci.* **6**, 355-363 (1997).
44. Gregg B. Fields. Mass-Spectrometric Approaches for DNA-Based Genetic Screening. *Clin. Chem.* **43**, 1108-1109 (1997).
45. Cynthia A. Guy and Gregg B. Fields. Trifluoroacetic Acid Cleavage and Deprotection of Resin-Bound Peptides Following Synthesis by Fmoc Chemistry. *Meth. Enzymol.* **289**, 67-83 (1997).
46. Janelle L. Lauer and Gregg B. Fields. *In Vitro* Incorporation of Synthetic Peptides Into Cells. *Meth. Enzymol.* **289**, 564-571 (1997).
47. Ying-Ching Yu, Teika Pakalns, Yoav Dori, James B. McCarthy, Matthew Tirrell, and Gregg B. Fields. Construction of Biologically Active Protein Molecular Architecture Using Self-Assembling Peptide-Amphiphiles. *Meth. Enzymol.* **289**, 571-587 (1997).
48. Ruth Hogue Angeletti, Lynda F. Bonewald, and Gregg B. Fields. Six Year Study of Peptide Synthesis. *Meth. Enzymol.* **289**, 697-717 (1997).
49. Anissa S.H. Chan, James L. Mobley, Gregg B. Fields, and Yoji Shimizu. CD7-Mediated Regulation of Integrin Adhesiveness on Resting Human T Cells Involves Tyrosine Phosphorylation-Dependent Activation of Phosphatidylinositol 3-Kinase. *J. Immunol.* **159**, 934-942 (1997).
50. Janelle L. Lauer, Leo T. Furcht, and Gregg B. Fields. Inhibition of Melanoma Cell Binding to Type IV Collagen by Analogs of Cell Adhesion Regulator. *J. Med. Chem.* **40**, 3077-3084 (1997).
51. Curtis B. Herbert, Terri L. McLernon, Claire L. Hypolite, Derek N. Adams, Lana Pikus, C.-C. Huang, Gregg B. Fields, Paul C. Letourneau, Mark D. Distefano, and Wei-Shou Hu. Micropatterning gradients and controlling surface densities of photoactivatable biomolecules on self-assembled monolayers of oligo(ethylene glycol) alkanethiolates. *Chem. Biol.* **4**, 731-737 (1997).

52. W.B. Edwards, C.J. Anderson, C.G. Fields, G.B. Fields, and M.J. Welch. Evaluation of Cu-64-Labeled Segments of Type IV Collagen as Tumor Imaging Agents. *J. Labelled Compds. Radiopharm.* **150**, 389-390 (1997).
53. Changfen Li, James B. McCarthy, Leo T. Furcht, and Gregg B. Fields. An All-D Peptide Model of $\alpha 1(IV)531-543$ From Type IV Collagen Binds the $\alpha 3\beta 1$ Integrin and Mediates Melanoma Cell Adhesion, Spreading, and Motility. *Biochemistry* **36**, 15404-15410 (1997).
54. Kraig L. Haverstick, Teika Pakalns, Ying-Ching Yu, James B. McCarthy, Gregg B. Fields, and Matthew Tirrell. Targeted cell interactions with surfaces incorporating synthetic peptide amphiphiles. *Polym. Mater. Sci. Eng.* **77**, 584-585 (1997).
55. Janelle L. Lauer, Christi M. Gendron, and Gregg B. Fields. Effect of Ligand Conformation on Melanoma Cell $\alpha 3\beta 1$ Integrin-Mediated Signal Transduction Events: Implications For A Collagen Structural Modulation Mechanism Of Tumor Cell Invasion. *Biochemistry* **37**, 5279-5287 (1998).
56. Gregg B. Fields, Janelle L. Lauer, Yoav Dori, Pilar Forn, Ying-Ching Yu, and Matthew Tirrell. Proteinlike Molecular Architecture: Biomaterial Applications for Inducing Cellular Receptor Binding and Signal Transduction. *Biopolymers* **47**, 143-151 (1998).
57. Shawn M. Sweeney, Cynthia A. Guy, Gregg B. Fields, and James D. San Antonio. Defining the domains of type I collagen involved in heparin-binding and endothelial tube formation. *Proc. Natl. Acad. Sci. USA* **95**, 7275-7280 (1998).
58. Gregg B. Fields. Integrins: cell adhesion molecules in cancer. *Exp. Opin. Ther. Patents* **8**, 633-644 (1998).
59. S. Setty, Y. Kim, G.B. Fields, D.O. Clegg, E.A. Wayner, and E.C. Tsilibary. Interactions of Type IV Collagen and Its Domains With Human Mesangial Cells. *J. Biol. Chem.* **273**, 12244-12249 (1998).
60. Ying-Ching Yu, Matthew Tirrell, and Gregg B. Fields. Minimal Lipidation Stabilizes Protein-Like Molecular Architecture. *J. Am. Chem. Soc.* **120**, 9979-9987 (1998).
61. Ying-Ching Yu, Vikram Roontga, Vladimir A. Daragan, Kevin H. Mayo, Matthew Tirrell, and Gregg B. Fields. Structure and Dynamics of Peptide-Amphiphiles Incorporating Triple-Helical Protein-Like Molecular Architecture. *Biochemistry* **38**, 1659-1668 (1999).
62. Gregg B. Fields. Induction of Protein-like Molecular Architecture by Self-assembly Processes. *Bioorg. Med. Chem.* **7**, 75-81 (1999).
63. Gregg B. Fields. Polymer-platinum compounds. *Exp. Opin. Ther. Patents* **9**, 661-662 (1999).
64. Teika Pakalns, Kraig L. Haverstick, Gregg B. Fields, James B. McCarthy, Daniel L. Mooradian, and Matthew Tirrell. Cellular recognition of synthetic peptide amphiphiles in self-assembled monolayer films. *Biomaterials* **20**, 2265-2279 (1999).
65. Navdeep B. Malkar, Janelle L. Lauer-Fields, and Gregg B. Fields. Convenient Synthesis of Glycosylated Hydroxylysine Derivatives for Use in Solid-Phase Synthesis. *Tetrahedron Lett.* **41**, 1137-1140 (2000).
66. Yoav Dori, Havazelet Bianco-Peled, Sushil K. Satija, Gregg B. Fields, James B. McCarthy, and Matthew Tirrell. Ligand accessibility as a means to control cell response to bioactive bilayer membranes. *J. Biomed. Mater. Res.* **50**, 75-81 (2000).
67. Pilar Forn and Gregg B. Fields. Peptide-Amphiphile Induction of α -Helical Structures. *Polymer Preprints* **41**(2), 1152-1153 (2000).
68. Jeffrey A. Borgia and Gregg B. Fields. Chemical synthesis of proteins. *Trends Biotech.* **18**, 243-251 (2000).
69. Janelle L. Lauer-Fields, Kathleen A. Tuzinski, Ken-ichi Shimokawa, Hideaki Nagase, and Gregg B. Fields. Hydrolysis of Triple-Helical Collagen Peptide Models by Matrix Metalloproteinases. *J. Biol. Chem.* **275**, 13282-13290 (2000).
70. Janelle L. Lauer-Fields, Hideaki Nagase, and Gregg B. Fields. Use of Edman degradation sequence analysis and matrix-assisted laser desorption/ionization mass spectrometry in designing substrates for matrix metalloproteinases. *J. Chromatogr. A* **890**, 117-125 (2000).
71. Pilar Forn, Janelle L. Lauer-Fields, Su Gao, and Gregg B. Fields. Induction of Protein-Like Molecular Architecture by Monoalkyl Hydrocarbon Chains. *Biopolymers* **54**, 531-546 (2000).
72. Linda Chung, Ken-ichi Shimokawa, Deendayal Dinakarpanian, Frank Grams, Gregg B. Fields, and Hideaki Nagase. Mapping the RWTNNFREY(183-191) Region As a Critical Segment of Matrix Metalloproteinase 1 For the Expression of Collagenolytic Activity. *J. Biol. Chem.* **275**, 29610-29617 (2000).
73. Janelle L. Lauer-Fields and Gregg B. Fields. Matrix metalloproteinase inhibitors and cancer. *Exp. Opin. Ther. Patents* **10**, 1873-1884 (2000).
74. Janelle L. Lauer-Fields, Todd Broder, Thilaka Sritharan, Linda Chung, Hideaki Nagase, and Gregg B. Fields. Kinetic Analysis of Matrix Metalloproteinase Activity Using Fluorogenic Triple-Helical Substrates. *Biochemistry* **40**, 5795-5803 (2001).

75. Navdeep B. Malkar and Gregg B. Fields. Synthesis of N^{α} -(fluoren-9-ylmethoxycarbonyl)- N^{ϵ} -[(7-methoxycoumarin-4-yl)acetyl]-L-lysine for use in solid-phase synthesis of fluorogenic substrates. *Lett. Peptide Sci.* **7**, 263-267 (2001).
76. Gregg B. Fields. Letter From the Editor. *J. Biomolecular Techniques* **12**, 39 (2001).
77. Jeffrey A. Borgia, Navdeep B. Malkar, Husam U. Abbassi, and Gregg B. Fields. Difficulties Encountered During Glycopeptide Syntheses. *J. Biomol. Tech.* **12**, 44-68 (2001).
78. W. Barry Edwards, Carolyn J. Anderson, Gregg B. Fields, and Michael J. Welch. Evaluation of Radiolabeled Type IV Collagen Fragments as Tumor Imaging Agents. *Bioconjug. Chem.* **12**, 1057-1065 (2001).
79. Angela K. Dillow, Sarah E. Ochsenhirt, James B. McCarthy, Gregg B. Fields, and Matthew Tirrell. Adhesion of $\alpha_5\beta_1$ receptors to biomimetic substrates constructed from peptide amphiphiles. *Biomaterials* **22**, 1493-1505 (2001).
80. Navdeep B. Malkar, Janelle L. Lauer-Fields, Jeffrey A. Borgia, and Gregg B. Fields. Modulation of Triple-Helical Stability and Subsequent Melanoma Cellular Responses by Single-Site Substitution of Fluoroproline Derivatives. *Biochemistry* **41**, 6054-6064 (2002).
81. Janelle L. Lauer-Fields and Gregg B. Fields. Triple-Helical Peptide Analysis of Collagenolytic Protease Activity. *Biol. Chem.* **383**, 1095-1105 (2002).
82. Janelle L. Lauer-Fields, Darius Juska, and Gregg B. Fields. Matrix Metalloproteinases and Collagen Catabolism. *Biopolymers (Pept. Sci.)* **66**, 19-32 (2002).
83. Gregg B. Fields. Protease-activated drug delivery. *Exp. Opin. Ther. Patents* **13**, 125-127 (2003).
84. Janelle L. Lauer-Fields, Navdeep B. Malkar, Gérard Richet, Karlheinz Drauz, and Gregg B. Fields. Melanoma Cell CD44 Interaction with the $\alpha 1(IV)1263$ -1277 Region from Basement Membrane Collagen is Modulated by Ligand Glycosylation. *J. Biol. Chem.* **278**, 14321-14330 (2003).
85. Janelle L. Lauer-Fields, Thilaka Sriharan, M. Sharon Stack, Hideaki Nagase, and Gregg B. Fields. Selective Hydrolysis of Triple-Helical Substrates by Matrix Metalloproteinase-2 and -9. *J. Biol. Chem.* **278**, 18140-18145 (2003).
86. Navdeep B. Malkar, Janelle L. Lauer-Fields, Darius Juska, and Gregg B. Fields. Characterization of Peptide-Amphiphiles Possessing Cellular Activation Sequences. *Biomacromolecules* **4**, 518-528 (2003).
87. M.P. Lütolf, J.L. Lauer-Fields, H. Schmoekel, A.T. Metters, F.E. Weber, G.B. Fields, and J.A. Hubbell. Synthetic matrix metalloproteinase-sensitive hydrogels for the conduction of tissue regeneration: Engineering cell invasion characteristics. *Proc. Natl. Acad. Sci. USA* **100**, 5413-5418 (2003).
88. Frank Mari and Gregg B. Fields. Conopeptides: Unique pharmacological agents that challenge current peptide methodologies. *Chim. Oggi/Chemistry Today* **21**(6), 43-48 (2003).
89. Shawn M. Sweeney, Gloria DiLullo, Simon J. Slater, José Martinez, Renato V. Iozzo, Janelle L. Lauer-Fields, Gregg B. Fields, and James D. San Antonio. Angiogenesis in Collagen I Requires $\alpha_2\beta_1$ Ligation of a GFP*GER Sequence and Possibly p38 MAPK Activation and Focal Adhesion Disassembly. *J. Biol. Chem.* **278**, 30516-30524 (2003).
90. Diane Baronas-Lowell, Janelle L. Lauer-Fields, and Gregg B. Fields. Defining the roles of collagen and collagen-like proteins within the proteome. *J. Liq. Chromatogr. Rel. Technol.* **26**, 2225-2254 (2003).
91. Janelle L. Lauer-Fields, Péter Kele, Guodong Sui, Hideaki Nagase, Roger M. Leblanc, and Gregg B. Fields. Analysis of matrix metalloproteinase activity using triple-helical substrates incorporating fluorogenic L- or D-amino acids. *Anal. Biochem.* **321**, 105-115 (2003).
92. Diane Baronas-Lowell, Janelle L. Lauer-Fields and Gregg B. Fields. Induction of Endothelial Cell Activation by a Triple-Helical $\alpha_2\beta_1$ Integrin Ligand Derived from Type I Collagen $\alpha 1(I)496$ -507. *J. Biol. Chem.* **279**, 952-962 (2004).
93. Zhenqiang Li, Yoshiyuki Yasuda, Weije Li, Matthew Bogoy, Norman Katz, Ronald E. Gordon, Gregg B. Fields, and Dieter Brömme. Regulation of Collagenase Activities of Human Cathepsins by Glycosaminoglycans. *J. Biol. Chem.* **279**, 5470-5479 (2004).
94. Douglas R. Hurst, Martin A. Schwartz, Mohammad A. Ghaffari, Yonghao Jin, Harald Tschesche, Gregg B. Fields, and Qing-Xiang Amy Sang. Catalytic- and Ecto-domains of Membrane Type 1-Matrix Metalloproteinase have Similar Inhibition Profiles but Distinct Endopeptidase Activities. *Biochem. J.* **377**, 775-779 (2004).
95. Xiaoping Xu, Yao Wang, Janelle L. Lauer-Fields, Gregg B. Fields, and Bjorn Steffensen. Contributions of the MMP-2 Collagen Binding Domain to Gelatin Cleavage: Substrate Binding via the Collagen Binding Domain is Required for MMP-2 Degradation of Gelatin But Not Short Peptides. *Matrix Biol.* **23**, 171-181 (2004).
96. Linda Chung, Deendayal Dinakarandian, Naoto Yoshida, Janelle L. Lauer-Fields, Gregg B. Fields, Robert Visse, and Hideaki Nagase. Collagenase Unwinds Triple Helical Collagen Prior To Peptide Bond Hydrolysis. *EMBO J.* **23**, 3020-3030 (2004).

97. Dmitriy Minond, Janelle L. Lauer-Fields, Hideaki Nagase, and Gregg B. Fields. Matrix Metalloproteinase Triple-Helical Peptidase Activities are Differentially Regulated by Substrate Stability. *Biochemistry* **43**, 11474-11481 (2004).
98. Diane Baronas-Lowell, Janelle L. Lauer-Fields, Jeffrey A. Borgia, Gian Franco Sferrazza, Mohammad Al-Ghoul, Dmitriy Minond, and Gregg B. Fields. Differential Modulation of Human Melanoma Cell Metalloproteinase Expression by $\alpha_2\beta_1$ Integrin and CD44 Triple-Helical Ligands Derived from Type IV Collagen. *J. Biol. Chem.* **279**, 43503-43513 (2004).
99. Janelle L. Lauer-Fields, Hideaki Nagase, and Gregg B. Fields. Development of a Solid-Phase Assay for Analysis of Matrix Metalloproteinase Activity. *J. Biomol. Tech.* **15**, 305-316 (2004).
100. M. Cudic, J.L. Lauer-Fields, and G.B. Fields. Improved synthesis of 5-hydroxylysine (Hyl) derivatives. *J. Peptide Res.* **65**, 272-283 (2005).
101. Katarzyna Pisarewicz, David Mora, Fred C. Pflueger, Gregg B. Fields, and Frank Mari. Polypeptide Chains Containing D- γ -Hydroxyvaline. *J. Am. Chem. Soc.* **127**, 6207-6215 (2005).
102. Carolina Möller, Sanaz Rahmankhah, Janelle Lauer-Fields, Jose Bubis, Gregg B. Fields, and Frank Marí. A Novel Conotoxin Framework with a Helix-Loop-Helix (Cs α/α) Fold. *Biochemistry* **44**, 15986-15996 (2005).
103. A. Franco, K. Pisarewicz, C. Moller, D. Mora, G.B. Fields, and F. Marí. Hyperhydroxylation: A New Strategy for Neuronal Targeting by Venomous Marine Molluscs. *Prog. Mol. Subcell. Biol.* **43**, 83-103 (2006).
104. Dmitriy Minond, Janelle L. Lauer-Fields, Mare Cudic, Christopher M. Overall, Duanqing Pei, Keith Brew, Robert Visse, Hideaki Nagase, and Gregg B. Fields. The Roles of Substrate Thermal Stability and P₂ and P₁' Subsite Identity on Matrix Metalloproteinase Triple-Helical Peptidase Activity and Collagen Specificity. *J. Biol. Chem.* **281**, 38302-38313 (2006).
105. Janelle L. Lauer-Fields, Dmitriy Minond, Thilaka Sritharan, Masahide Kashiwagi, Hideaki Nagase, and Gregg B. Fields. Substrate Conformation Modulates Aggrecanase (ADAMTS-4) Affinity and Sequence Specificity: Suggestion of A Common Topological Specificity of Functionally Diverse Proteases. *J. Biol. Chem.* **282**, 142-150 (2007).
106. Dmitriy Minond, Janelle L. Lauer-Fields, Mare Cudic, Christopher M. Overall, Duanqing Pei, Keith Brew, Marcia L. Moss, and Gregg B. Fields. Differentiation of Secreted and Membrane-Type Matrix Metalloproteinase Activities Based on Substitutions and Interruptions of Triple-Helical Sequences. *Biochemistry* **46**, 3724-3733 (2007).
107. Gregory Bix, Rex A. Iozzo, Ben Woodall, Michelle Burrows, Angela McQuillan, Shelly Campbell, Gregg B. Fields, and Renato V. Iozzo. Endorepellin, the C-terminal angiostatic module of perlecan, enhances collagen-platelet responses via the $\alpha_2\beta_1$ integrin receptor. *Blood* **109**, 3745-3748 (2007).
108. Evonne M. Rezler, David R. Khan, Janelle L. Lauer-Fields, Mare Cudic, Diane Baronas-Lowell, and Gregg B. Fields. Targeted drug delivery utilizing protein-like molecular architecture. *J. Am. Chem. Soc.* **129**, 4961-4972 (2007). Supporting information: 6 pages.
109. Mare Cudic, Frank Marí, and Gregg B. Fields. Synthesis and solid-phase application of suitably protected γ -hydroxyvaline building blocks. *J. Org. Chem.* **72**, 5581-5586 (2007). Supporting information: 17 pages.
110. Janelle L. Lauer-Fields, Mare Cudic, Shuo Wei, Frank Marí, Gregg B. Fields, and Keith Brew. Engineered Sarafotoxins as TIMP-like MMP Inhibitors. *J. Biol. Chem.* **282**, 26948-26955 (2007).
111. Janelle L. Lauer-Fields, Keith Brew, John K. Whitehead, Shunzi Li, Robert P. Hammer, and Gregg B. Fields. Triple-Helical Transition-State Analogues: A New Class of Selective Matrix Metalloproteinase Inhibitors. *J. Am. Chem. Soc.* **129**, 10408-10417 (2007). Supporting information: 16 pages.
112. Fernando Albericio, Gregg Fields, and John Wade. Editorial: Bruce Merrifield Commemorative Issue. *Int. J. Pept. Res. Ther.* **13**, 1-2 (2007).
113. Janelle L. Lauer-Fields, Timothy P. Spicer, Peter S. Chase, Mare Cudic, Gayle D. Burstein, Hideaki Nagase, Peter Hodder, and Gregg B. Fields. Screening of potential ADAMTS-4 inhibitors utilizing a collagen-model FRET substrate. *Anal. Biochem.* **373**, 43-51 (2008).
114. Lata T. Gooljarsingh, Ami Lakdawala, Frank Coppo, Lusong Luo, Gregg B. Fields, Peter J. Tummino, and Richard Gontarek. Characterization of an Exosite Binding Inhibitor of Matrix Metalloprotease 13. *Protein Sci.* **17**, 66-71 (2008).
115. David R. Khan, Evonne M. Rezler, Janelle Lauer-Fields, and Gregg B. Fields. Effects of Drug Hydrophobicity on Liposomal Stability. *Chem. Biol. Drug Des.* **71**, 3-7 (2008).
116. Mare Cudic, Deepak Patel, Janelle L. Lauer-Fields, Keith Brew, and Gregg B. Fields. Development of a Convenient Peptide-Based Assay for Lysyl Hydroxylase. *Biopolymers (Pept. Sci.)* **90**, 330-338 (2008).
117. Janelle L. Lauer-Fields, John K. Whitehead, Shunzi Li, Robert P. Hammer, Keith Brew, and Gregg B. Fields. Selective modulation of matrix metalloproteinase 9 (MMP-9) functions via exosite inhibition. *J. Biol. Chem.* **283**, 20087-20095 (2008).

118. Rajagopalan Bhaskaran, Mark O. Palmier, Janelle L. Lauer-Fields, Gregg B. Fields, and Steven R. Van Doren. MMP-12 catalytic domain recognizes triple-helical peptide models of collagen V with exosites and high activity. *J. Biol. Chem.* **283**, 21779-21788 (2008).
119. Mohammad Al-Ghoul, Thomas B. Brück, Janelle L. Lauer-Fields, Victor Asirvatham, Claudia Zapata, Russell G. Kerr, and Gregg B. Fields. Comparative proteomic analysis of matched primary and metastatic melanoma cell lines. *J. Proteome Res.* **7**, 4107-4118 (2008).
120. Orsolya Giricz, Janelle L. Lauer-Fields, and Gregg B. Fields. The normalization of gene expression data in melanoma: Investigating the use of GAPDH and 18S rRNA as internal reference genes for quantitative real-time PCR. *Anal. Biochem.* **380**, 137-139 (2008). Supplementary material: 7 pages.
121. Janelle L. Lauer-Fields, Dmitriy Minond, Peter S. Chase, Pierre E. Baillargeon, S. Adrian Saldanha, Roma Stawikowska, Peter Hodder, and Gregg B. Fields. High throughput screening of potentially selective MMP-13 exosite inhibitors utilizing a triple-helical FRET substrate. *Bioorg. Med. Chem.* **17**, 990-1005 (2009).
122. Mare Cudic and Gregg B. Fields. Extracellular proteases as targets for drug development. *Curr. Pept. Protein Sci.* **10**, 297-307 (2009).
123. Janelle L. Lauer-Fields, Michael J. Chalmers, Scott A. Busby, Dmitriy Minond, Patrick R. Griffin, and Gregg B. Fields. Identification of Specific Hemopexin-like Domain Residues That Facilitate Matrix Metalloproteinase Collagenolytic Activity. *J. Biol. Chem.* **284**, 24017-24024 (2009).
124. Mare Cudic, Gayle D. Burstein, Gregg B. Fields, and Janelle Lauer-Fields. Analysis of flavonoid-based pharmacophores that inhibit aggrecanases (ADAMTS-4 and ADAMTS-5) and matrix metalloproteinases through the use of topologically constrained peptide substrates. *Chem. Biol. Drug Des.* **74**, 473-482 (2009).
125. Jing Ye, Sara A. Fox, Mare Cudic, Evonne M. Rezler, Janelle L. Lauer, Gregg B. Fields, and Andrew C. Terentis. Determination of Penetratin Secondary Structure in Live Cells with Raman Microscopy. *J. Am. Chem. Soc.* **132**, 980-988 (2010). Supporting information: 3 pages.
126. Gregg B. Fields. Synthesis and biological applications of collagen-model triple-helical peptides. *Org. Biomol. Chem.* **8**, inside cover (issue 6) + 1237-1258 (2010).
127. Gregg B. Fields. Society Membership: Guest Editorial from the APS President. *Biopolymers (Pept. Sci.)* **94**(3), iii (2010).
128. Qian Shi, Eric A. Banks, X. Sean Yu, Sumin Gu, Janelle Lauer, Gregg B. Fields, and Jean X. Jiang. Amino Acid Residue V³⁶² Plays a Critical Role in Maintaining the Structure of C Terminus of Connexin 50 and in Lens Epithelial-fiber Differentiation. *J. Biol. Chem.* **285**, 18415-18422 (2010).
129. Mark O. Palmier, Yan G. Fulcher, Rajagopalan Bhaskaran, Vinh Q. Duong, Gregg B. Fields, and Steven R. Van Doren. NMR and Bioinformatics Discovery of Exosites that Tune Metalloelastase Specificity for Solubilized Elastin and Collagen Triple Helices. *J. Biol. Chem.* **285**, 30918-30930 (2010).
130. Jianxi Xiao, Janelle L. Lauer, Gregg B. Fields, and Jean Baum. Local conformation and dynamics of isoleucine in the collagenase cleavage site provides recognition signal for matrix metalloproteinases. *J. Biol. Chem.* **285**, 34181-34190 (2010).
131. Orsi Giricz, Janelle L. Lauer, and Gregg B. Fields. Variability in melanoma metalloproteinase profiles. *J. Biomol. Tech.* **21**, 194-204 (2010).
132. Orsi Giricz, Janelle L. Lauer, and Gregg B. Fields. Comparison of Metalloproteinase Protein and Activity Profiling. *Anal. Biochem.* **409**, 37-45 (2011).
133. Manishabrata Bhowmick, Ravinder R. Sappidi, Gregg B. Fields, and Salvatore D. Lepore. Efficient Synthesis of Fmoc-Protected Phosphinic Pseudodipeptides: Building Blocks for the Synthesis of Matrix Metalloproteinase Inhibitors. *Biopolymers (Pept. Sci.)* **96**, 1-3 (2011).
134. Gregg B. Fields. A Message from the President of the American Peptide Society. *Biopolymers (Pept. Sci.)* **96**, 364 (2011).
135. Moran Grossman, Benjamin Born, Matthias Heyden, Dmitriy Tworowski, Gregg B. Fields, Irit Sagi, and Martina Havenith. Correlated structural kinetics and retarded solvent dynamics at the metalloprotease active site. *Nat. Struct. Mol. Biol.* **18**, 1102-1108 (2011).
136. Trista K. Robichaud, Bjorn Steffensen, and Gregg B. Fields. Exosite Interactions Impact Matrix Metalloproteinase Collagen Specificities. *J. Biol. Chem.* **286**, 37535-37542 (2011).
137. Joshua Roth, Dmitriy Minond, Etzer Darout, Qin Liu, Janelle Lauer, Peter Hodder, Gregg B. Fields, and William R. Roush. Identification of novel, exosite-binding matrix metalloproteinase-13 scaffolds. *Bioorg. Med. Chem. Lett.* **21**, 7180-7184 (2011).
138. Laurence H. Arnold, Louise Butt, Stephen H. Prior, Chris Read, Gregg B. Fields, and Andrew R. Pickford. The Interface Between Catalytic and Hemopexin Domains in Matrix Metalloproteinase 1 Conceals a Collagen Binding Exosite. *J. Biol. Chem.* **286**, 45073-45082 (2011).

139. Ivano Bertini, Marco Fragai, Claudio Luchinat, Maxime Melikian, Mirco Toccafondi, Janelle L. Lauer, and Gregg B. Fields. Structural Basis for Matrix Metalloproteinase 1-Catalyzed Collagenolysis. *J. Am. Chem. Soc.* **134**, 2100-2110 (2012). Supporting information: 24 pages.
140. Walter J. Akers, Baogang Xu, Hyeran Lee, Gail P. Sudlow, Gregg B. Fields, Samuel Achilefu, and W. Barry Edwards. Detection of MMP-2 and MMP-9 activity *in vivo* with a triple-helical peptide optical probe. *Bioconjug. Chem.* **23**, 656-663 (2012).
141. Rugmani Padmanabhan Iyer, Nicolle L. Patterson, Gregg B. Fields, and Merry L. Lindsey. The History of Matrix Metalloproteinases: Milestones, Myth, and (Mis)Perceptions. *Am. J. Physiol. Heart Circul. Physiol.* **303**, H919-H930 (2012).
142. Anna Knapinska and Gregg B. Fields. Chemical Biology for Understanding Matrix Metalloproteinase Function. *ChemBioChem* **13**, 2002-2020 (2012).
143. Dmitriy Minond, Mare Cudic, Nina Bionda, Marc Giulianotti, Laura Maida, Richard A. Houghten, and Gregg B. Fields. Discovery of Novel Inhibitors of A Disintegrin And Metalloprotease 17 (ADAM17) Using Glycosylated and Non-Glycosylated Substrates. *J. Biol. Chem.* **287**, 36473-36487 (2012).
144. Manishabrata Bhowmick and Gregg B. Fields. Synthesis of Fmoc-Gly-Ile Phosphinic Pseudodipeptide: Residue Specific Conditions for Construction of Matrix Metalloproteinase Inhibitor Building Blocks. *Int. J. Peptide Res. Ther.* **18**, 335-339 (2012).
145. Margaret W. Ndinguri, Alexander Zheleznyak, Janelle L. Lauer, Carolyn J. Anderson, and Gregg B. Fields. Application of collagen-model triple-helical peptide-amphiphiles for CD44 targeted drug delivery systems. *J. Drug Delivery* **2012**, Article ID 592602, 13 pages (2012).
146. Margarita Mikhailova, Xiaoping Xu, Trista Robichaud, Sanjay Pal, Gregg B. Fields, and Bjorn Steffensen. Identification of collagen binding domain residues that govern catalytic activities of matrix metalloproteinase-2 (MMP-2). *Matrix Biol.* **31**, 380-388 (2012).
147. Margaret W. Ndinguri, Manishabrata Bhowmick, Dorota Tokmina-Roszyk, Trista K. Robichaud, and Gregg B. Fields. Peptide-Based Selective Inhibitors of Matrix Metalloproteinase-Mediated Activities. *Molecules* **17**, 14230-14248 (2012).
148. Gregg B. Fields. Interstitial Collagen Catabolism. *J. Biol. Chem.* **288**, 8785-8793 (2013).
149. Hsueh-Liang Fu, Anjum Sohail, Rajeshwari R. Valiathan, Benjamin D. Wasinski, Malika Kumarasiri, Kiran V. Mahasenan, M. Margarida Bernardo, Dorota Tokmina-Roszyk, Gregg B. Fields, Shahriar Mobashery, and Rafael Fridman. Shedding of Discoidin Domain Receptor (DDR) 1 by Membrane Type (MT)-Matrix Metalloproteinases (MMPs). *J. Biol. Chem.* **288**, 12114-12129 (2013).
150. Yi Zhou, Mingli Zhao, Gregg B. Fields, Chun-Fang Wu and W. Dale Branton. δ/ω -Plectoxin-Pt1a: An excitatory spider toxin with actions on both Ca^{2+} and Na^{+} channels. *PLoS ONE* **8**, e64324 (2013).
151. Michal Tokmina-Roszyk, Dorota Tokmina-Roszyk, and Gregg B. Fields. The Synthesis and Application of Fmoc-Lys(FAM) Building Blocks. *Biopolymers (Pept. Sci.)* **100**, 347-355 (2013).
152. Roma Stawikowska, Mare Cudic, Marc Giulianotti, Richard A. Houghten, Gregg B. Fields, and Dmitriy Minond. Activity of A Disintegrin And Metalloprotease 17 (ADAM17) is Regulated by its Non-Catalytic Domains and Secondary Structure of its Substrates. *J. Biol. Chem.* **288**, 22871-22879 (2013).
153. Linda Cerofolini, Gregg B. Fields, Marco Fragai, Carlos F.G.C. Geraldés, Claudio Luchinat, Giacomo Parigi, Enrico Ravera, Dmitri I. Svergun, and João M.C. Teixeira. Examination of matrix metalloproteinase-1 (MMP-1) in solution: A preference for the pre-collagenolysis state. *J. Biol. Chem.* **288**, 30659-30671 (2013).
154. Janelle L. Lauer, Manishabrata Bhowmick, Dorota Tokmina-Roszyk, Yan Lin, Steven R. Van Doren, and Gregg B. Fields. The Role of Collagen Charge Clusters in the Modulation of Matrix Metalloproteinase Activity. *J. Biol. Chem.* **289**, 1981-1992 (2014).
155. Anais Chavaroche, Mare Cudic, Marc Giulianotti, Richard A. Houghten, Gregg B. Fields, and Dmitriy Minond. Glycosylation of A Disintegrin And Metalloprotease 17 (ADAM17) Affects its Activity and Inhibition. *Anal. Biochem.* **449**, 68-75 (2014).
156. Sonia Pahwa, Maciej J. Stawikowski, and Gregg B. Fields. Monitoring and inhibiting MT1-MMP during cancer initiation and progression. *Cancers* **6**, 416-435 (2014).
157. Lillian Onwuhu-Ekpete, Lisa Tack, Anna Knapinska, Lyndsay Smith, Gaurav Kaushik, Travis LaVoi, Marc Giulianotti, Richard Houghten, Gregg B. Fields, and Dmitriy Minond. Novel Pyrrolidine Diketopiperazines Selectively Inhibit Melanoma Cells Via Induction of Late Apoptosis. *J. Med. Chem.* **57**, 1599-1608 (2014).
158. Michal Tokmina-Roszyk, Dorota Tokmina-Roszyk, Manishabrata Bhowmick, and Gregg B. Fields. Development of a FRET assay for monitoring bacterial collagenase triple-helical peptidase activity. *Anal. Biochem.* **453**, 61-69 (2014).

159. Long Gu, Caroline Li, Robert J. Hickey, Jeremy M. Stark, Gregg B. Fields, Walter H. Lang, John A. Sandoval, and Linda H. Malkas. A PCNA-derived Cell Permeable Peptide Selectively Inhibits Neuroblastoma Cell Growth. *PLoS ONE* **9**, e94773 (2014).
160. Hongjie Wang, Adel Nefzi, Gregg B. Fields, Madepalli Lakshmana, and Dmitriy Minond. AlphaLISA-based HTS Assay to Measure Release of Soluble APP α . *Anal. Biochem.* **459**, 24-30 (2014).
161. Xuan Zhang, Jamee Bresee, Philip P. Cheney, Baogang Xu, Manishabrata Bhowmick, Mare Cudic, Gregg B. Fields, and W. Barry Edwards. Evaluation of a triple-helical peptide with quenched fluorophores for optical imaging of MMP-2 and MMP-9 proteolytic activity. *Molecules* **19**, 8571-8588 (2014).
162. Lisandra E. de Castro Brás, Courtney A. Cates, Kristine Y. DeLeon-Pennell, Yonggang Ma, Rugmani Padmanabhan Iyer, Ganesh V. Halade, Andriy Yabluchanskiy, Gregg B. Fields, Susan T. Weintraub, and Merry L. Lindsey. Citrate Synthase is a Novel *In Vivo* Matrix Metalloproteinase-9 Substrate that Regulates Mitochondrial Function in the Post-Myocardial Infarction Left Ventricle. *Antioxid. Redox Signal.* **21**, 1974-1985 (2014).
163. Xuan Zhang, Jamee Bresee, Gregg B. Fields, and W. Barry Edwards. Near infrared triple-helical peptide with quenched fluorophores for optical imaging of MMP-2 and MMP-9 proteolytic activity *in vivo*. *Bioorg. Med. Chem. Lett.* **24**, 3786-90 (2014).
164. Maciej J. Stawikowski, Beatrix Aukszi, Roma Stawikowska, Mare Cudic, and Gregg B. Fields. Glycosylation modulates melanoma cell $\alpha 2\beta 1$ and $\alpha 3\beta 1$ integrin interactions with type IV collagen. *J. Biol. Chem.* **289**, 21591-21604 (2014).
165. Franck Madoux, Timothy P. Spicer, Louis Scampavia, Gregg B. Fields, Christoph Becker-Pauly, and Dmitriy Minond. High Throughput Screening for Inhibitors of Meprin α and β . *Biopolymers (Pept. Sci.)* **102**, 396-406 (2014).
166. Timothy P. Spicer, Jianwen Jiang, Alexander B. Taylor, Jun Yong Choi, P. John Hart, William R. Roush, Gregg B. Fields, Peter S. Hodder, and Dmitriy Minond. Characterization of Selective Exosite-Binding Inhibitors of Matrix Metalloproteinase 13 That Prevent Articular Cartilage Degradation *In Vitro*. *J. Med. Chem.* **57**, 9598-9611 (2014).
167. Jessica Dielmann-Gessner, Moran Grossman, Valeria Conti Nibali, Benjamin Born, Inna Solomonov, Gregg B. Fields, Martina Havenith, and Irit Sagi. Enzymatic turnover of macromolecules generates long lasting protein-water coupled motions beyond reaction steady-state. *Proc. Natl. Acad. Sci. USA* **111**, 17857-17862 (2014).
168. Shanna J. Smith, Elizabeth A. Phipps, Lacey E. Dobrolecki, Karla Mabrey, Pattie Gulley, Kelsey L. Dillehay, Zhongyun Dong, Gregg B. Fields, Robert J. Hickey, and Linda H. Malkas. A Peptide Mimicking a Region in Proliferating Cell Nuclear Antigen (PCNA) Specific to Key Protein Interactions is Cytotoxic to Breast Cancer. *Mol. Pharmacol.* **87**, 263-276 (2015).
169. Yu Gao, Sabrina Amar, Sonia Pahwa, Gregg B. Fields and Thomas Kodadek. Rapid Lead Discovery Through Iterative Screening of One Bead One Compound Libraries. *ACS Comb. Sci.* **7**, 49-59 (2015).
170. Yingchu Zhao, Thomas Marcink, Raghavendar Reddy Sanganna Gari, Brendan P. Marsh, Gavin M. King, Roma Stawikowska, Gregg B. Fields, and Steven R. Van Doren. Transient Collagen Triple Helix Binding to a Key Metalloproteinase in Invasion and Development. *Structure* **23**, 257-269 (2015). Commentary by Andrew R. Pickford, The Gentle Grip of a Helping Hand, *Structure* **23**, 249-250 (2015).
171. Gregg B. Fields. New Strategies for Targeting Matrix Metalloproteinases. *Matrix Biol.* **44-46**, 239-246 (2015).
172. Manishabrata Bhowmick, Roma Stawikowska, Dorota Tokmina-Roszyk, and Gregg B. Fields. Matrix Metalloproteinase Inhibition by Heterotrimeric Triple-Helical Peptide Transition State Analogs. *ChemBiochem* **16**, 1084-1092 (2015).
173. Anna M. Knapinska, Dorota Tokmina-Roszyk, Sabrina Amar, Michal Tokmina-Roszyk, Vadym N. Mochalin, Yury Gogotsi, Patrick Cosme, Andrew C. Terentis, and Gregg B. Fields. Solid-Phase Synthesis, Characterization, and Cellular Activities of Nanodiamond-Peptides Derived From Collagen. *Biopolymers (Pept. Sci.)* **104**, front cover (issue number 3) + 186-195 (2015). Commentary by Editor Joel Schneider, Call for Submissions. *Biopolymers (Pept. Sci.)* **104**(3), v (2015).
174. Maciej J. Stawikowski, Roma Stawikowska, and Gregg B. Fields. Collagenolytic matrix metalloproteinase activities towards peptomeric triple-helical substrates. *Biochemistry* **54**, 3110-3121 (2015).
175. Anna Knapinska, Daniela Dreymuller, Andreas Ludwig, Lyndsay Smith, Vladislav Golubkov, Anjum Sohail, Rafael Fridman, Marc Giulianotti, Travis LaVoi, Richard Houghten, Gregg B. Fields, and Dmitriy Minond. SAR Studies of Exosite-Binding Substrate-Selective Inhibitors of A Disintegrin And Metalloprotease 17 (ADAM17) and Application as Selective *In Vitro* Probes. *J. Med. Chem.* **58**, 5808-5824 (2015).
176. Sabrina Amar and Gregg B. Fields. Potential clinical implications of recent MMP inhibitor design strategies. *Exp. Rev. Proteomics* **12**, 445-447 (2015).
177. Merry L. Lindsey, Kristine Y. DeLeon-Pennell, Rogelio Zamilpa, Fouad Zouein, Dustin Bratton, Elizabeth R. Flynn, Presley L. Cannon, Yuan Tian, Yu-Fang Jin, Richard A. Lange, Dorota Tokmina-Roszyk, Gregg B. Fields, Rugmani P. Iyer, and Lisandra E. de Castro Brás. A Collagen Matricryptin Reduces Cardiac Dysfunction Post-

- myocardial Infarction by Preserving Left Ventricular Geometry and Integrity. *J. Am. Coll. Cardiol.* **66**, 1364-1374 (2015).
178. Long Gu, Peiguo Chu, Robert Lingeman, Heather McDaniel, Steven Kechichian, Robert J. Hickey, Zheng Liu, Yate-Ching Yuan, John A. Sandoval, Gregg B. Fields, and Linda H. Malkas. The Mechanism by Which *MYCN* Amplification Confers an Enhanced Sensitivity to a PCNA-derived Cell Permeable Peptide in Neuroblastoma Cells. *EBioMedicine* **2**, 1923-1931 (2015).
 179. Stephen H. Prior, Todd S. Byrne, Dorota Tokmina-Roszyk, Gregg B. Fields, and Steven R. Van Doren. Path to Collagenolysis: Collagen V Triple-Helix Model Bound Productively and in Encounters by Matrix Metalloproteinase-12. *J. Biol. Chem.* **291**, 7888-7901 (2016).
 180. Warispreet Singh, Gregg B. Fields, Christo Christov, and Tatyana Karabancheva-Christova. Importance of the Linker Region in Matrix Metalloproteinase-1 Domain Interactions. *RSC Adv.* **6**, 23223-23232 (2016).
 181. Linda Cerofolini, Sabrina Amar, Janelle L. Lauer, Tommaso Martelli, Marco Fragai, Claudio Luchinat, and Gregg B. Fields. Bilayer membrane modulation of membrane type 1 matrix metalloproteinase (MT1-MMP) structure and proteolytic activity. *Nat. Sci. Rep.* **6**, 29511 (2016).
 182. Anna M. Knapinska, Sabrina Amar, Zhong He, Sandro Matosevic, Claudia Zylberberg, and Gregg B. Fields. Matrix metalloproteinases as reagents for cell isolation. *Enzyme Microb. Tech.* **93-94**, 29-43 (2016).
 183. Franck Madoux, Daniela Dreytmuller, Jean-Phillipe Pettitoud, Radleigh Santos, Christoph Becker-Pauly, Andreas Ludwig, Gregg B. Fields, Thomas Bannister, Timothy P. Spicer, Mare Cudic, Louis D. Scampavia, and Dmitriy Minond. Discovery of an enzyme and substrate selective inhibitor of ADAM10 using an exosite-binding glycosylated substrate. *Nat. Sci. Rep.* **6**, 11 (2016).
 184. Rugmani P. Iyer, Lisandra E. de Castro Brás, Nicole L. Patterson, Manishabrata Bhowmick, Elizabeth R. Flynn, Majdouline Asher, Presley L. Cannon, Kristine Y. DeLeon-Pennell, Gregg B. Fields, and Merry L. Lindsey. Early Matrix Metalloproteinase-9 Inhibition Post-Myocardial Infarction Worsens Cardiac Dysfunction by Delaying Inflammation Resolution. *J. Mol. Cell. Cardiol.* **S0022-2828**, 30381-30389 (2016).
 185. Warispreet Singh, Gregg B. Fields, Christo Z. Christov, and Tatyana G. Karabancheva-Christova. Effects of Mutations on Structure-Function Relationships of Matrix Metalloproteinase-1. *Int. J. Mol. Sci.* **17**, 1727 (2016).
 186. Yulong Chen, Houfu Guo, Masahiko Terajima, Priyam Banerjee, Xin Liu, Jiang Yu, Amin A. Momin, Hiroyuki Katayama, Samir M. Hanash, Alan R. Burns, Gregg B. Fields, Mitsuo Yamauchi, and Jonathan M. Kurie. Lysyl Hydroxylase 2 Is Secreted By Tumor Cells and Can Modify Collagen in the Extracellular Space. *J. Biol. Chem.* **291**, 25799-25808 (2016).
 187. Manishabrata Bhowmick, Dorota Tokmina-Roszyk, Lillian Onwuha-Ekpete, Kelli Harmon, Trista Robichaud, Rita Fuerst, Roma Stawikowska, Bjorn Steffensen, William R. Roush, Hector Wong, and Gregg B. Fields. Second Generation Triple-Helical Peptide Transition State Analog Matrix Metalloproteinase Inhibitors. *J. Med. Chem.* **60**, 3814-3827 (2017).
 188. Changrong Ge, Dongmei Tong, Bibo Liang, Erik Lönnblom, Nadine Schneider, Cecilia Hagert, Johan Viljanen, Burcu Ayoglu, Roma Stawikowska, Peter Nilsson, Gregg B. Fields, Thomas Skogh, Alf Kastbom, Jan Kihlberg, Harald Burkhardt, Doreen Dobritzsch, and Rikard Holmdahl. Anti-citrullinated protein antibodies can cause arthritis by cross-reactive binding to joint cartilage. *J. Clin. Invest. Insight* **2**, e93688 (2017).
 189. Jun Yong Choi, Rita Fuerst, Anna M. Knapinska, Alex Taylor, Lyndsay Smith, Xiaohang Cao, P. John Hart, Gregg B. Fields, and William R. Roush. Structure-based design and synthesis of potent and selective matrix metalloproteinase 13 inhibitors. *J. Med. Chem.* **60**, 5816-5825 (2017).
 190. Sabrina Amar, Lyndsay Smith, and Gregg B. Fields. Matrix metalloproteinase collagenolysis in health and disease. *Biochim. Biophys. Acta Mol. Cell Res.* **1864**, 1940-1951 (2017).
 191. Justin B. Schaal, Dat Q. Tran, Akshay Subramanian, Reshma Patel, Teresina Laragione, Kevin D. Roberts, Katie Trinh, Prasad Tongaonkar, Patti A. Tran, Dmitriy Minond, Gregg B. Fields, Paul Beringer, André J. Ouellette, Percio S. Gulko, and Michael E. Selsted. Suppression and Resolution of Autoimmune Arthritis by Rhesus θ -Defensin-1, an Immunomodulatory Macrocyclic Peptide. *PLoS ONE* **12**, e0187868 (2017).
 192. Sabrina Amar, Dmitriy Minond, and Gregg B. Fields. Clinical implications of compounds designed to inhibit ECM-modifying metalloproteinases. *Proteomics* **17**, 1600389 (2017).
 193. Tatyana G. Karabancheva-Christova, Christo Z. Christov, and Gregg B. Fields. Conformational Dynamics of Matrix Metalloproteinase-1•Triple-helical Peptide Complexes. *J. Phys. Chem. B* **122**, 5316-5326 (2018).
 194. Maciej Stawikowski and Gregg B. Fields. Tricine as a convenient scaffold for the synthesis of C-terminally branched collagen-model peptides. *Tetrahedron Lett.* **59**, 130-134 (2018).
 195. Orsi Giricz, Yongkai Mo, Kimberley N. Dahlman, Xiomaris M. Cotto-Rios, Chiara Vardabasso, Hoa Nguyen, Bernice Matusow, Matthias Bartenstein, Veronika Polishchuk, Douglas B. Johnson, Tushar D. Bhagat, Rafe Shellooe, Elizabeth Burton, James Tsai, Chao Zhang, Gaston Habets, John M. Grealley, Yiting Yu, Paraic A. Kenny, Gregg B. Fields, Kith Pradhan, E. Richard Stanley, Emily Bernstein, Gideon Bollag, Evripidis Gavathiotis,

- Brian L. West, Jeffrey A. Sosman, and Amit K. Verma. The RUNX1/IL-34/CSF-1R axis is an autocrinally regulated modulator of resistance to BRAF-V600E inhibition in melanoma. *J. Clin. Invest. Insight* **3**, e120422 (2018).
196. Charles J. Bruce, Guojun Bu, John M. Centanni, Mary D. Davis, Jon Dobson, Joshua M. Hare, Gregg B. Fields, Richard Jove, Norma Kenyon, Aisha Khan, Keith March, Sandro Matosevic, Ayesha Mahmood, Carl J. Pepine, Camillo Ricordi, Shane A. Shapiro, Claudia Zylberberg, and Ezequiel Zylberberg. Regenerative Medicine in the State of Florida: Letter Outlining the Florida Organization for Regenerative Medicine. *Stem Cells Trans. Med.* **7**, 511-512 (2018).
 197. Rita Fuerst, Jun Yong Choi, Anna M. Knapinska, Lyndsay Smith, Michael D. Cameron, Claudia H. Ruiz, Gregg B. Fields, and William R. Roush. Development of matrix metalloproteinase 13 inhibitors - A structure-activity/structure-property relationship study. *Bioorg. Med. Chem.* **26**, 4984-4995 (2018).
 198. Michal Tokmina-Roszyk and Gregg B. Fields. Dissecting MMP P₁₀' and P₁₁' Subsite Sequence Preferences, Utilizing a Positional Scanning, Combinatorial Triple-Helical Peptide Library. *J. Biol. Chem.* **293**, 16661-16676 (2018).
 199. Tara C. Marcink, Jayce A. Simoncic, Bo An, Anna M. Knapinska, Yan G. Fulcher, Narahari Akkaladevi, Gregg B. Fields, and Steven R. Van Doren. MT1-MMP Binds Membranes by Opposite Tips of its β -Propeller to Position it for Pericellular Proteolysis. *Structure* **27**, 281-292 (2019).
 200. Anna M. Knapinska and Gregg B. Fields. The expanding role of MT1-MMP in cancer progression. *Pharmaceuticals* **12**, 77 (2019).
 201. Sonia Pahwa, Manishabrata Bhowmick, Sabrina Amar, Jian Cao, Alex Y. Strongin, Rafael Fridman, Stephen J. Weiss, and Gregg B. Fields. Characterization and regulation of MT1-MMP cell surface-associated activity. *Chem. Biol. Drug Design* **93**, 1251-1264 (2019).
 202. Gregg B. Fields. Mechanisms of action of novel drugs targeting angiogenesis-promoting matrix metalloproteinases. *Front. Immunol.* **10**, 1278 (2019).
 203. Gregg B. Fields. The rebirth of matrix metalloproteinase inhibitors: moving beyond the dogma. *Cells* **8**, 984 (2019).
 204. Manikandan Palrasu, Anna M. Knapinska, Juan Diez, Lyndsay Smith, Travis LaVoi, Marc Giulianotti, Richard A. Houghten, Gregg B. Fields, and Dmitriy Minond. A novel probe for spliceosomal proteins that induces autophagy and death of melanoma cells reveals new targets for melanoma drug discovery. *Cell. Physiol. Biochem.* **53**, 656-686 (2019).
 205. Anna M. Knapinska, Melissa Hart, Gary Drotleff, and Gregg B. Fields. Matrix Metalloproteinase Triple-Helical Peptide Inhibitors: Potential Cross-Reactivity with Caspase 11. *Molecules* **24**, 4355 (2019).
 206. Maré Cudic and Gregg B. Fields. Modulation of receptor binding to collagen by glycosylated 5-hydroxylysine: Chemical biology approaches made feasible by Carpino's Fmoc group. *Pept. Sci.* **112**, e24156 (2020).
 207. Andy V. Khamoui, Dorota Tokmina-Roszyk, Harry B. Rossiter, Gregg B. Fields, and Nishant P. Visavadiya. Hepatic proteome profiling reveals altered mitochondrial metabolism and suppressed acyl-CoA synthetase-1 in colon-26 tumor-induced cachexia. *Physiol. Genomics* **52**, 203-216 (2020).
 208. Forrest G. FitzGerald, Maria C. Rodriguez Benavente, Camelia Garcia, Yaima Rivero, YashoNandini Singh, Hongjie Wang, Gregg B. Fields, and Maré Cudic. TF-containing MUC1 glycopeptides fail to entice Galectin-1 recognition of tumor-associated Thomsen-Freidenreich (TF) antigen (CD176) in solution. *Glycoconj. J.* **37**, 657-666 (2020).
 209. Johan Viljanen, Erik Lönnblom, Changrong Ge, Jie Yang, Lei Cheng, Silvia Aldi, Weiwei Cai, Alf Kastbom, Christopher Sjöwall, Gregg B. Fields, Inger Gjertsson, Rikard Holmdahl, and Jan Kihlberg. Synthesis of an array of triple-helical peptides from type II collagen for multiplex analysis of autoantibodies in rheumatoid arthritis. *ACS Chem. Biol.* **15**, 2605-2615 + 3072 (2020).
 210. Anna M. Knapinska, Chandani Singh, Gary Drotleff, Daniela Blanco, Cedric Chai, Jason Schwab, Anu Herd, and Gregg B. Fields. Matrix Metalloproteinase 13 Inhibitors for Modulation of Osteoclastogenesis: Enhancement of Solubility and Stability. *ChemMedChem* **16**, 1133-1142 (2021).
 211. Chen Hao Lo, Gemma Shay, Jeremy J. McGuire, Tao Li, Kenneth Shain, Anna M. Knapinska, Gregg B. Fields, and Conor C. Lynch. Host-derived matrix metalloproteinase-13 activity promotes multiple myeloma-induced osteolysis and reduces overall survival. *Cancer Res.* **81**, 2415-2428 (2021).
 212. Shurong Hou, Juan Diez, Chao Wang, Christoph Becker-Pauly, Gregg B. Fields, Thomas Bannister, Timothy P. Spicer, Louis D. Scampavia, and Dmitriy Minond. Discovery and Optimization of Selective Inhibitors of Meprin α (Part I). *Pharmaceuticals* **14**, 203 (2021).
 213. Chao Wang, Juan Diez, Hajeung Park, Christoph Becker-Pauly, Gregg B. Fields, Timothy P. Spicer, Louis D. Scampavia, Dmitriy Minond, and Thomas D. Bannister. Discovery and Optimization of Selective Inhibitors of Meprin α (Part II). *Pharmaceuticals* **14**, 197 (2021).

214. Hou-Fu Guo, N. Bota-Rabassedas, Priyam Banerjee, Masahiko Terajima, Bertha L. Rodriguez, Don L. Gibbons, Yulong Chen, Chi-Lin Tsai, Xin Liu, Jiang Yu, Xiaochao Tan, Michal Tokmina-Roszyk, Roma Stawikowska, Gregg B. Fields, Mitchell D. Miller, George N. Phillips, Jr., John A. Tainer, Mitsuo Yamauchi, and Jonathan M. Kurie. A collagen glucosyltransferase drives lung adenocarcinoma progression. *Nat. Commun. Biol.* **4**, 482 (2021).
215. Gregg B. Fields. Editorial. *J. Cell. Physiol.* **236**, 7297 (2021).
216. Ann Varghese, Shobhit S. Chaturvedi, Gregg B. Fields, and Tatyana G. Karabencheva-Christova. A synergy between the catalytic and structural Zn(II) ions and the enzyme and substrate dynamics underlies the structure-function relationships of matrix metalloproteinase collagenolysis. *J. Biol. Inorg. Chem.* **26**, 583-597 (2021).
217. Ann Varghese, Shobhit S. Chaturvedi, Bella DiCastrì, Emerald Mehler, Gregg B. Fields, and Tatyana G. Karabencheva-Christova. Effects of the nature of the metal ion, protein and substrate on the catalytic metal center in matrix metalloproteinase-1: Insights from a multilevel MD, QM/MM and QM studies. *ChemPhysChem* **23**, front cover (issue number 4) + 10.1002/cphc.202100680 (2021).
218. Lillian Onwuha-Ekpete and Gregg B. Fields. Application of a triple-helical peptide inhibitor of MMP-2/MMP-9 to examine T-cell activation in experimental autoimmune encephalomyelitis. *Pept. Sci.* **114**, e24262 (2022).
219. Andy V. Khamoui, Dorota Tokmina-Roszyk, Rafaela Feresin, Gregg B. Fields, and Nishant P. Visavadiya. Skeletal muscle proteome expression differentiates severity of cancer cachexia in mice and identifies loss of fragile X mental retardation syndrome-related protein 1. *Proteomics* **22**, 2100157 (2022).
220. Peibin Liang, Yanpeng Li, Rui Xu, Kutty Selva Nandakumar, Roma Stawikowska, Gregg B. Fields, and Rikard Holmdahl. Characterization of chronic relapsing antibody mediated arthritis in mice deficient in an induced reactive oxygen species response. *Mol. Biomed.* **3**, 14 (2022).
221. Qixing Li, Yanpeng Li, Bibo Liang, Rui Xu, Bingze Xu, Erik Lönnblom, Hui Feng, Jing'an Bai, Roma Stawikowska, Aiping Lu, Gregg B. Fields, Lianbo Xiao, and Rikard Holmdahl. Rheumatoid arthritis sera antibodies to citrullinated collagen type II bind joint cartilage. *Arthritis Res. Ther.* **24**, 257 (2022).
222. Rita Fuerst, Jun-Yong Choi, Anna M. Knapinska, Michael D. Cameron, Claudia H. Ruiz, Amber Eliason, Mark S. Sundrud, Gregg B. Fields, and William R. Roush. Development of a putative Zn²⁺-chelating but highly selective matrix metalloproteinase 13 inhibitor. *Bioorg. Med. Chem. Lett.* **76**, 129014 (2022).
223. Sodiq O. Waheed, Ann Varghese, Isabella DiCastrì, Brenden Kaski, Ciara LaRouche, Gregg B. Fields, and Tatyana G. Karabencheva-Christova. Mechanism of the Early Catalytic Events in the Collagenolysis by Matrix Metalloproteinase-1. *ChemPhysChem* **24**, e202200943 (2023).
224. Anna M. Knapinska, Gary Drotleff, Cedric Chai, Destiny Twohill, Alexa Ernce, Isabella Grande, Michelle Rodríguez, Dorota Tokmina-Roszyk, Brad Larson, and Gregg B. Fields. Screening MT1-MMP Inhibitors in Three-dimensional Tumor Spheroids. *Biomedicines* **11**, 562 (2023).
225. Saheed Oluwasina Oseni, Corey Naar, Mirjana Pavlovic, Waseem Asghar, James Hartmann, Gregg B. Fields, Nwadiuto Esiobu, and James Kumi-Diaka. The molecular basis and clinical consequences of chronic inflammation in prostatic diseases: Prostatitis, benign prostate hyperplasia, and prostate cancer. *Cancers*, under revision (2023).
226. Ann Varghese, Sodiq Waheed, Kotewararao Gorantla, Isabella DiCastrì, Ciara LaRouche, Brenden Kaski, Gregg B. Fields, and Tatyana G. Karabencheva-Christova. A Second Water Molecule and Conformational Dynamics Play Key Roles in the Catalytic Mechanism of Collagen Hydrolysis by Zinc(II)-Dependent Matrix Metalloproteinase-1. *ACS Catalysis*, submitted (2023).
227. Zhongwei Xu, Bingze Xu, Susanna Lundström, Alex Moreno Giro, Danxia Zhao, Outi Sareila, Qixing Li, Alexander Krämer, Erik Lönnblom, Lei Cheng, Bibo Liang, Myriam Martin, Anna Blom, Roma Stawikowska, Gregg B. Fields, Roman Zubarev, and Rikard Holmdahl. Recombinant monoclonal antibody to collagen F4 epitope abrogates arthritis by targeting FCGR3 on neutrophils. *Nat. Commun.*, submitted (2023).

BOOKS AND BOOK CHAPTERS - REVIEWS

1. Gregg B. Fields. The Application of Solid Phase Peptide Synthesis to the Study of Structure-Function Relationships in the Collagen-Collagenase System. Ph.D. Thesis, Florida State University, Tallahassee, FL, 213 pages, 1988.
2. Gregg B. Fields, Zhenping Tian, and George Barany. Principles and Practice of Solid-Phase Peptide Synthesis. *In* "Synthetic Peptides: A User's Guide" (G.A. Grant, Ed.), W.H. Freeman & Co., New York, pp. 77-183 (1992).
3. Gregg B. Fields, Steven A. Carr, Daniel R. Marshak, Alan J. Smith, John T. Stults, Lynn C. Williams, Ken R. Williams, and Janis D. Young. Evaluation of Peptide Synthesis As Practiced in 53 Different Laboratories. *In* "Techniques in Protein Chemistry IV" (R.H. Angeletti, Ed.), Academic Press, Orlando, FL, pp. 229-238 (1993).
4. Gregg B. Fields, Ruth H. Angeletti, Steven A. Carr, Alan J. Smith, John T. Stults, Lynn C. Williams, and Janis D. Young. Variable Success of Peptide-Resin Cleavage and Deprotection Following Solid-Phase Synthesis. *In* "Techniques in Protein Chemistry V" (J.W. Crabb, Ed.), Academic Press, Orlando, FL, pp. 501-507 (1994).

5. Gregg B. Fields. Chapter 2: Methods for Removing the Fmoc Group. *In* "Methods in Molecular Biology, Vol. 35: Peptide Synthesis Protocols" (M.W. Pennington and B.M. Dunn, Eds.), Humana Press, Totowa, NJ, pp. 17-27 (1994).
6. Cynthia G. Fields and Gregg B. Fields. Chapter 3: Solvents for Solid-Phase Peptide Synthesis. *In* "Methods in Molecular Biology, Vol. 35: Peptide Synthesis Protocols" (M.W. Pennington and B.M. Dunn, Eds.), Humana Press, Totowa, NJ, pp. 29-40 (1994).
7. Gregg B. Fields, Ruth H. Angeletti, Lynda F. Bonewald, William T. Moore, Alan J. Smith, John T. Stults, and Lynn C. Williams. Correlation of Cleavage Techniques With Side-Reactions Following Solid-Phase Peptide Synthesis. *In* "Techniques in Protein Chemistry VI" (J.W. Crabb, Ed.), Academic Press, Orlando, FL, pp. 539-546 (1995).
8. Ruth H. Angeletti, Lisa Bibbs, Lynda F. Bonewald, Gregg B. Fields, John S. McMurray, William T. Moore, and John T. Stults. Formation of a Disulfide Bond in an Octreotide-Like Peptide: A Multicenter Study. *In* "Techniques in Protein Chemistry VII" (D.R. Marshak, Ed.), Academic Press, Orlando, FL, pp. 261-274 (1996).
9. Gregg B. Fields (Ed.). Collagen-Model Synthetic Peptides. *Biopolymers (Peptide Science: Comprehensive Reports & Reviews)* **40**(4), 343-416. John Wiley & Sons, San Diego, CA (1996).
10. Kevin H. Mayo and Gregg B. Fields. Peptides As Models For Understanding Protein Folding. *In* "Advances in Molecular and Cell Biology, Volume 22B: Protein Structural Biology in Biomedical Research" (N.M. Allewell and C. Woodward, Eds.), JAI Press Inc., Greenwich, CT, pp. 567-612 (1997).
11. Ruth H. Angeletti, Lisa Bibbs, Lynda F. Bonewald, Gregg B. Fields, Jeffery W. Kelly, John S. McMurray, William T. Moore, and Susan T. Weintraub. Analysis of Racemization During "Standard" Solid Phase Peptide Synthesis: A Multicenter Study. *In* "Techniques in Protein Chemistry VIII" (D.R. Marshak, Ed.), Academic Press, Orlando, FL, pp. 875-890 (1997).
12. Gregg B. Fields (Ed.). Solid-Phase Peptide Synthesis. *Methods In Enzymology* **289**, Academic Press, Orlando, FL (1997).
13. Gregg B. Fields. Introduction to Peptide Synthesis. *In* "Current Protocols in Protein Science" (J.E. Coligan, B. Dunn, H.L. Ploegh, D.W. Speicher, and P.T. Wingfield, Eds.), John Wiley & Sons, Inc., New York, pp. 18.1.1-18.1.7 (1997).
14. Gregg B. Fields. Chapter 43: Solid-Phase Peptide Synthesis. *In* "Molecular Biomethods Handbook" (R. Rapley and J.M. Walker, Eds.), Humana Press, Totowa, NJ, pp. 527-545 (1998).
15. Janelle L. Lauer and Gregg B. Fields. Chapter 3: Design and Use of Synthetic Peptides as Biological Models. *In* "Proteins: Analysis and Design" (R.H. Angeletti, Ed.), Academic Press, Orlando, FL, pp. 207-257 (1998).
16. Henriette A. Remmer and Gregg B. Fields. Chemical Synthesis of Peptides. *In* "Peptide and Protein Drug Analysis (Drugs And The Pharmaceutical Sciences, Volume 101)" (R.E. Reid, Ed.), Marcel Dekker, New York, pp. 133-169 (1999).
17. Pilar Fornes and Gregg B. Fields. The Solid Support. *In* "Solid-Phase Synthesis: A Practical Guide" (S.A. Kates and F. Albericio, Eds.), Marcel Dekker, New York, pp. 1-77 (2000).
18. Gregg B. Fields. Using Fluorogenic Peptide Substrates to Assay Matrix Metalloproteinases. *In* "Methods in Molecular Biology, vol. 151: Matrix Metalloproteinase Protocols" (I.M. Clark, Ed.), Humana Press, Totowa, NJ, pp. 495-518 (2000).
19. Gregg B. Fields, James P. Tam, and George Barany (Eds.). Peptides for the New Millennium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN). Kluwer Academic Publishers, Dordrecht, The Netherlands (2000).
20. Gregg B. Fields, Janelle L. Lauer-Fields, Rong-qiang Liu, and George Barany. Principles and Practice of Solid-Phase Peptide Synthesis. *In* "Synthetic Peptides: A User's Guide, 2nd Edition" (G.A. Grant, Ed.), W.H. Freeman & Co., New York, pp. 93-219 (2001).
21. Gregg B. Fields. Introduction to Peptide Synthesis. *In* "Current Protocols in Protein Science" (J.E. Coligan, B. Dunn, H.L. Ploegh, D.W. Speicher, and P.T. Wingfield, Eds.), John Wiley & Sons, Inc., New York, pp. 18.1.1-18.1.9 (2001).
22. Gregg B. Fields. Introduction to Peptide Synthesis. *In* "Current Protocols in Immunology" (J.E. Coligan, A.M. Kruisbeek, D.H. Margulies, E.M. Shevach, and W. Strober, Eds.), John Wiley & Sons, Inc., New York, pp. 9.1.1-9.1.9 (2002).
23. Gregg B. Fields, Pilar Fornes, Katarzyna Pisarewicz, and Janelle L. Lauer-Fields. Peptide-Amphiphile Induction of α -Helical and Triple-Helical Structures. *In* "Synthetic Macromolecules With Higher Structural Order: ACS Symposium Series 812" (I.M. Khan, Ed.), American Chemical Society, Washington, D.C., pp. 117-129 (2002).
24. Sarah E. Ochsenhirt, Matthew Tirrell, Gregg B. Fields, and Angela K. Dillow. Use of Supported Thin Films of Peptide Amphiphiles as Model Systems of the Extracellular Matrix to Study the Effects of Structure-Function Phenomena on Cell Adhesion. *In* "Biomimetic Materials and Design: Biointerfacial Strategies, Tissue Engineering,

- and Targeted Drug Delivery” (A.K. Dillow and A.M. Lowman, Eds.), Marcel Dekker, Inc., New York, NY, pp. 1-27 (2002).
25. Gregg B. Fields. Introduction to Peptide Synthesis. *In* “Current Protocols in Molecular Biology” (F.M. Ausubel, R. Brent, R.E. Kingston, D.D. Moore, J.G. Seidman, J.A. Smith, and K. Struhl, Eds.), John Wiley & Sons, Inc., New York, pp. 11.15.1-11.15.9 (2002).
 26. Janelle L. Lauer-Fields and Gregg B. Fields. Synthesis of Peptide Polymers. *In* “Houben-Weyl Volume E22d: Synthesis of Peptides and Peptidomimetics” (M. Goodman, A. Felix, L. Moroder, and C. Toniolo, Eds.), Georg Thieme Verlag, Stuttgart, Germany, pp. 169-198 (2003).
 27. Gregg B. Fields (Ed.). Peptide Characterization and Application Protocols. *Methods in Molecular Biology* **386**, Humana Press, Totowa, NJ (2007).
 28. Janelle L. Lauer-Fields, Dmitriy Minond, Keith Brew, and Gregg B. Fields. Application of Topologically Constrained Mini-Proteins as Ligands, Substrates, and Inhibitors. *In* “Methods in Molecular Biology, vol. 386: Peptide Characterization and Application Protocols (G.B. Fields, Ed.), Humana Press, Totowa, NJ, pp. 125-166 (2007).
 29. Diane Baronas-Lowell, Janelle L. Lauer-Fields, Mohammad Al-Ghoul, and Gregg B. Fields. Proteolytic Profiling of the Extracellular Matrix Degradome. *In* “Methods in Molecular Biology, vol. 386: Peptide Characterization and Application Protocols (G.B. Fields, Ed.), Humana Press, Totowa, NJ, pp. 167-202 (2007).
 30. Evonne M. Rezler, David R. Khan, Raymond Tu, Matthew Tirrell, and Gregg B. Fields. Peptide-Mediated Targeting of Liposomes to Tumor Cells. *In* “Methods in Molecular Biology, vol. 386: Peptide Characterization and Application Protocols (G.B. Fields, Ed.), Humana Press, Totowa, NJ, pp. 269-298 (2007).
 31. Mare Cudic and Gregg B. Fields. Solid-Phase Peptide Synthesis. *In* “Molecular Biomethods Handbook, 2nd Edition” (J.M. Walker and R. Rapley, Eds.), Human Press, Totowa, NJ, pp. 515-546 (2008).
 32. Gregg B. Fields. Protease-activated delivery and imaging systems. *In* “The Cancer Degradome – Proteases in Cancer Biology” (D. Edwards, G. Hoyer-Hansen, F. Blasi, and B. Sloane, Eds.), Springer, New York, pp. 827-851 (2008).
 33. Gregg B. Fields. Using Fluorogenic Peptide Substrates to Assay Matrix Metalloproteinases. *In* “Methods in Molecular Biology, vol. 622: Matrix Metalloproteinase Protocols, 2nd Edition” (I.M. Clark, Ed.), Humana Press, Totowa, NJ, pp. 393-433 (2010).
 34. Janelle L. Lauer and Gregg B. Fields. Collagen in Cancer. *In* “The Tumor Microenvironment” (R.G. Bagley, Ed.), Springer Science + Business Media LLC, New York, NY, pp. 477-507 (2010).
 35. Maciej Stawikowski and Gregg B. Fields. Introduction to Peptide Synthesis. *In* “Current Protocols in Protein Science” (J.E. Coligan, B. Dunn, H.L. Ploegh, D.W. Speicher, and P.T. Wingfield, Eds.), John Wiley & Sons, Inc., New York, pp. 18.1.1-18.1.13 (2012).
 36. Manishabrata Bhowmick and Gregg B. Fields. Stabilization of Triple-Helical Peptides for *In Vivo* Applications. *In* “Methods in Molecular Biology, vol. 1081: Peptide Modifications to Increase Metabolic Stability and Activity” (P. Cudic, Ed.), Humana Press, Totowa, NJ, pp. 167-194 (2013).
 37. Gregg B. Fields. Biophysical studies of matrix metalloproteinase/triple-helix complexes. *In* “Advances in Protein Chemistry and Structural Biology, Volume 97: Metal-containing Enzymes” (C. Christov, Ed.), Elsevier, Inc., London, pp. 37-48 (2014).
 38. Anna Knapinska, Sabrina Amar, Trista K. Robichaud, and Gregg B. Fields. Peptide-Based Inhibitors of Enzymes. *In* “Peptide Chemistry and Drug Design” (B.M. Dunn, Ed.), John Wiley & Sons, Inc., New York, pp. 113-156 (2015).
 39. Maciej Stawikowski and Gregg B. Fields. MMPs: From Structure to Function. *In* “MMP Biology: From Biological Mechanisms to Therapeutic Opportunities” (J. Gaffney and I. Sagi, Eds.), John Wiley & Sons, Inc., New York, pp. 1-22 (2015).
 40. Gregg B. Fields and Maciej J. Stawikowski. Imaging Matrix Metalloproteinase Activity Implicated in Breast Cancer Progression. *In* “Methods in Molecular Biology, vol. 1406: Breast Cancer Methods and Protocols” (J. Cao, Ed.), Humana Press, Totowa, NJ, pp. 303-329 (2016).
 41. Anna M. Knapinska, Christie-Anne Estrada, and Gregg B. Fields. The roles of matrix metalloproteinases in pancreatic cancer. *In* “Progress in Molecular Biology and Translational Science, Volume 148 (Matrix Metalloproteinases and Tissue Remodeling in Health and Disease: Target Tissues and Therapy)” (R.A. Khalil, Ed.), Academic Press/Elsevier, Inc., London, pp. 339-354 (2017).
 42. Tatyana G. Karabencheva-Christova, Christo Z. Christov, and Gregg B. Fields. Collagenolytic matrix metalloproteinase structure-function relationships: insights from molecular dynamics studies. *In* “Advances in Protein Chemistry and Structural Biology, Volume 109: Structural and Mechanistic Enzymology” (T. Karabencheva-Christova, Ed.), Elsevier, Inc., London, pp. 1-24 (2017).

43. Maciej Stawikowski, Anna M. Knapinska, and Gregg B. Fields. Determining the Substrate Specificity of Matrix Metalloproteases using Fluorogenic Peptide Substrates. *In* "Methods in Molecular Biology, vol. 1579: Matrix Metalloproteinases Methods and Protocols" (C.A. Galea, Ed.), Humana Press, Totowa, NJ, pp. 137-183 (2017).
44. Gregg B. Fields. Collagen-based Peptides as Inhibitors. *In* "Methods in Molecular Biology vol. 1944: Collagen" (I. Sagi and N. Afratis, Eds.), Humana Press, Totowa, NJ, pp. 229-252 (2019).
45. Anna M. Knapinska, Gary Drotleff, Cedric Chai, Destiny Twohill, Alexa Ernce, Isabella Grande, Michelle Rodríguez, Dorota Tokmina-Roszyk, Lillian Onwuha-Ekpete, Brad Larson, and Gregg B. Fields. Analysis of Matrix Metalloproteinase Activity and Inhibition in Cancer Spheroids. *In* "Methods in Molecular Biology: Proteases and Cancer" (S. Santamaria, Ed.), Springer Nature, Basingstoke, UK, invited chapter, in preparation (2022).

BOOK CHAPTERS - PROCEEDINGS

1. Gregg B. Fields, Kenneth M. Otteson, Cynthia G. Fields, and Richard L. Noble. The Versatility of Solid Phase Peptide Synthesis. *In* "Innovation and Perspectives in Solid Phase Synthesis - Peptides, Polypeptides and Oligonucleotides, Macro-organic Reagents and Catalysts (Collected Papers, First International Symposium, August 29 - September 2, 1989, Oxford, England)" (R. Epton, Ed.), Solid Phase Conference Coordination, Ltd., Birmingham, U.K., pp. 241-260 (1990).
2. Cynthia G. Fields and Gregg B. Fields. New approaches to prevention of side reactions in Fmoc solid-phase peptide synthesis. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Eleventh American Peptide Symposium, July 9-14, 1989, La Jolla, CA)" (J.E. Rivier and G.R. Marshall, Eds.), Escom, Leiden, The Netherlands, pp. 928-930 (1990).
3. Gregg B. Fields and Cynthia G. Fields. Thermodynamic considerations of solid-phase peptide synthesis. *In* "Peptides 1990 (Proceedings of the Twenty-First European Peptide Symposium, September 2-8, 1990, Platja d'Aro, Spain)" (E. Giralt and D. Andreu, Eds.), Escom, Leiden, The Netherlands, pp. 120-121 (1991).
4. Gregg B. Fields and Cynthia G. Fields. Optimization Strategies for Fmoc Solid Phase Peptide Synthesis: Synthesis of Triple-Helical Collagen-Model Peptides. *In* "Innovation and Perspectives in Solid Phase Synthesis - Peptides, Polypeptides and Oligonucleotides - 1992 (Proceedings of the Second International Symposium on Innovation and Perspectives in Solid Phase Synthesis and Related Technologies, August 27-31, 1991, Canterbury, England)" (R. Epton, Ed.), Intercept, Andover, U.K., pp. 153-162 (1992).
5. Gregg B. Fields, Darwin O.V. Alonso, Dirk Stigter, and Ken A. Dill. Theory for protein aggregation. *In* "Peptides: Chemistry and Biology (Proceedings of the Twelfth American Peptide Symposium, June 16-21, 1991, Cambridge, MA)" (J.A. Smith and J.E. Rivier, Eds.), Escom, Leiden, The Netherlands, pp. 200-202 (1992).
6. George Barany, Fernando Albericio, Sara Biancalana, Susan L. Bontems, Jane L. Chang, Ramon Eritja, Marc Ferrer, Cynthia G. Fields, Gregg B. Fields, Matthew H. Lyttle, Nuria A. Solé, Zhenping Tian, Robert J. Van Abel, Peter B. Wright, Samuel Zalipsky, and Derek Hudson. Biopolymer syntheses on novel polyethylene glycol-polystyrene (PEG-PS) graft supports. *In* "Peptides: Chemistry and Biology (Proceedings of the Twelfth American Peptide Symposium, June 16-21, 1991, Cambridge, MA)" (J.A. Smith and J.E. Rivier, Eds.), Escom, Leiden, The Netherlands, pp. 603-604 (1992).
7. James B. McCarthy, Daniel J. Mickelson, Cynthia G. Fields, and Gregg B. Fields. The use of collagen model peptides to correlate collagen primary and secondary structural effects with the mechanisms of tumor cell adhesion, motility, and invasion. *In* "Peptides 1992 (Proceedings of the Twenty-Second European Peptide Symposium, September 13-19, 1992, Interlaken, Switzerland)" (C.H. Schneider and A.N. Eberle, Eds.), Escom, Leiden, The Netherlands, pp. 109-110 (1993).
8. Fernando Albericio, George Barany, Gregg B. Fields, Derek Hudson, Steven A. Kates, Matthew H. Lyttle, and Nuria A. Solé. Allyl-based orthogonal solid-phase peptide synthesis. *In* "Peptides 1992 (Proceedings of the Twenty-Second European Peptide Symposium, September 13-19, 1992, Interlaken, Switzerland)" (C.H. Schneider and A.N. Eberle, Eds.), Escom, Leiden, The Netherlands, pp. 191-193 (1993).
9. Cynthia G. Fields and Gregg B. Fields. Edman degradation sequence analysis of resin-bound peptides: Characterization of unusual and side-chain protected PTH-amino acids. *In* "Peptides 1992 (Proceedings of the Twenty-Second European Peptide Symposium, September 13-19, 1992, Interlaken, Switzerland)" (C.H. Schneider and A.N. Eberle, Eds.), Escom, Leiden, The Netherlands, pp. 447-448 (1993).
10. Cynthia G. Fields and Gregg B. Fields. Three-dimensional orthogonal solid-phase synthesis of cell-adhesive, triple-helical collagen-model peptides. *In* "Peptide Chemistry 1992 (Proceedings of the Second Japan Symposium on Peptide Chemistry, November 9-13, 1992, Shizuoka, Japan)" (N. Yanaihara, Ed.), Escom, Leiden, The Netherlands, pp. 14-18 (1993).
11. J.B. McCarthy, J.R. Knutson, D.J. Mickelson, C.G. Fields, and G.B. Fields. The identification of essential structural components for melanoma cell adhesion, spreading and motility on basement membrane collagen. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Thirteenth American Peptide Symposium, June

- 20-25, 1993, Edmonton, Alberta, Canada)" (R.S. Hodges and J.A. Smith, Eds.), Escom, Leiden, The Netherlands, pp. 362-364 (1994).
12. C.G. Fields, C.M. Lovdahl, A.J. Miles, V.L. Matthias Hagen, and G.B. Fields. Synthesis and characterization of triple-helical 'mini-collagens'. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Thirteenth American Peptide Symposium, June 20-25, 1993, Edmonton, Alberta, Canada)" (R.S. Hodges and J.A. Smith, Eds.), Escom, Leiden, The Netherlands, pp. 1043-1044 (1994).
 13. J.D. Young, R.H. Angeletti, S.A. Carr, D.R. Marshak, A.J. Smith, J.T. Stults, L.C. Williams, K.R. Williams, and G.B. Fields. Multi-year, multi-center evaluation of automated solid-phase peptide synthesis. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Thirteenth American Peptide Symposium, June 20-25, 1993, Edmonton, Alberta, Canada)" (R.S. Hodges and J.A. Smith, Eds.), Escom, Leiden, The Netherlands, pp. 1088-1090 (1994).
 14. Cynthia G. Fields and Gregg B. Fields. Accounts of Fmoc Solid Phase Syntheses of Tryptophan-Containing Peptides. *In* "Innovation and Perspectives in Solid Phase Synthesis, 1994 - Biological and Biomedical Applications (Proceedings of the Third International Symposium on Innovation and Perspectives in Solid Phase Synthesis and Complementary Technologies, August 31 - September 4, 1993, Oxford, England)" (R. Epton, Ed.), Mayflower Worldwide, Birmingham, U.K., pp. 251-256 (1994).
 15. Cynthia G. Fields and Gregg B. Fields. The Use of Synthetic Peptides for Defining Pathological and Normal Cell Interactions with the Extracellular Matrix. *In* "Innovation and Perspectives in Solid Phase Synthesis, 1994 - Biological and Biomedical Applications (Proceedings of the Third International Symposium on Innovation and Perspectives in Solid Phase Synthesis and Complementary Technologies, August 31 - September 4, 1993, Oxford, England)" (R. Epton, Ed.), Mayflower Worldwide, Birmingham, U.K., pp. 403-408 (1994).
 16. Aristidis Charonis, Nitsa Koliakos, George Koliakos, Effie Tsilibary, Gregg Fields, Lorrel Regger, Carrie Lynch, Mark Speeman, Anne Hunter, and Howard Higson. A Novel Laminin Domain Involved in Adhesion of Endothelial Cells. *In* "Angiogenesis: Molecular Biology, Clinical Aspects (Proceedings of a NATO Advanced Study Institute on Angiogenesis, June 16-27, 1993, Rhodes, Greece), NATO ASI Series A: Life Sciences, Vol. 263" (M. Maragoudakis, P.M. Gullino and P.I. Lelkes, Eds.), Plenum Press, New York, pp. 119-123 (1994).
 17. Andrew J. Miles and Gregg B. Fields. Synthetic peptide analysis of conformationally dependent and independent tumor cell adhesion sites in collagen. *In* "Peptides 1994 (Proceedings of the Twenty-Third European Peptide Symposium, September 4-10, 1994, Braga, Portugal)" (H.L.S. Maia, Ed.), Escom, Leiden, The Netherlands, pp. 109-110 (1995).
 18. G.B. Fields, L. Bibbs, L.F. Bonewald, J.S. McMurray, W.T. Moore, A.J. Smith, J.T. Stults, L.C. Williams, and R.H. Angeletti. Multi-center Study of Post-assembly Problems in Solid Phase Peptide Synthesis. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Fourteenth American Peptide Symposium, June 18-23, 1995, Columbus, OH)" (P.T.P. Kaumaya and R.S. Hodges, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 52-54 (1996).
 19. A.J. Miles, J.R. Knutson, A.P.N. Skubitz, J.B. McCarthy, L.T. Furcht, and G.B. Fields. Analysis of Integrins That Mediate Cell Adhesion to $\alpha 1(\text{IV})531-543$ in Collagen. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Fourteenth American Peptide Symposium, June 18-23, 1995, Columbus, OH)" (P.T.P. Kaumaya and R.S. Hodges, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 368-369 (1996).
 20. W.D. Branton, Y. Zhou, C.G. Fields, and G.B. Fields. Synthetic Approaches for the Structural Characterization of a Novel Family of Proteolipid Spider Toxins. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Fourteenth American Peptide Symposium, June 18-23, 1995, Columbus, OH)" (P.T.P. Kaumaya and R.S. Hodges, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 424-426 (1996).
 21. Y.-C. Yu, P. Berndt, M. Tirrell, and G.B. Fields. Study of Triple-helical Structure Using Peptide-amphiphiles. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Fourteenth American Peptide Symposium, June 18-23, 1995, Columbus, OH)" (P.T.P. Kaumaya and R.S. Hodges, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 515-516 (1996).
 22. C.G. Fields, B. Grab, and G.B. Fields. Analysis of Complex Synthetic Polypeptides: Confirming the Identity and Purity of Synthetic 'Mini-collagens'. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Fourteenth American Peptide Symposium, June 18-23, 1995, Columbus, OH)" (P.T.P. Kaumaya and R.S. Hodges, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 597-598 (1996).
 23. B. Grab, L.T. Furcht, and G.B. Fields. Structure-activity Studies of Collagen: Chemical Synthesis and Cellular Interactions of Collagen Type I Related Sequences. *In* "Peptides: Chemistry, Structure and Biology (Proceedings of the Fourteenth American Peptide Symposium, June 18-23, 1995, Columbus, OH)" (P.T.P. Kaumaya and R.S. Hodges, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 603-604 (1996).
 24. Gregg B. Fields and Michael W. Pennington. Design of Selective, Fluorogenic Substrates for Members of the Matrix Metalloproteinase Family. *In* "Innovation and Perspectives in Solid Phase Synthesis & Combinatorial

- Libraries, 1996 (Proceedings of the Fourth International Symposium on Innovation and Perspectives in Solid Phase Synthesis and Complementary Technologies, September 12-16, 1995, Edinburgh, Scotland)" (R. Epton, Ed.), Mayflower Scientific, Birmingham, U.K., pp. 285-290 (1997).
25. Ruth Hogue Angeletti, Lisa Bibbs, Lynda F. Bonewald, Gregg B. Fields, Jeffery W. Kelly, John S. McMurray, William T. Moore, and Susan T. Weintraub. A Multicenter Study of Racemization During "Standard" Solid Phase Peptide Synthesis. *In* "Peptides 1996 (Proceedings of the Twenty-Fourth European Peptide Symposium, September 8-13, 1996, Edinburgh, Scotland)" (R. Ramage and R. Epton, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 207-208 (1998).
 26. J.L. Lauer, L. T. Furcht, and G.B. Fields. Integrin Mediation of Tumor Cell Interactions With Type IV Collagen: Synthetic Peptide Approaches for Dissecting Pre- and Post-Adhesion Signal Transduction. *In* "Peptides 1996 (Proceedings of the Twenty-Fourth European Peptide Symposium, September 8-13, 1996, Edinburgh, Scotland)" (R. Ramage and R. Epton, Eds.), Mayflower Scientific Limited, West Midlands, U.K., pp. 569-570 (1998).
 27. Curtis B. Herbert, Claire L. Hypolite, Terri L. McLernon, Gregg B. Fields, Paul C. Letourneau, and Wei-Shou Hu. Cell Behavior on Gradients of Biomolecules Photoimmobilized on Self Assembled Monolayers. *In* "Topic Conference on Biomaterials, Carriers for Drug Delivery and Scaffolds for Tissue Engineering (Proceedings of the American Institute of Chemical Engineers 1997 Annual Meeting, November 16-21, 1997, Los Angeles, CA)" (N.A. Peppas, Ed.), American Institute of Chemical Engineers, New York, paper 46B (1998).
 28. W.B. Edwards, C.J. Anderson, G.B. Fields, and M.J. Welch. Evaluation of Collagen-Based Peptides as Imaging Agents for $\alpha 3\beta 1$ Integrin. *In* "Technetium, Rhenium and Other Metals in Chemistry and Nuclear Medicine 5 (Proceedings of the Fifth International Symposium on Technetium in Chemistry and Nuclear Medicine, September 6-9, 1998, Bressanone, Italy)" (M. Nicolini and U. Mazzi, Eds.), Servizi Grafici, Padova, Italy, pp. 527-531 (1999).
 29. Henriette A. Remmer and Gregg B. Fields. Problems Encountered With the Synthesis Of a Glycosylated Hydroxylysine Derivative Suitable for Fmoc-Solid Phase Peptide Synthesis. *In* "Peptides: Frontiers of Peptide Science (Proceedings of the Fifteenth American Peptide Symposium, June 14-19, 1997, Nashville, TN)" (J.P. Tam and P.T.P. Kaumaya, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 287-288 (1999).
 30. Janelle L. Lauer and Gregg B. Fields. Tumor Cell Interactions With Type IV Collagen: Synthetic Peptide Dissection of Post-Adhesion Signal Transduction Mechanisms. *In* "Peptides: Frontiers of Peptide Science (Proceedings of the Fifteenth American Peptide Symposium, June 14-19, 1997, Nashville, TN)" (J.P. Tam and P.T.P. Kaumaya, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 523-525 (1999).
 31. Kathleen A. Tuzinski, Hideaki Nagase, and Gregg B. Fields. Matrix Metalloproteinase Hydrolysis of Triple-Helical Peptide Models of Interstitial Collagens. *In* "Peptides: Frontiers of Peptide Science (Proceedings of the Fifteenth American Peptide Symposium, June 14-19, 1997, Nashville, TN)" (J.P. Tam and P.T.P. Kaumaya, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 743-744 (1999).
 32. Janelle L. Lauer and Gregg B. Fields. Protein-Like Molecular Structure: Synthesis and Application for Inducing Cellular Receptor Binding and Signal Transduction. *In* "Innovation and Perspectives in Solid Phase Synthesis & Combinatorial Chemical Libraries, 1998 (Proceedings of the Fifth International Symposium on Solid Phase Synthesis & Combinatorial Chemical Libraries, September 2-6, 1997, London, England)" (R. Epton, Ed.), Mayflower Scientific Limited, West Midlands, U.K., pp. 185-188 (1999).
 33. George Barany and Gregg B. Fields. Preface. *In* "Peptides for the New Millenium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. xxxv-xli (2000).
 34. Pilar Fornas and Gregg B. Fields. Induction of α -helical protein-like molecular architecture by mono- and dialkyl hydrocarbon chains. *In* "Peptides for the New Millenium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 300-301 (2000).
 35. Janelle L. Lauer-Fields, Hideaki Nagase, and Gregg B. Fields. Selective hydrolysis of triple-helical peptides by matrix metalloproteinases. *In* "Peptides for the New Millennium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 342-343 (2000).
 36. Yoav Dori, Havazelet Bianco-Peled, Sushil K. Satja, Gregg B. Fields, James B. McCarthy, and Matthew Tirrell. Creating functional collagen peptide architectures on solid surfaces. *In* "Peptides for the New Millennium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 361-363 (2000).
 37. Angela K. Dillow, Gregg B. Fields, Effrosini Kokkoli, James B. McCarthy, Sarah E. Ochsenhirt, and Matt Tirrell. Relating peptide presentation and biological response through supported films of peptide amphiphiles. *In* "Peptides for the New Millennium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1,

- 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 628-629 (2000).
38. Jeffrey A. Borgia, Theodore R. Oegema, Jr., and Gregg B. Fields. Synthesis and application of a glycopeptide derived from the proteoglycan linkage structure. *In* "Peptides for the New Millennium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 773-774 (2000).
 39. Bruce Merrifield, George Barany, Charles M. Deber, Murray Goodman, Robert S. Hodges, Victor J. Hruby, Tom W. Muir, Robin Offord, Arno F. Spatola, Daniel F. Veber, and Gregg B. Fields. Perspectives for the new peptide millennium. *In* "Peptides for the New Millennium (Proceedings of the Sixteenth American Peptide Symposium, June 26 - July 1, 1999, Minneapolis, MN)" (G.B. Fields, J.P. Tam, and G. Barany, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 797-804 (2000).
 40. Pilar Forn, Ying-Ching Yu, and Gregg B. Fields. Peptide-Amphiphile Protein-Like Architectures: Potential Targeted Therapeutic Agents. *In* "Innovation and Perspectives in Solid Phase Synthesis & Combinatorial Chemical Libraries, 2000 (Proceedings of the Sixth International Symposium on Solid Phase Synthesis & Combinatorial Chemical Libraries, August 31 - September 4, 1999, York, England)" (R. Epton, Ed.), Mayflower Scientific Limited, West Midlands, U.K., pp. 141-144 (2001).
 41. Navdeep B. Malkar and Gregg B. Fields. Synthesis of *N*^ε-(fluoren-9-ylmethoxycarbonyl)-*N*^ε-[(7-methoxycoumarin-4-yl)acetyl]-L-lysine for use in solid-phase synthesis of fluorogenic substrates. *In* "Peptides: The Wave Of The Future (Proceedings of the Seventeenth American Peptide Symposium, June 9-14, 2001, San Diego, CA)" (R.A. Houghton and M. Lebl, Eds.), American Peptide Society, San Diego, CA, pp. 48-49 (2001).
 42. Gregg B. Fields, Janelle L. Lauer-Fields, Thilaka Sriharan, and Hideaki Nagase. Triple-helical peptide analysis of collagenolytic protease activity. *In* "Peptides: The Wave Of The Future (Proceedings of the Seventeenth American Peptide Symposium, June 9-14, 2001, San Diego, CA)" (R.A. Houghton and M. Lebl, Eds.), American Peptide Society, San Diego, CA, pp. 975-977 (2001).
 43. Navdeep B. Malkar, Neal Niemczyk, and Gregg B. Fields. Peptide-amphiphile induction of α -helical protein-like molecular architecture and interaction with biomaterial surfaces. *In* "Peptides: The Wave Of The Future (Proceedings of the Seventeenth American Peptide Symposium, June 9-14, 2001, San Diego, CA)" (R.A. Houghton and M. Lebl, Eds.), American Peptide Society, San Diego, CA, pp. 1063-1064 (2001).
 44. G.B. Fields, T. Sriharan, and J. Lauer-Fields. Conformationally Constrained Templates for Dissecting Collagenolytic Activity and Designing Selective Metalloproteinase Substrates. *In* "Transactions of the 48th Annual Meeting of the Orthopaedic Research Society, February 10-13, 2002, Dallas, TX" (R.B. Martin, Ed.), Orthopaedic Research Society, Chicago, IL, 0434.
 45. J. Borgia, M. Al-Ghoul, and G. Fields. Modulation of Matrix Metalloproteinase Expression in Melanoma Cells Exposed to "Mini-Collagen" Substrates. *In* "Transactions of the 48th Annual Meeting of the Orthopaedic Research Society, February 10-13, 2002, Dallas, TX" (R.B. Martin, Ed.), Orthopaedic Research Society, Chicago, IL, 0763.
 46. J. Lauer-Fields, J. Borgia, and G.B. Fields. Glycosylation of Mini-Collagen Modulates Melanoma Cell Adhesion, Spreading, and Metalloproteinase Production. *In* "Transactions of the 48th Annual Meeting of the Orthopaedic Research Society, February 10-13, 2002, Dallas, TX" (R.B. Martin, Ed.), Orthopaedic Research Society, Chicago, IL, 0764.
 47. David Mora, Fred C. Pflueger, Katarzyna Pisarewicz, Gregg B. Fields, and Frank Mari. A novel post-translational modification: A conopeptide from *Conus gladiator* provides the first example of γ -Hydroxyvaline (H_γv) within a polypeptide chain. *In* "Peptide Revolution: Genomics, Proteomics & Therapeutics (Proceedings of the Eighteenth American Peptide Symposium, July 19-23, 2003, Boston, MA)" (M. Chorev and T.K. Sawyer, Eds.), American Peptide Society, San Diego, CA, pp. 95-97 (2004).
 48. Janelle L. Lauer-Fields, Mohammad Al-Ghoul, Diane Baronas-Lowell, Jeffrey A. Borgia, and Gregg B. Fields. Triple-helical peptide ligand dissection of unique melanoma cell signaling pathways. *In* "Peptide Revolution: Genomics, Proteomics & Therapeutics (Proceedings of the Eighteenth American Peptide Symposium, July 19-23, 2003, Boston, MA)" (M. Chorev and T.K. Sawyer, Eds.), American Peptide Society, San Diego, CA, pp. 350-352 (2004).
 49. David Khan, Evonne Rezler, Janelle Lauer-Fields, Diane Baronas-Lowell, and Gregg Fields. Targeted drug delivery utilizing a mini-collagen ligand recognized by CD44/CSPG melanoma receptors. *Controlled Release Society 32nd Annual Meeting & Exposition Transactions, Controlled Release Society, Minneapolis, MN, #282A1-2* (2005).
 50. Mare Cudic, Janelle L. Lauer-Fields, and Gregg B. Fields. Improved synthesis of 5-hydroxylysine (Hyl) derivatives. *In* "Understanding Biology Using Peptides (Proceedings of the Nineteenth American Peptide Symposium, June 18-23, 2005, San Diego, CA)" (S.E. Blondelle, Ed.), American Peptide Society, San Diego, CA, pp. 303-304 (2006).

51. Janelle L. Lauer-Fields, Dmitriy Minond, Diane Baronas-Lowell, Michael J. Chalmers, Scott A. Busby, Patrick R. Griffin, Hideaki Nagase, and Gregg B. Fields. Target-Based Proteolytic Profiling for Characterizing Cancer Progression. In "Understanding Biology Using Peptides (Proceedings of the Nineteenth American Peptide Symposium, June 18-23, 2005, San Diego, CA)" (S.E. Blondelle, Ed.), American Peptide Society, San Diego, CA, pp. 315-319 (2006).
52. John K. Whitehead, Shunzi Li, LaKeisha N. Myles, Robert P. Hammer, and Gregg B. Fields. Synthesis of a Phosphino Triple Helical Collagen Mimic. In "Understanding Biology Using Peptides (Proceedings of the Nineteenth American Peptide Symposium, June 18-23, 2005, San Diego, CA)" (S.E. Blondelle, Ed.), American Peptide Society, San Diego, CA, pp. 633-634 (2006).
53. Mare Cudic, Frank Mari, and Gregg B. Fields. Synthesis and solid-phase application of suitably protected γ -hydroxyvaline building blocks. In "Peptides for Youth - Proceedings of the Twentieth American Peptide Symposium, June 25-30, 2007, Montreal, Canada (Advances in Experimental Medicine and Biology, Volume 611)" (E. Escher, W.D. Lubell, and S. Del Valle, Eds.), Springer, New York, pp. 523-524 (2009).
54. Philip P. Cheney, Gregg B. Fields, Samuel Achilefu, and W. Barry Edwards. Characterization of quenched fluorescent triple helical peptides for MMP-2 and MMP-9 optical imaging. In "Proceedings of the International Society of Optical Engineering (SPIE), Volume 7190: Reporters, Markers, Dyes, Nanoparticles, and Molecular Probes for Biomedical Applications" (S. Achilefu and R. Raghavachari, Ed.), SPIE, Bellingham, WA, 719011-719018 (2009).
55. Gregg B. Fields. Message From the President of the American Peptide Society. In "Peptides: Breaking Away (Proceedings of the Twenty-First American Peptide Symposium)" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, p. ix (2009).
56. Janelle L. Lauer-Fields and Gregg B. Fields. Development of Selective, Exosite Binding Matrix Metalloproteinase (MMP) Inhibitors. In "Peptides: Breaking Away (Proceedings of the Twenty-First American Peptide Symposium)" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, pp. 241-243 (2009).
57. Gregg B. Fields. Message from the President of the American Peptide Society. In "Peptides: Building Bridges (Proceedings of the Twenty-Second American Peptide Symposium)" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, p. ix (2011).
58. Margaret W. Ndinguri and Gregg B. Fields. Effects of Peptide-Amphiphile α 1(IV)1263-1277 on Liposome Stability. In "Peptides: Building Bridges (Proceedings of the Twenty-Second American Peptide Symposium)" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, pp. 166-167 (2011).
59. Manishabrata Bhowmick and Gregg B. Fields. Synthesis of Fmoc-Gly-Ile Phosphinic Pseudodipeptide: An Essential Building Block for Construction of Matrix Metalloproteinase Inhibitors (MMPi). In "Peptides: Building Bridges (Proceedings of the Twenty-Second American Peptide Symposium)" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, pp. 264-265 (2011).
60. S. Amar and G.B. Fields. Production and characterization of matrix metalloproteinases implicated in multiple sclerosis. In "Peptides 2012 (Proceedings of the Thirty-Second European Peptide Symposium)" (G. Kokotos, V. Constantinou-Kokotou, and J. Matsoukas, Eds.), European Peptide Society, Athens, Greece, pp. 102-103 (2012).
61. Mare Cudic, Nina Bionda, Marc Giulianotti, Laura Maida, Richard A. Houghten, Gregg B. Fields, and Dmitriy Minond. TNF α -Based Peptides as Bioprobes for Exosites of ADAM Proteases. In "Peptides Across the Pacific: The Proceedings of the Twenty-Third American and the Sixth International Peptide Symposium" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, pp. 136-137 (2013).
62. S. Pahwa and G.B. Fields. Quantitation of MT1-MMP Activity at the Cell Surface. In "Peptides Across the Pacific: The Proceedings of the Twenty-Third American and the Sixth International Peptide Symposium" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, pp. 168-169 (2013).
63. Maciej J. Stawikowski, Roma Stawikowska, and Gregg B. Fields. Preparation of glycosylated 5-hydroxylysine suitable for SPPS and evaluation of its influence on melanoma interactions with type IV collagen peptides. In "Peptides Across the Pacific: The Proceedings of the Twenty-Third American and the Sixth International Peptide Symposium" (M. Lebl, Ed.), American Peptide Society, Albuquerque, NM, pp. 210-211 (2013).
64. Rachel St. Clair, Michael Teti, Ania Knapinska, Gregg Fields, Elan Barenholtz, and William Hahn. Self-organizing map methodology for sorting differential expression data of MMP-9 inhibition. In "ICMLB 2019: International Conference on Machine Learning and Bioinformatics," World Academy of Science, Engineering and Technology (WASET), Azerbaijan, Turkey, <https://www.biorxiv.org/content/10.1101/586628v1.full.pdf> (2019).

OTHER PUBLICATIONS

1. Saheed Oluwasina Oseni, Olayinka Adebayo, Adeyinka Adebayo, Alexander Kwakye, Mirjana Pavlovic, Waseem Asghar, James Hartmann, Gregg B. Fields, and James Kumi-Diaka. Integrative genomic and epigenomic

analyses identified IRAK1 as a novel target for inflammation-driven prostate tumorigenesis. *bioRxiv* <https://doi.org/10.1101/2021.06.16.447920> (2021).

2. Brad Larson, Anna Knapinska, Gary Drotleff, and Gregg Fields. Combination of a Fluorescent Substrate-Based MMP Activity Assay and Hit Pick Reading/Imaging Procedure: Efficiently screen for inhibitors of MT1-MMP activity and 3D glioma tumoroid invasion. *Agilent Application Note: Cell Migration and Invasion*, 11 pages (2022).

PATENTS

1. Gregg B. Fields. Mild Solid-Phase Synthesis of Aligned, Branched Triple-Helical Peptides. Patent issued November 19, 1996, United States Patent #5,576,419. Licensed for application as an anti-cancer therapeutic by BioStratum, Inc., July 25, 1994.
2. Gregg B. Fields. Mild Solid-Phase Synthesis of Aligned, Branched Triple-Helical Peptides. Patent issued March 10, 1998, United States Patent #5,726,243.
3. Gregg B. Fields, James B. McCarthy, and Leo T. Furcht. Polypeptides With Type I Collagen Activity. Patent issued March 24, 1998, United States Patent #5,731,409.
4. Hideaki Nagase and Gregg B. Fields. Discriminatory Substrates For MMP Hydrolysis. Patent issued June 23, 1998, United States Patent #5,770,691. Licensed by Bachem Biosciences, July 8, 1997, and Peptides International, December 11, 1998. Marketed by Peptide Institute, Inc. (Japan)/Peptides International, Inc. (U.S.A.) as product #3168-v, 1995-present, and Bachem Biosciences as product #M-2110, 1995-present.
5. Gregg B. Fields, and Daniel L. Mooradian. Solid-Phase Method Attaching a Biomolecule to a Substrate Surface With a Photoreactive Crosslinking Agent. Patent issued December 29, 1998, United States Patent #5,853,744.
6. Matthew Tirrell and Gregg B. Fields. Self-Assembling Amphiphiles for Construction of Peptide Secondary Structures. International Publication #WO98/07752, February 26, 1998. Patent issued August 1, 2000, United States Patent #6,096,863.
7. Dmitriy Minond, Marcello Giulianotti, and Gregg B. Fields. Methods for Treating Melanoma Using Small Molecules. International Publication #WO2018/112443, June 21, 2018. Patent issued October 19, 2021, United States Patent #11,149,028.
8. Claudia Zylberberg and Gregg B. Fields. Matrix Metalloproteinases and Uses Thereof. Patent application filed April 5, 2013, application #61/808,861.
9. William R. Roush, Gregg B. Fields, Jun Yong Choi, and Rita Fuerst. Selective Matrix Metalloproteinase-13 Inhibitors. Patent application filed June 6, 2018.
10. Conor Lynch and Gregg B. Fields. Compounds and Methods for Inhibition of Multiple Myeloma. Patent application filed June 28, 2019. International Publication #WO2020/046462, March 5, 2020. United States Patent Application Publication #US2021/0323949, October 21, 2021. Licensed for application as an anti-multiple myeloma therapeutic by SteroTherapeutics, LLC, March 22, 2022.

INVITED SEMINARS AND LECTURES

Research Conferences and International Symposia:

1. "Theory for Protein Aggregation," Twelfth American Peptide Symposium, Massachusetts Institute of Technology, Cambridge, MA, June 18, 1991.
2. "Optimization Strategies for Fmoc Solid-Phase Peptide Synthesis: Synthesis of Triple-Helical Collagen-Model Peptides," Second International Symposium on Innovation and Perspectives in Solid Phase Synthesis and Related Technologies, University of Kent, Canterbury, U.K., August 29, 1991.
3. "Results of the 1992 Peptide Synthesis Study," Seventh Annual Meeting of the Association of Biomolecular Resource Facilities/Satellite Meeting of the Sixth Symposium of the Protein Society, Sheraton Harbor Island Hotel, San Diego, CA, July 25, 1992.
4. "The Use of Collagen Model Peptides to Correlate Collagen Primary and Secondary Structural Effects With the Mechanisms of Tumor Cell Adhesion, Motility, and Invasion," Twenty-Second European Peptide Symposium, Casino Kursaal Congress Center, Interlaken, Switzerland, September 13-19, 1992.
5. "Characterization of Synthetic Peptides by a Variety of Methods Including Mass Spectrometry and Capillary Electrophoresis," Association of Biomolecular Resource Facilities Symposium "Protein Characterization and Synthesis: Results From Analysis of Unknown ABRF Test Peptides," 9th International Conference on Methods in Protein Sequence Analysis, Otsu, Japan, September 20, 1992.
6. "Three-Dimensional Orthogonal Solid-Phase Synthesis of Aligned Triple-Helical Collagen Model Peptides for Study of Cell Adhesion and Motility," Midwestern Connective Tissue Workshop, Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL, October 23, 1992.

7. "The Identification of Essential Amino Acid Residues for Melanoma Cell Adhesion and Spreading on Basement Membrane Collagen," Thirteenth American Peptide Symposium, Edmonton Convention Centre, Edmonton, Alberta, Canada, June 22, 1993.
8. "Multi-Year Evaluation of Automated Solid-Phase Peptide Synthesis," Workshop I: Approaches and Advances in Peptide Synthesis, Purification, and Analysis, Thirteenth American Peptide Symposium, Edmonton Convention Centre, Edmonton, Alberta, Canada, June 25, 1993.
9. "Combining Boc and Fmoc Chemistries for Solid-Phase Protein Synthesis," Peptide Synthesis Workshop, Eighth Annual Meeting of the Association of Biomolecular Resource Facilities/Satellite Meeting of the Seventh Symposium of the Protein Society, Town & Country Convention Center, San Diego, CA, July 24, 1993.
10. "Results of the 1993 Peptide Synthesis Study," Eighth Annual Meeting of the Association of Biomolecular Resource Facilities/Satellite Meeting of the Seventh Symposium of the Protein Society, Town & Country Convention Center, San Diego, CA, July 24, 1993.
11. "The Use of Non-Native and Modified Amino Acids For Defining Collagen-Mediated Biological Activities," Third International Congress on Amino Acids, Peptides and Analogues, University of Vienna, Vienna, Austria, August 26, 1993.
12. "The Use of Synthetic Peptides for Defining Pathological and Normal Cell Interactions with the Extracellular Matrix," Third International Symposium on Innovation and Perspectives in Solid Phase Synthesis & Complementary Technologies: Biological & Biomedical Applications, University of Oxford, Oxford, U.K., September 3, 1993.
13. "Synthesis, Characterization, and Tumor Cell Activities of Triple-Helical 'Mini-Collagens' Incorporating Native Type IV Collagen Sequences," European Molecular Biology Organization (EMBO) Workshop 1993: Coiled-Coils, Collagen & Co-Proteins, Romantikhotel Böglerhof, Alpbach, Austria, September 5-11, 1993.
14. "Purification and Analysis of Synthetic, Triple-Helical 'Mini-Collagens' by Reversed-Phase, Size-Exclusion, and Hydrophobic Interaction HPLC," Thirteenth International Symposium on HPLC of Proteins, Peptides and Polynucleotides, Embarcadero Center Hyatt Regency, San Francisco, CA, December 2, 1993.
15. "Cellular Recognition Processes and Collagen Triple-Helical Conformation," Round Table II: The Search of a Bioactive Conformation, Fourth Naples Workshop On Bioactive Peptides, La Residenza Hotel, Capri, Italy, May 25, 1994.
16. "Incorporation of Posttranslational Modifications Into Synthetic Peptides: Potential Pitfalls and Solutions," Peptide Synthesis Workshop, Ninth Annual Meeting of the Association of Biomolecular Resource Facilities/Satellite Meeting of the Eighth Symposium of the Protein Society, Town & Country Convention Center, San Diego, CA, July 9, 1994.
17. "Results of the 1994 Peptide Synthesis Study," Ninth Annual Meeting of the Association of Biomolecular Resource Facilities/Satellite Meeting of the Eighth Symposium of the Protein Society, Town & Country Convention Center, San Diego, CA, July 9, 1994.
18. "Solvation and Aggregation Effects During Fmoc Solid-Phase Synthesis," Symposium Honoring the Contributions of Dr. R.C. Sheppard to Peptide Science, University of Minho, Braga, Portugal, September 3, 1994.
19. "Synthetic Peptide Analysis of Conformationally Dependent and Independent Tumor Cell Adhesion Sites in Collagen," Twenty Third European Peptide Symposium, Exhibition and Conference Centre, Braga, Portugal, September 4-10, 1994.
20. "Dissecting the Mechanisms of Tumor Cell Motility and Invasion," Sydney Peptide Group Peptech Symposium, Prince Of Wales Medical Research Institute, Sydney, Australia, October 14, 1994.
21. "Synthetic Peptide Approaches for Dissecting Collagen-Mediated Biological Activities," First Australian Peptide Conference: From Discovery to Therapeutics, Daydream Island Resort, Daydream Island, Queensland, Australia, October 18, 1994.
22. "Synthetic Peptides for Biological Studies: Minimizing Peptide Degradation," Peptide Synthesis Workshop, Tenth Annual Meeting of the Association of Biomolecular Resource Facilities/Satellite Meeting of the Ninth Symposium of the Protein Society, John B. Hynes Veterans Memorial Convention Center, Boston, MA, July 8, 1995.
23. "Design Of Selective, Fluorogenic Substrates For Members Of The Matrix Metalloproteinase Family," Fourth International Symposium on Innovation and Perspectives in Solid Phase Synthesis and Complementary Technologies, University of Edinburgh, Edinburgh, Scotland, September 15, 1995.
24. "Peptide Structure And Design," 31st Annual American Chemical Society Western Regional Meeting & 4th Annual San Diego Biotech Exposition, Town & Country Convention Center, San Diego, CA, October 18, 1995.
25. "Cellular Activities of Branched, Triple-Helical Collagen-Model Peptides," 31st Annual American Chemical Society Western Regional Meeting & 4th Annual San Diego Biotech Exposition, Town & Country Convention Center, San Diego, CA, October 18, 1995.

26. "Designing Protein Modules for Cellular Interactions: The Collagen Triple-Helix," Molecular Biophysics Symposium on Protein Folding & Design, University of Minnesota, Earle Brown Center, St. Paul, MN, October 20, 1995.
27. "Promotion of Fibroblast Adhesion by Triple-Helical Peptide Models of Type I Collagen-Derived Sequences," Sixth International Conference on the Molecular Biology and Pathology of Matrix, Thomas Jefferson University, Philadelphia, PA, June 17, 1996.
28. "Tumor Cell Interactions With Type IV Collagen: Synthetic Peptide Dissection of Post-Adhesion Signal Transduction Mechanisms," Twenty Second Annual Lorne Conference On Protein Structure And Function, Lorne, Australia, February 13, 1997.
29. "Tumor Cell Interactions With Type IV Collagen: Synthetic Peptide Dissection of Post-Adhesion Signal Transduction Mechanisms," Fifteenth American Peptide Symposium, Nashville Convention Center, Nashville, TN, June 16, 1997.
30. "Protein-Like Molecular Architecture: Synthesis and Application for Inducing Cellular Receptor Binding and Signal Transduction," Fifth International Symposium on Solid Phase Synthesis & Combinatorial Chemical Libraries, Imperial College of Science, Technology and Medicine, University of London, London, England, September 5, 1997.
31. "Protein-Like Molecular Architecture: Applications for Inducing Cellular Receptor Binding and Signal Transduction," Molecular Biophysics Symposium on Biomolecular Design, University of Minnesota, Basic Science and Biomedical Engineering Building, Minneapolis, MN, October 31, 1997.
32. "Protein-Like Molecular Architecture: Biomaterial Applications for Inducing Cellular Receptor Binding and Signal Transduction," 1st Peptide Engineering Meeting, Osaka National Research Institute, Osaka, Japan, December 9, 1997.
33. "Protein-Like Molecular Architecture: Biomaterial Applications for Inducing Cell Binding and Spreading," Gordon Research Conference on Chemistry and Biology of Peptides, Doubletree Hotel, Ventura, CA, February 17, 1998.
34. "Synthetic Peptide Dissection of Tumor Cell Invasion Mechanisms," Association of Biomolecular Resource Facilities (ABRF) '98: From Genomes to Function - Technical Challenges of the Post-Genome Era, Town & Country Convention Center, San Diego, CA, March 24, 1998.
35. "Protein-Like Molecular Architecture: Synthesis, Characterization, and Potential Biomaterial Application for Inducing Cellular Activities," Florida Annual Meeting and Exposition (FAME) '98, The Harley Hotel, Orlando, FL, May 8, 1998.
36. "Synthetic Triple-Helical Mini-Collagens," Woessnerite Symposium on Proteases and Extracellular Matrix, The Lakeside Inn, Mount Dora, FL, May 23, 1998.
37. "Stabilized Collagen-Model Peptides: Potential Biomaterials, Therapeutics, and Diagnostic Agents," Round Table II: The Search for a Bioactive Conformation, Sixth Naples Workshop on Bioactive Peptides, La Palma Hotel, Capri, Italy, July 15, 1998.
38. "Are There Simple Methods for Creating Protein-Like Architectures?," Association of Biomolecular Resource Facilities (ABRF) '99: Bioinformatics and Biomolecular Technologies - Linking Genomes, Proteomes and Biochemistry, Durham Marriott at the Civic Center, Durham, NC, March 22, 1999.
39. "Induction of α -Helical Protein-Like Molecular Architecture by Mono- and Dialkyl Hydrocarbon Chains," Florida Annual Meeting and Exposition (FAME) '99, The Harley Hotel, Orlando, FL, May 7, 1999.
40. "Simple Methods for Creating Protein-Like Architectures for Use As Targeted Therapeutic Agents," Sixth International Symposium on Solid Phase Synthesis & Combinatorial Chemical Libraries, University of York, York, England, September 3, 1999.
41. "Kinetic Analysis of MMPs Using Fluorogenic and Non-Fluorogenic Triple-Helical Peptides," The First General Meeting of the International Proteolysis Society, Mission Point Resort, Mackinac Island, MI, September 26, 1999.
42. "Tissue Engineering Using Peptide-Amphiphile Biomimetics," Second Annual Tissue Engineering, Biomimetics, and Medical Implant Science (TEBMIS) Grantees Meeting, Lister Hill Auditorium, National Institutes of Health, Bethesda, MD, March 1, 2000.
43. "Peptide-Amphiphile Induction of α -Helical and Triple-Helical Structures," Symposium on Synthetic Macromolecules with Higher Structural Order, Division of Polymer Chemistry, 219th American Chemical Society National Meeting, San Francisco, CA, March 30, 2000.
44. "Convenient Synthesis of Glycosylated Hydroxylysine Derivatives for Use in Solid-Phase Peptide Synthesis," Florida Annual Meeting and Exposition (FAME) 2000, The Four Points Hotel, Orlando, FL, May 12, 2000.
45. "Analysis of Triple-Helical Peptidase Activity Using Fluorogenic Collagen-Model Substrates," Cold Spring Harbor Laboratory 2001 Proteolysis & Biological Control Conference, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, May 5, 2001.

46. "Triple-Helical Peptide Analysis of Collagenolytic Protease Activity," Seventeenth American Peptide Symposium, Town & Country Convention Center, San Diego, CA, June 10, 2001.
47. "Solid-Phase Incorporation of Unusual Amino Acids for Analysis of Tumor Cell Invasion Mechanisms," Association of Biomolecular Resource Facilities (ABRF) 2002: Biomolecular Technologies – Tools for Discovery in Proteomics and Genomics, Renaissance Austin Hotel, Austin, TX, March 10, 2002.
48. "The Use of Triple-Helical Peptide Ligands to Dissect Unique Matrix Metalloproteinase Signaling Pathways for Melanoma Cell Receptors During Invasion of the Basement Membrane," Proteases, Extracellular Matrix and Cancer: American Association for Cancer Research Special Conference in Cancer Research, Hilton Head Island, SC, October 10, 2002.
49. "Solid-Phase Incorporation of Unusual Amino Acids for Analysis of Tumor Cell Invasion Mechanisms," 2003 Organic Faculty of Florida (OFF) Conference, University of Central Florida, Orlando, FL, March 1, 2003.
50. "Biochemical Approaches for Analyzing Triple-Helical Peptidase Activity and its Role in Tumor Cell Invasion," Fargo Conference on Metalloproteinases, Holiday Inn Convention Center, Fargo, ND, May 31, 2003.
51. "Triple-Helical Peptide Ligand Dissection of Unique Melanoma Cell Signaling Pathways," Eighteenth American Peptide Symposium, Boston Marriott Copley Place, Boston, MA, July 20, 2003.
52. "Collagenolytic Versus Triple-Helical Peptidic Activity: Implications for Understanding Collagen Catabolism," 2003 Matrix Metalloproteinase Gordon Research Conference, Big Sky Resort, Big Sky, MT, August 19, 2003.
53. "Topological Templates for Dissecting Collagenolytic Activity and Designing Matrix Metalloproteinase and Aggrecanase Substrates," Third General Meeting of the International Proteolysis Society, ANA Hotel Grand Court Nagoya, Nagoya, Japan, November 13, 2003.
54. "Differential Modulation of Melanoma Metalloproteinase Expression by $\alpha 2\beta 1$ Integrin and CD44 Ligands," Molecular Targets For Cancer Therapy: Third Biennial Meeting, The Don CeSar Beach Resort & Spa, St. Petersburg, FL, October 3, 2004.
55. "Therapeutic agents containing gamma-hydroxylated amino acids," Southeast Technology Expo, New Frontiers in Therapeutics: Emerging Technologies in Infectious Disease and Oncology, Research Triangle Park, NC, October 5-7, 2004.
56. "Peptide-Amphiphile Biomimetics for Targeted Therapies," Florida Annual Meeting and Exposition (FAME) 2005, Clarion Hotel and Conference Center, Orlando, FL, May 6, 2005.
57. "Target-Based Proteolytic Profiling for Characterizing Cancer Progression," Nineteenth American Peptide Symposium, Understanding Biology Using Peptides, Town & Country Convention Center, San Diego, CA, June 21, 2005.
58. "Target-Based Proteolytic Profiling for Characterizing Cancer Progression," 4th General Meeting of the International Proteolysis Society, Hotel Loews Le Concorde, Quebec City, Canada, October 17, 2005.
59. "Target-Based Proteolytic Profiling for Characterizing Cancer Progression," ABRF 2006, Long Beach Convention Center, Long Beach, CA, February 12, 2006.
60. "Targeted Drug Delivery Systems for Metastatic Melanoma," BioFlorida 8th Annual Conference, Delray Beach Marriott, Delray Beach, FL, February 26, 2006.
61. "Advances in Peptide Technologies for Protease Characterization," First Annual Degradomics Workshop/6th Canadian Proteomics Initiative Annual Conference, University of Alberta, Edmonton, Alberta, Canada, May 9, 2006.
62. "Development of "Mini-Proteins" as Novel Matrix Metalloproteinase Inhibitors and Imaging Agents," 2008 Global Cancer Congress, Safety Harbor Spa & Resort, Tampa, FL, January 28, 2008. Meeting canceled.
63. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," First International Conference on Drug Design & Discovery, Dubai World Trade Centre, Dubai, United Arab Emirates, February 4, 2008.
64. "Exosite Probes and Inhibitors of Matrix Metalloproteinases," Gordon Research Conference on Chemistry and Biology of Peptides, Ventura Beach Marriott, Ventura, CA, February 21, 2008.
65. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," 1st Annual Peptide & Protein Conference (PepCon-2008; Peptide & Protein Technology: From Concept to Market), Grand View Hotel, Shenzhen, China, April 19, 2008.
66. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," Florida Annual Meeting and Exposition (FAME) 2008, Clarion Hotel and Conference Center, Orlando, FL, May 9, 2008.
67. "Synthesis and Application of Collagen-Model Triple-Helical Peptides," Chemistry & Biology of Peptides 2008, University of Nottingham, Nottingham, England, July 10, 2008.
68. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," 2nd Annual Protein & Peptide Conference (PepCon-2009; Life, Knowledge & Bio-Economy) Keynote Forum, COEX Conference Center, Seoul, South Korea, April 2, 2009.

69. "Development of Selective, Exosite Binding Matrix Metalloproteinase Inhibitors," 21st American Peptide Symposium, Indiana University Auditorium, Bloomington, IN, June 11, 2009.
70. "New Challenges for Targeted Nanoparticles: From Cancer Stem Cells to "Theranostics"," 2nd Annual World Cancer Congress Keynote Forum, Beijing International Convention Center, Beijing, China, June 22, 2009.
71. "Development of Selective, Exosite Binding Matrix Metalloproteinase (MMP) Inhibitors," 2nd Annual World Cancer Congress, Beijing International Convention Center, Beijing, China, June 24, 2009.
72. "Development of Selective MMP-2/MMP-9 Substrates and Inhibitors," Second Lovelace CounterACT-CRCE Research Symposium, Hotel Albuquerque at Old Town, Albuquerque, NM, September 17, 2009.
73. "Synthesis of Collagen-Model Triple-Helical Peptides and Peptidomimetics," 2nd Modern Solid Phase Synthesis & Its Applications Symposium, Sea World Nara Resort, Gold Coast (Brisbane), Australia, October 8, 2009.
74. "Exploring Secondary Binding Sites (Exosites) for the Development of Selective Protease Inhibitors," 8th Australian Peptide Conference, Couran Cove, Stradbroke Island, Gold Coast (Brisbane), Australia, October 14, 2009.
75. "Triple-Helical Peptide Models for Dissecting Collagenolysis," Polymeric Materials based on Polypeptides and their Mimics: Synthesis, Characterization, and Applications Symposium, 2010 Joint Southwest/Southeast Regional American Chemical Society Meeting, New Orleans, LA, December 3, 2010.
76. "Synthesis and Application of Collagen-Model Triple-Helical Peptides," 4th Annual Protein & Peptide Conference (PepCon-2011; New Leaders in Peptide and Protein Science), Beijing International Convention Center, Beijing, China, March 24, 2011.
77. "Dissecting Collagenolysis Utilizing Triple-Helical Peptide Models," Gordon Research Conference on Matrix Metalloproteinases, Bryant University, Smithfield, RI, August 8, 2011.
78. "How Do Enzymes Catalyze Collagen Hydrolysis?," Seventh General Meeting of the International Proteolysis Society, Hilton San Diego Resort and Spa, San Diego, CA, October 18, 2011.
79. "Platform Technologies and Novel Therapeutics," Science, Partnering and Investment (SPI) Forum 2012: Gateway for the Global Life Sciences, Palm Beach County Convention Center, West Palm Beach, FL, May 21, 2012.
80. "Production and Characterization of Matrix Metalloproteinases (MMPs) Implicated in Multiple Sclerosis (MS)," 32nd European Peptide Symposium, Megaron, Athens, Greece, September 5, 2012.
81. "Nanodiamonds for Improved Cellular Responses," 1st International Symposium on Nanoparticles-Nanomaterials and Applications: ISN2A 2014, Lisbon, Portugal, January 20, 2014.
82. "Matrix Metalloproteinase•Type II Collagen Triple-Helix Complexes," COLL Network Seminar: New Approaches For Targeting Arthritis, Karolinska Institutet, Stockholm, Sweden, March 13, 2015.
83. "*In Vivo* Inhibition of MMP Activity Using Collagen-Model, Triple-Helical Peptides," Gordon Research Conference on Collagen, Colby-Sawyer College, New London, NH, July 16, 2015.
84. "New Approaches for Obtaining Selective MMP Probes," Gordon Research Conference on Matrix Metalloproteinases, Sunday River Resort, Newry, ME, August 5, 2015.
85. "Targeting Matrix Metalloproteinases," 2015 Discovery Summit, Red Rock Resort and Spa, Las Vegas, NV, September 22, 2015. Canceled due to travel problems.
86. "Structure-guided Design and Synthesis of Highly Selective Matrix Metalloproteinase 13 Inhibitors for the Treatment of Osteoarthritis," Gordon Research Conference on Proteolytic Enzymes and Their Inhibitors, Renaissance Tuscany Il Ciocco, Lucca (Barga), Italy, June 29, 2016.
87. "Structure-guided design of selective matrix metalloproteinase (MMP) inhibitors and their application in animal models of multiple sclerosis, sepsis, and osteoarthritis," Enzymology 2017: 2nd International Conference on Enzymology and Molecular Biology, Holiday Inn Aurelia, Rome, Italy, March 20, 2017.
88. "MMP Structural Biology for Guiding Selective Inhibitor Design," Gordon Research Conference on Matrix Metalloproteinases, University of New England, Biddeford, ME, July 12, 2017.
89. "Structure-guided design of selective matrix metalloproteinase (MMP) inhibitors," Rumbaugh Goodwin Institute for Cancer Research (RGICR) Symposium, Nova Southeastern University, Fort Lauderdale, FL, March 15, 2018. Symposium postponed.
90. "Biologicals As Matrix Metalloproteinase Inhibitors," 11th Annual Protein & Peptide Conference (PepCon-2018; Revealing the Secrets of Life) Keynote Forum, Miami Marriott Dadeland, Miami, FL, March 26, 2018.
91. "Triple-Helical Peptide Models For Studying Protein-Protein Interactions Modulated by Collagen Post-translational Modifications," 11th Annual Protein & Peptide Conference (PepCon-2018; Revealing the Secrets of Life), Miami Marriott Dadeland, Miami, FL, March 26, 2018.
92. "Designing Novel Biologicals Based On Proteolytic Mechanisms," Statistical Physics in Biology: A Workshop in Honor of Ken Dill, Arizona State University, Tempe, AZ, October 8, 2018.

93. Discussion Leader, "Keynote Session," Gordon Research Conference on Metalloproteases, Renaissance Tuscany Il Ciocco, Lucca (Barga), Italy, May 12, 2019.
94. "Further Consideration of the Role of Matrix Metalloproteinase 13 in Matrix Diseases," Gordon Research Conference on Collagen, Colby-Sawyer College, New London, NH, July 16, 2019.
95. "Inhibition of Tumor Cell Surface Proteolysis," James and Esther King Biomedical Research Grant Symposium, H. Lee Moffitt Cancer Center, Tampa, FL, September 19, 2019.
96. "The Institute for Human Health & Disease Intervention (I-HEALTH)," FAU Research Showcase, Boca Raton, FL, September 27, 2019.
97. "Application of Novel Matrix Metalloproteinase Inhibitors in Cancer," 2022 Creighton University Cancer Research Symposium, Creighton University School of Medicine, Omaha, NE, April 27, 2022.
98. "MCIFAU Biospecimen Repository," ASCO Direct Highlights, JW Marriott Marquis, Miami, FL, July 7, 2023.
99. "Magnetic Resonance-Guided Focused Ultrasound: Potential for Peptide and Protein Delivery Across the Blood-Brain Barrier," 8th Venom To Drugs Conference, Tangalooma Resort, Moreton Island, Australia, October 9-14, 2023.

Academia:

1. "Solvation Effects in Solid-Phase Peptide Synthesis," Bay Area Peptide Group, University of California at San Francisco, San Francisco, CA, January 18, 1991.
2. "Optimization Strategies for Fmoc Solid-Phase Peptide Synthesis and Application for the Study of Collagen-Mediated Cellular and Enzymatic Activities," Division of Radiation Sciences, Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO, August 13, 1992.
3. "Synthesis, Characterization, and Tumor Cell Activities of Triple-Helical Collagen-Model Polypeptides," Joint Waksman Institute and Molecular Biophysics Seminar Series, Rutgers University and Robert Wood Johnson Medical School, Piscataway, NJ, March 23, 1993.
4. "De Novo Design and Biological Activity of Synthetic Proteins: Triple-Helical Collagen Model Polypeptides," Department of Chemistry Seminar Series, Louisiana State University, Baton Rouge, LA, October 22, 1993.
5. "Three-Dimensional Orthogonal Solid-Phase Synthesis of Triple-Helical Collagen Model Peptides and Biological Activity," Department of Biochemistry and Molecular Biology, University of Kansas Medical Center, Kansas City, KS, April 15, 1994.
6. "Synthetic Peptide Approaches For Dissecting the Mechanisms of Tumor Cell Adhesion and Invasion," Howard Florey Institute of Experimental Physiology and Medicine, Melbourne, Australia, October 28, 1994.
7. "Dissecting the Mechanisms of Collagen-Mediated Tumor Cell Adhesion and Motility," Department of Chemistry, Carlsberg Laboratory, Valby, Denmark, November 11, 1994.
8. "Utilizing Synthetic Peptides to Dissect the Mechanisms of Tumor Cell Progression," Department of Chemistry Seminar Series, Gustavus Adolphus College, Saint Peter, MN, November 6, 1995.
9. "Cellular Interactions With Collagen: Dissecting Adhesion and Signal Transduction Mechanisms," Department of Biochemistry, UMDNJ - Robert Wood Johnson Medical School, Piscataway, NJ, June 20, 1996.
10. "Protein-Like Molecular Architecture: Synthesis and Application for Inducing Cellular Receptor Binding and Signal Transduction," Department of Chemistry and Biochemistry, University of California at San Diego, La Jolla, CA, December 2, 1996.
11. "Self-Assembling Systems for Construction of Protein Molecular Architecture," Centre for Drug Design and Development, University of Queensland, Brisbane, Australia, February 18, 1997.
12. "Protein-Like Molecular Architecture: Synthesis and Application for Inducing Cellular Receptor Binding and Signal Transduction," Department of Chemistry and Biochemistry, Florida Atlantic University, Boca Raton, FL, March 28, 1997.
13. "Protein-Like Molecular Architecture: Synthesis and Application for Inducing Cellular Receptor Binding and Signal Transduction," Department of Developmental and Molecular Biology, Albert Einstein College of Medicine, Bronx, NY, April 15, 1997.
14. "Tumor Cell Interactions With Type IV Collagen: Synthetic Peptide Dissection of Pre- and Post-Adhesion Signal Transduction Mechanisms," Bioorganic Chemistry Seminar Series, Washington University School of Medicine, St. Louis, MO, May 16, 1997.
15. "Collagen Structural Modulation of Tumor Cell Invasion Processes," Department of Biochemistry and Molecular Biology, University of Miami School of Medicine, Miami, FL, April 15, 1998.
16. "Engineering Synthetic Proteins to Probe Tumor Cell Invasion Mechanisms," Department of Chemistry, University of Central Florida, Orlando, FL, September 14, 1998.
17. "Tissue Engineering Using Peptide-Amphiphile Biomimetics," Tulane University Medical School, New Orleans, LA, February 19, 1999.

18. "Engineering Synthetic Proteins to Probe Tumor Cell Invasion Mechanisms," Department of Chemistry, Florida International University, Miami, FL, March 5, 1999.
19. "Engineering Synthetic Proteins to Probe Tumor Cell Invasion Mechanisms," Department of Chemistry, University of South Florida, Tampa, FL, October 7, 1999.
20. "Engineering Synthetic Proteins to Probe Tumor Cell Invasion Mechanisms," Biochemistry/Structural Biology Seminar Series, Florida State University, Tallahassee, FL, January 18, 2000.
21. "Peptide-Amphiphile Biomimetics for Surface Modification," Department of Chemistry, University of Miami, Miami, FL, January 28, 2000.
22. "Engineering Synthetic Proteins to Probe Tumor Cell Signaling and Invasion Mechanisms," The Kennedy Institute of Rheumatology, Imperial College School of Medicine, London, February 11, 2000.
23. "A Chemical Approach to Probing Tumor Cell Invasion Mechanisms," Florida Institute of Technology, Melbourne, FL, March 1, 2001.
24. "Development of Peptide-Amphiphiles for Enhancing Endothelialization at Biomaterial Surfaces," The Kennedy Institute of Rheumatology, Imperial College School of Medicine, London, April 20, 2001.
25. "Chemical Approaches for Analysis of Tumor Cell Collagenolytic Protease Activity," Scripps Research Institute, La Jolla, CA, June 22, 2001.
26. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," College of Medicine Seminar Series, University of Florida, Gainesville, FL, September 13, 2001.
27. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," Cell and Molecular Biology Department Seminar Series, Northwestern University Medical School, Chicago, IL, September 25, 2001.
28. "Development of Peptide-Amphiphiles for Enhancing Endothelialization at Biomaterial Surfaces," Biomolecular Engineering Seminar Series, University of California at Santa Barbara, Santa Barbara, CA, October 19, 2001.
29. "Biochemical Approaches for Analyzing Triple-Helical Peptidase Activity and its Role in Tumor Cell Invasion," University of British Columbia, Vancouver, British Columbia, Canada, September 23, 2002.
30. "Collagenolytic Versus Triple-Helical Peptidic Activity: Implications for Understanding Collagen Catabolism," The Kennedy Institute of Rheumatology, Imperial College School of Medicine, London, November 8, 2002.
31. "Development of Peptide-Amphiphiles for Enhancing Endothelialization at Biomaterial Surfaces," Institute for Biomedical Engineering and Department of Materials, Swiss Federal Institute of Technology (ETH)/University of Zürich, Zürich, Switzerland, December 6, 2002.
32. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," University of California at San Francisco, San Francisco, CA, December 19, 2002.
33. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," Washington University School of Medicine, St. Louis, MO, September 4, 2003.
34. "Development of Peptide-Amphiphiles for Enhancing Desired Endothelial Cell Behaviors at Biomaterial Surfaces," Department of Materials Science and Engineering, University of Florida, Gainesville, FL, January 6, 2004.
35. "Defining the Roles of Collagen-Binding Receptors in Endothelial Cell Activation and Melanoma Cell Invasion," Jefferson Institute of Molecular Medicine Science Lecture Series, Thomas Jefferson University, Philadelphia, PA, February 2, 2004.
36. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Melanoma Cell Invasion," Department of Biochemistry & Biophysics, University of Pennsylvania School of Medicine, Philadelphia, PA, February 4, 2004.
37. "Biochemical Approaches for Analyzing Triple-Helical Peptidase Activity and its Role in Tumor Cell Invasion," CIHR Group in Matrix Dynamics, University of Toronto, Faculty of Dentistry, Toronto, Ontario, Canada, April 19, 2004.
38. "Protein Topology As An Enzyme Specificity Determinant," Department of Chemistry Seminar Series, Louisiana State University, Baton Rouge, LA, May 4, 2004.
39. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," The Kennedy Institute of Rheumatology Division, Imperial College London, London, England, May 27, 2004.
40. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," Cambridge Institute for Medical Research, University of Cambridge, Cambridge, England, June 30, 2004.
41. "Biochemical Approaches for Analyzing Melanoma Metastasis," Parc Científic de Barcelona, University of Barcelona, Barcelona, Spain, July 22, 2004.
42. "Correlating the Role of Collagen and Collagenolytic Protease Activity to Tumor Cell Invasion," H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL, September 1, 2004.
43. "Protein Topology As A Protease Specificity Determinant," Department of Biochemistry, University of Alberta, Edmonton, Alberta, Canada, March 2, 2005. Canceled due to travel problems.
44. "Proteolytic Profiling of the Melanoma Microenvironment: Implications for Therapeutic Intervention," Scripps Florida, Jupiter, FL, April 21, 2005.

45. "Biochemical Approaches for Profiling the Melanoma Microenvironment, and Implications for Therapeutic Intervention," College of Pharmacy, University of Florida, Gainesville, FL, November 9, 2005.
46. "Triple-Helical Model Systems for Dissecting the Mechanisms of Collagenolysis," Department of Chemistry and Chemical Biology, Rutgers University, Piscataway, NJ, January 31, 2006.
47. "Biochemical Approaches for Profiling the Melanoma Microenvironment, and Implications for Therapeutic Intervention," Basic Pharmaceutical Sciences Seminar Series, Florida A&M University, Tallahassee, FL, March 23, 2006.
48. "Biochemical Approaches for Profiling the Melanoma Microenvironment, and Implications for Therapeutic Intervention," Department of Chemistry, University of Missouri, Rolla, MO, May 2, 2006.
49. "Target-Based Proteolytic Profiling for Characterizing Cancer Progression," Department of Biochemistry, University of California, Riverside, CA, June 6, 2006.
50. "Biochemical Approaches for Profiling the Melanoma Microenvironment, and Implications for Therapeutic Intervention," Molecular Analysis and Experimental Therapeutics Program, University of Miami Sylvester Cancer Center, Miami, FL, June 14, 2006.
51. "Biochemical Approaches for Profiling the Melanoma Microenvironment, and Implications for Therapeutic Intervention," Department of Biochemistry, University of Texas Health Sciences Center, San Antonio, TX, July 5, 2006.
52. "Biochemical Approaches for Profiling the Melanoma Microenvironment, and Implications for Therapeutic Intervention," Department of Chemistry, Barry University, Miami, FL, October 6, 2006.
53. "Proteomics Approaches for Analyzing Cancer Progression and Identifying Novel Therapeutic Agents," Sylvester Comprehensive Cancer Center, University of Miami Miller School of Medicine, Miami, FL, February 2, 2007.
54. "The Progression of Cancer and Arthritis: Can Similar Treatments Help for Both Diseases?," Charles E. Schmidt College of Science Frontiers in Science Seminar Series, Florida Atlantic University, Boca Raton, FL, March 22, 2007.
55. "Clues From the Extracellular Matrix for Developing Novel Therapeutic Agents," Department of Biochemistry, University of Texas Health Sciences Center, San Antonio, TX, May 3, 2007.
56. "Clues From the Extracellular Matrix for Understanding Disease Progression and Designing Novel Therapeutic Agents," South Carolina School of Pharmacy, University of South Carolina, Columbia, SC, May 16, 2007.
57. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," Diabetes Research Institute, University of Miami Miller School of Medicine, Miami, FL, November 26, 2007.
58. "The Bioinformatics Consortium at Florida Atlantic University," Palm Beach Community College, Palm Beach Gardens, FL, March 26, 2008.
59. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," Greehey Children's Cancer Research Institute, University of Texas Health Sciences Center, San Antonio, TX, October 6, 2008.
60. "Clues From the Extracellular Matrix for Developing Novel Therapeutic Agents," Department of Molecular Medicine, University of Texas Health Sciences Center/Institute of Biotechnology, Texas Research Park Campus, San Antonio, TX, October 14, 2008.
61. "Clues From the Extracellular Matrix for Developing Novel Therapeutic Agents," Experimental & Developmental Therapeutics Program, Cancer Therapy & Research Center, University of Texas Health Sciences Center, San Antonio, TX, November 20, 2008.
62. "*In vitro* and *in vivo* CD44/CSPG Targeting of NanoDDSs," Southwest Research Institute, San Antonio, TX, January 22, 2009.
63. "Design of Novel, Selective Inhibitors for Collagenolytic Proteases," Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL, August 14, 2009.
64. "Design of Novel, Selective Inhibitors for Collagenolytic Proteases," Southwest Research Institute, San Antonio, TX, January 21, 2010.
65. "Design of Novel, Selective Inhibitors for Collagenolytic Proteases," University of Florence, Florence, Italy, February 2, 2010.
66. "Design of Novel, Selective Inhibitors of Collagenolytic Proteases," Experimental and Developmental Therapeutics (EDT) Program Annual Retreat, Cancer Therapy & Research Center (CTRC), San Antonio, TX, July 30, 2010.
67. "Matrix Metalloproteinases in Chronic Wound Healing," San Antonio Wound Healing Group, Southwest Research Institute, San Antonio, TX, September 16, 2010.
68. "How Do Enzymes Catalyze Collagen Hydrolysis?," Biomedical Engineering Department, Texas A&M University, College Station, TX, January 24, 2011.
69. "How Do Enzymes Catalyze Collagen Hydrolysis?," Department of Biochemistry, University of Missouri, Columbia, MO, February 18, 2011.

70. "How Do Enzymes Catalyze Collagen Hydrolysis?," Department of Chemistry, Rice University, Houston, TX, March 30, 2011.
71. "Using the Mechanism of Collagenolysis to Develop Novel Matrix Metalloproteinase Inhibitors," Torrey Pines Institute for Molecular Studies Seminar Series, Port St. Lucie, FL, September 13, 2011.
72. "Using the Mechanism of Collagenolysis to Develop Novel Matrix Metalloproteinase Inhibitors," Beckman Research Institute, City of Hope, Duarte, CA, September 19, 2011.
73. "Design of Novel, Selective Inhibitors of Collagenolytic Proteases," Department of Pathology, Keck School of Medicine, University of Southern California, Los Angeles, CA, September 21, 2011.
74. "Exosite Inhibitors of Metalloproteinases," Torrey Pines Institute for Molecular Studies, La Jolla, CA, October 17, 2011.
75. "Using the Mechanism of Collagenolysis to Develop Novel Matrix Metalloproteinase Inhibitors," Center for Molecular Biology & Biotechnology Seminar Series, Florida Atlantic University, Boca Raton FL, October 26, 2011.
76. "Exosite Inhibitors of Metalloproteinases," University of Florence, Florence, Italy, November 30, 2011.
77. "Selective Inhibition of Membrane-Type I Matrix Metalloproteinase," Torrey Pines Institute for Molecular Studies Faculty Discussion Group, Port St. Lucie, FL, December 14, 2011.
78. "Unraveling the Mechanism of Collagenolysis," Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden, September 28, 2012.
79. "Unraveling the Mechanism of Collagenolysis," National Heart, Lung, and Blood Institute (NHLBI) Tenure Track Seminar Series, National Institutes of Health, Bethesda, MD, November 13, 2012.
80. "Using the Mechanism of Collagenolysis to Develop Novel Matrix Metalloproteinase Inhibitors," Cancer Center, Mayo Clinic Jacksonville, Jacksonville, FL, January 18, 2013.
81. "Enzyme Inhibition Based on Secondary Binding Sites," Department of Chemistry & Biochemistry, Florida Atlantic University, Boca Raton, FL, March 1, 2013.
82. "Progress in Selective Matrix Metalloproteinase Inhibition," Centro di Ricerca di Risonanze Magnetiche (CERM), Florence, Italy, July 4, 2013.
83. "Glycosylation of Collagen Modulates its Cellular Activities," Toscana Life Sciences Foundation, Siena, Italy, July 5, 2013.
84. "Modulation of Cell Surface Proteolytic Activity," Department of Biomedical Science, Charles E. Schmidt College of Medicine, Florida Atlantic University, Boca Raton, FL, September 9, 2013.
85. "Triple-Helical Peptide Models for Studying Collagen-Based Diseases," University of Michigan Medical School, Ann Arbor, MI, October 9, 2013.
86. "What Can You Do With Chemistry?," FAU Chemistry Club Research Symposium and Banquet, Lakeside Terrace, Boca Raton, FL, November 16, 2013.
87. "Modulation of Cell Surface Proteolytic Activity," National Cancer Institute (NCI) Molecular Discovery Program Seminar Series, Chemical Biology Laboratory, Frederick, MD, April 24, 2014.
88. "Inhibition and Imaging of Extracellular Matrix Degradation *In Vivo*," Max Planck Institute for Molecular Cell Biology and Genetics, Dresden, Germany, June 18, 2014.
89. "Analysis of Membrane Type 1 Matrix Metalloproteinase (MT1-MMP) Behavior at the Cell Surface," Centro di Ricerca di Risonanze Magnetiche (CERM), Florence, Italy, June 20, 2014.
90. "Modifications to Potentially Improve PCNA-Derived Peptides As Anti-Cancer Therapeutic Agents," Beckman Research Institute, City of Hope, Duarte, CA, July 10, 2014.
91. "Using the Mechanism of Collagenolysis to Develop Novel Matrix Metalloproteinase Probes," The Scripps Research Institute/Scripps Florida, Jupiter, FL, January 22, 2015.
92. "Different Mechanisms of Collagenolytic Metalloproteinases," Centro di Ricerca di Risonanze Magnetiche (CERM), Florence, Italy, June 26, 2015.
93. "Different Mechanisms of Collagenolytic Metalloproteinases," Department of Applied Sciences, Northumbria University, Newcastle-upon-Tyne, United Kingdom, June 29, 2015.
94. "Probe Development for Analysis of Matrix Metalloproteinase Function *In Vivo*," KU Leuven and Rega Institute for Medical Research, Leuven, Belgium, July 1, 2015.
95. "Cancer, Arthritis, and Neurodegenerative Diseases: What Do They Have in Common?," Department of Physical Sciences, Barry University, Miami, FL, October 2, 2015.
96. "(Maybe Not So) New Approaches for Obtaining Selective MMP Probes," Charles E. Schmidt College of Medicine Seminar Series, Florida Atlantic University, Boca Raton, FL, October 9, 2015.
97. "Probe Development for Analysis of Matrix Metalloproteinase Function *In Vivo*," Department of Drug Discovery, Harrison School of Pharmacy, Auburn University, Auburn, AL, March 22, 2016.

98. "Structure-guided Design and Synthesis of Highly Selective Matrix Metalloproteinase 13 Inhibitors for the Treatment of Osteoarthritis," Centro di Ricerca di Risonanze Magnetiche (CERM), Florence, Italy, March 24, 2017.
99. "Structure-guided Design of Selective Matrix Metalloproteinase (MMP) Inhibitors and Their Application in Animal Models of Disease," Florida Atlantic University Harbor Branch Oceanographic Institute, Ft. Pierce, FL, May 22, 2017.
100. "New Adventures in Matrix Metalloproteinase 13 Inhibitors," Department of Chemistry, The Scripps Research Institute/Scripps Florida, Jupiter, FL, January 9, 2018.
101. "Modulation of Protein-Protein Interactions by Collagen Post-translational Modifications," Center for Matrix Biology, Vanderbilt University, Nashville, TN, January 16, 2018.
102. "Structure-guided Design of Selective Matrix Metalloproteinase (MMP) Inhibitors and Their Application in Animal Models of Disease," Department of Chemistry, Michigan Technological University, Houghton, MI, March 23, 2018.
103. "Structure-guided Design of Selective Matrix Metalloproteinase (MMP) Inhibitors and Their Application in Animal Models of Disease," Department of Biological Regulation, Weizmann Institute of Science, Rehovot, Israel, March 29, 2018.
104. "Inhibition of Proteases Implicated in Melanoma Progression," Dermatology Grand Rounds, University of Miami Medical School, Miami, FL, October 9, 2019.
105. Translational Research Roundtable Discussion, Miami Integrative Metabolomics Research Center, University of Miami Medical School, Miami, FL, January 29, 2020.
106. "Perspectives on New Cancer Treatments," Virtual Research In Action Seminar Series, Florida Atlantic University, Boca Raton, FL, August 27, 2020.
107. "Use of Animal Models to Improve Drug Delivery to the Brain," Biomedical Research Awareness Day (BRAD), Florida Atlantic University, Boca Raton, FL, April 7, 2022.
108. "Development of Matrix Metalloproteinase 13 Inhibitors for Application in Multiple Myeloma," Chemistry of Cancer Seminar Series, Southeastern University, Lakeland, FL, April 8, 2022.
109. "Fundamentals of Scientific Research," Palm Beach State College webinar, April 11, 2022. Canceled.
110. "New approaches to treating and monitoring Alzheimer's disease," Virtual Research In Action Seminar Series, Florida Atlantic University, Boca Raton, FL, September 8, 2022.
111. "New approaches to treating and monitoring Alzheimer's disease," Center for Molecular Biology & Biotechnology Seminar Series, Florida Atlantic University, Boca Raton FL, January 30, 2023.
112. "New Approaches to Combat Alzheimer's Disease," ForEver (LIFE) Program, Rochester Community and Technical College, Rochester, MN, February 23, 2023.

Industrial/Other:

1. "Theory for Solid-Phase Peptide Synthesis," Applied Biosystems, Incorporated, Foster City, CA, February 22, 1990.
2. "Fmoc Solid-Phase Peptide Synthesis," Gilson Medical Electronics, Incorporated, Middleton, WI, September 13, 1991.
3. "Correlation of Solvent Effects With Solid-Phase Reactivity," Bio-Metric Systems, Incorporated, Eden Prairie, MN, September 26, 1991.
4. "University of Minnesota Biomedical Engineering Center," Minnesota Mining and Manufacturing (3M), St. Paul, MN, February 20, 1992.
5. "University of Minnesota Biomedical Engineering Center," Hoechst Celanese, University of Minnesota, Minneapolis, MN, April 10, 1992.
6. "University of Minnesota Biomedical Engineering Center," BioGen, University of Minnesota, Minneapolis, MN, May 12, 1992.
7. "University of Minnesota Biomedical Engineering Center," Perstorp Pharma, University of Minnesota, Minneapolis, MN, November 24, 1992.
8. "University of Minnesota Biomedical Engineering Center," ZymoGenetics, University of Minnesota, Minneapolis, MN, July 22, 1993.
9. "The Effect of Collagen Conformation on Biological Recognition Processes," Pfizer Central Research, Pfizer Incorporated, Groton, CT, February 11, 1994.
10. "Cell Recognition and Collagen Conformation," Tanabe Research Laboratories U.S.A., San Diego, CA, February 25, 1994.
11. "Synthetic Peptide Dissection of Extracellular Matrix Proteins and Receptors/Adhesion Molecules," Tanabe Research Laboratories U.S.A., San Diego, CA, July 8, 1994.

12. "Synthetic Peptide Approaches For Understanding Tumor Cell Behavior," Star Biochemicals, Torrance, CA, September 28, 1994.
13. "Synthetic Peptide Approaches For Understanding and Modulating Tumor Cell Behavior," Mallinckrodt Chemical, Incorporated, St. Louis, MO, March 3, 1995.
14. "Potential Therapeutic Applications Of Tumor Cell Receptor Ligands," Coulter Pharmaceutical, Palo Alto, CA, April 20, 1998.
15. "Synthetic Peptide Approaches for Dissecting Extracellular Matrix Protein-Mediated Cellular Activities," Alcon Laboratories, Fort Worth, TX, January 28, 1999.
16. "Synthesis of Glycosylated Hydroxylysine Derivatives, and Their Use For Studying Tumor Cell Interactions With Collagen," Degussa AG, Hanau-Wolfgang, Germany, November 5, 2001.
17. "New Approaches For Melanoma Diagnosis and Treatment," Wachovia Wealth Management Biomedical Lunch/Lecture Series, Boca Raton, FL, March 24, 2005.
18. "New Approaches For Delivering Drugs To Cancer Cells," Leavitt Capital Management, Boca Raton, FL, November 15, 2005.
19. "Collagen Model Systems for Evaluating Metalloproteinase Mechanisms and Identifying Novel Inhibitors," Department of Enzymology and Mechanistic Pharmacology, GlaxoSmithKline Pharmaceuticals, Collegeville, PA, April 19, 2006.
20. "Mechanism and Inhibition of Collagenolytic Matrix Metalloproteinases," Kinetic Concepts, Inc., San Antonio, TX, September 18, 2008.
21. "Design of Novel, Selective Inhibitors for Collagenolytic Proteases," Chemizon, Inc., Beijing, China, June 24, 2009.
22. "Design of Novel, Selective Inhibitors of Collagenolytic Proteases," DPT Laboratories, San Antonio, TX, March 30, 2010.
23. "Modulating Disease Progression and Minimizing Side-Effects With New Anti-Protease Therapeutics," St. Lucie County Economic Development Council Member Luncheon, Treasure Coast Campus, Florida Atlantic University, Port St. Lucie, FL, February 7, 2012.
24. "Glycoproteolysis and Cancer Biomarkers," Fourth Annual Retreat and Medical Symposium, Martin Medical Center, Stuart, FL, March 25, 2012.
25. "Inhibition of Metalloproteinases via Exploitation of Secondary Binding Sites," Cytonics Corporation, Jupiter, FL, February 13, 2013.
26. "Torrey Pines Institute for Molecular Studies: Protease Therapeutics and Therapeutic Proteases," Third Annual Palm Beach Business Group "Biotech Breakfast at the Breakers," The Breakers Hotel, Palm Beach, FL, November 8, 2013.
27. "Methodological aspects of triple-helical peptide synthesis and functional studies of MMP interactions," JointID Workshop: Biomarker Identification of Inflammation in Joints, Hotel Norrtull, Stockholm, Sweden, March 14, 2015.
28. "FAU STEM/Health Sciences Initiative," Business Development Board of Palm Beach County 2015 Life Sciences FAM Tour, The Jupiter Beach Resort, Jupiter, FL, March 26, 2015.
29. "Why Can't I Eat Sugar All Of The Time?," The Weiss School, Palm Beach Gardens, FL, April 1, 2015.
30. "Cancer, Arthritis, and Neurodegenerative Diseases: What Do They Have in Common?," Coffee with the Professor, FAU, Jupiter, FL, January 15, 2016.
31. "The Polymerase Chain Reaction (PCR)," The Weiss School, Palm Beach Gardens, FL, March 8, 2017.
32. "Structure-guided design of selective matrix metalloproteinase (MMP) inhibitors and their application in animal models of disease," Bio-Science and Analytics of South Florida, FAU, Jupiter, FL, December 4, 2017.
33. "The Center for Molecular Biology & Biotechnology," Palm Beach North Chamber of Commerce Prosperity Leadership Tour, Florida Atlantic University, Jupiter, FL, April 3, 2018.
34. "The Center for Molecular Biology & Biotechnology," BioFlorida Palm Beach/Treasure Coast Chapter Event, Florida Atlantic University, Jupiter, FL, April 26, 2018.
35. "FAU/Deluge Biotechnologies Collaboration," Discovery at FAU: Your Partner in Innovation, Florida Atlantic University, Boca Raton, FL, May 7, 2018.
36. "College of Science Research on the Jupiter Campus," FAU Research Leadership Retreat, Spanish River Library, Boca Raton, FL, May 22, 2018.
37. "Cancer-related Research at FAU," Lynn Cancer Institute, Boca Raton, FL, November 15, 2018.
38. "Perspectives on New Cancer Treatments," Academy of Continuing Education (ACE) Lifelong Learning Center, Mandel JCC, Boynton Beach, FL, January 21, 2019.
39. "Perspectives on New Cancer Treatments," Institute For Learning In Retirement, Boca Raton, FL, January 28, 2019.

40. "Improvement of Human Health: From Chemical Biology to Coordination of Research and Clinical Communities," Florida Atlantic University, Boca Raton, FL, April 3, 2019.
41. "Cancer-related Research at FAU," FAU/South Florida Proton Therapy Institute Meeting, FAU, Boca Raton, FL, April 9, 2019.
42. "So What's the Problem with Sugar?," Institute For Learning In Retirement, Boca Raton, FL, April 15, 2019.
43. "The Center for Molecular Biology & Biotechnology," Tech Runway Advisory Board Meeting, Florida Atlantic University, Boca Raton, FL, July 16, 2019.
44. "Scientific Research and Societal Impact," Future Doctor's Reception, Florida Atlantic University, Boca Raton, FL, May 11, 2020. Canceled due to SARS-CoV-2/COVID-19.
45. "COVID-19 Repository at FAU," WPBF 25 ABC News at 6:00 PM, February 15, 2021.
46. "New COVID-19 Research Study at FAU," WPEC CBS 12 News at 5:30 PM, February 26, 2021.
47. "Leading the Fight: South Florida researchers developing COVID-19 vaccines, treatments," WSVN 7News at 10:00 PM, March 11, 2021.
48. "I-HEALTH and the Cancer Center of Excellence," Broward College Alumni Spotlight, March 22, 2021, https://www.youtube.com/watch?v=DpHBq_WW2IM&t=4s.
49. "Design of Protease Inhibitors for Application in Cancer," American Medical Student Association (AMSA) Research Faculty Mentor Panel Event, Florida Atlantic University, Wilkes Honors College, Jupiter, FL, October 27, 2021.
50. "Journal of Cellular Physiology Publishing Workshop," Wiley webinar, January 27, 2022.
51. "MCIFAU Membership," MCIFAU Cancer Center of Excellence Meeting of Members, Renaissance Hotel Fort Lauderdale, Plantation, FL, March 8, 2022.
52. "Publishing in the Journal of Cellular Physiology," Wiley China webinar, March 10, 2022.
53. "Hit Picking: Using a Fluorescent Substrate Assay and Imaging to Screen for Inhibitors of MT1-MMP Activity and 3D Glioma Tumoroid Invasion," Agilent webinar, April 20, 2022.
54. "Discoveries, Treatments, and Strategies: How FAU is Accelerating the Drive Against Cancer," Friedberg Auditorium, Osher Lifelong Learning Institute, Boca Raton, FL, October 12, 2022.
55. "There's Hope: Delray Medical, FAU Progress in Alzheimer's Research Using New Technology," WPEC CBS 12 News at 11:00 PM, February 17, 2023.
56. "MCIFAU Membership," MCIFAU Cancer Center of Excellence Meeting of Members, Gift Of Live, Boca Raton, FL, March 9, 2023.
57. "Careers in Chemistry," William T. Dwyer High School Science Honor Society, Palm Beach Gardens, FL, March 15, 2023.
58. "Modulation of Cartilage Turnover by Autoantibodies and Citrullination in Rheumatoid Arthritis," Agilent BioTek Augmented Microscopy Virtual Summit 2023, April 26, 2023.

MENTORING, THE UNIVERSITY OF MINNESOTA

Fellows:

Cynthia G. Fields, Research Fellow, 3/91-1/97; Beate Grab, Postdoctoral Associate, 4/94-10/95; Janelle L. Lauer, Research Associate, 7/94-12/97; Jennifer R. Knutson, Postdoctoral Associate, 12/95-3/96; Henriette A. Remmer, Postdoctoral Associate, 6/96-12/97; Pilar Forns, Postdoctoral Associate, 1/97-12/97.

Graduate Students:

Ying-Ching (Eric) Yu, 12/93-11/97. Ph.D. in Biomedical Engineering; Matthew V. Tirrell, co-advisor. Dissertation title: "Synthesis and Characterization of Collagenous Peptide-Amphiphiles."

Undergraduates:

Andrew J. Miles, 10/91-6/93; Celeste Hymel, 6/92-8/92; Kristopher Josephson, 6/94-9/94; Christi M. Gendron, 9/96-6/97.

MENTORING, FLORIDA ATLANTIC UNIVERSITY

Fellows:

Pilar Forns, Postdoctoral Associate, 1/98-12/98; Janelle L. (Lauer) Lauer-Fields, Research Associate, 1/98-7/08; Stephen J. Freedman, Postdoctoral Associate, 11/98-4/99; Navdeep B. Malkar, Postdoctoral Associate, 3/99-2/02; Jeffrey A. Borgia, Postdoctoral Associate, 8/99-8/02; Thilaka Sritharan, Research Associate, 6/00-12/01; Diane Baronas-Lowell, Postdoctoral Associate, 8/01-5/06; Mare Cudic, Postdoctoral Associate, 9/03-6/08; Evonne Rezler, Postdoctoral Associate, 1/04-6/06; Carolina Moller, Postdoctoral Associate, 6/06-11/06; Sabrina Amar, Postdoctoral Associate/Assistant Research Professor, 1/15-2/17; Ania Knapinska, Postdoctoral Associate/Assistant Research Professor, 1/15-present; Maciej Stawikowski, Postdoctoral Associate/Associate Research Professor, 1/15-1/16;

Hongjie Wang, Postdoctoral Associate/Assistant Research Professor, 10/18-present; Lillian Onwuha-Ekpete, I-HEALTH Postdoctoral Fellow, 7/21-present.

Graduate Students:

Ayala Fishel, 2/98-4/00. M.S. in Chemistry & Biochemistry. Thesis title: "Biophysical Characterization of Bioactive Peptide Amphiphiles."

Mohammad A. Al-Ghoul, 8/00-9/03. M.S. in Chemistry & Biochemistry. Thesis title: "Construction of Mini Collagen Ligands Recognized by $\alpha 2\beta 1$ Integrin and CD44/CSPG Melanoma Receptors: New Method for the Study of Signaling Pathways."

Dmitriy Minond, 8/02-5/06. Ph.D. in Chemistry & Biochemistry. Dissertation title: "The Roles of Substrate Sequence and Thermal Stability in the Collagenolytic Action of Matrix Metalloproteinases."

David Khan, 12/02-10/07. Ph.D. in Chemistry & Biochemistry. Dissertation title: "Targeted Drug Delivery Utilizing a Mini-Collagen Ligand Recognized by CD44/CSPG Melanoma Receptors."

Deepak Patel, 5/03-7/06. M.S. in Chemistry & Biochemistry. Thesis title: "Assay Development for Lysyl Hydroxylase."

Mohammad A. Al-Ghoul, 1/04-10/07. Ph.D. in Chemistry & Biochemistry. Dissertation title: "Proteome Analysis of Melanoma Progression."

Orsi Giricz, 9/04-6/08. Ph.D. in Chemistry & Biochemistry. Dissertation title: "Metalloprotease Profiling in Melanoma."

Beatrix Aukszi, 9/04-9/08. Ph.D. in Chemistry & Biochemistry. Dissertation title: "Effects of Glycosylation on Melanoma Interactions with Type IV Collagen Models."

Michal Tokmina-Roszyk, 8/13-12/19. Ph.D. in Chemistry & Biochemistry. Dissertation title: "Monitoring Collagenolysis Utilizing Triple Helical Peptide Probes."

Mariam Ibrahim, 1/19-6/20. P.S.M. in Medical Physics. Thesis title: "Synthesis of Fluorogenic Probes Specific for Matrix Metalloproteinase 13."

Dorota Tokmina-Roszyk, 8/13-11/20. Ph.D. in Integrative Biology. Dissertation title: "The Role of Matrix Metalloproteinase-28 in Health and Disease."

Lillian Onwuha-Ekpete, 8/12-11/20. Ph.D. in Integrative Biology. Dissertation title: "A Study on the Clinical Relevance of Metalloproteinase Inhibition."

Aaron McFarlane, 8/19-7/21. Master's Along the Way (MALW) in Integrative Biology. Thesis title: "Determining the permeability of triple-helical peptide inhibitors (THPIs) across the blood-brain barrier *in vitro* and *in vivo* for the purpose of treating multiple sclerosis."

Heather Butler, 8/21-present. Integrative Biology.

Jessica Frank, 8/21-present. Chemistry & Biochemistry.

Chandani Singh, 4/22-present. Chemistry & Biochemistry.

Undergraduates:

Mark Heckathorne, 1/99-4/00; Jermaine Bowan, 1/99-4/99, 8/99-12/99; Kartik Viswanathan, 1/99-4/99; Katarzyna Pisarewicz, 5/99-12/99; James Alouidor, 8/99-12/99; Todd Broder, 8/99-8/00; Mohammed A. Al-Ghoul, 9/99-4/00; Christopher Allen, 1/00-4/01; Anjum Sayad 1/00-8/01; Shannon McDonough, 5/00-4/01; Rick Wagner, 5/00-4/01; Claudia Perez, 5/00-4/01; Neal Niemczyk, 5/00-8/01; Olivia Dalla Costa, 1/01-12/01; Guerda Etienne, 1/02-5/02; Sonya Reid, 5/03-8/03; Gian Franco Sferrazza, 5/03-12/03; Reynold Johnson, 1/04-8/04; Nandini Rambahal, 8/05-12/05; Antoinette Foster, 8/05-5/06; Eric Hilgenfeldt, 5/06-8/06; Gayle Burstein, 8/06-8/07; Claudia Zapata, 8/06-8/07; Allison Price, 8/07-12/07; Marcelo Vilarindo, 1/08-5/08; Melissa Stone, 5/08-7/08 (Summer Undergraduate Research Fellow, Yale University); Karla-Anne Knapp, 3/15-8/15; Whitney Oliveira, 3/15-12/15; Jocelyn Mark, 3/15-12/15; Christie-Anne Estrada, 3/16-5/17; Dominique Davis, 8/16-5/17; Melissa Hart, 7/17-5/18; James Mamola, 8/17-4/18; Danielle Salick, 3/18-6/18; Stephen Dietz, 6/18-7/18 (summer researcher, Arizona State University); Aaron McFarlane, 8/18-8/19; Darien Bellido de Luna, 8/18-12/19; Daniela Blanco, 11/18-3/20; Jessica Samuel, 12/18-8/19; Gary Drotleff, 2/19-8/20; Jason Schwab, 1/20-3/20; Cedric Chai, 1/20-8/21; Destiny Twohill, 4/20-8/21; Michelle Rodriguez Suarez, 4/20-8/20; Nihasika Gopi, 5/21-present; Michael Deutsch, 8/21-5/22; Kathryn (Katt) Martin, 5/22-present; Julianna Gregory, 5/22-12/22; Nicole Liang, 6/22-8/22 (NSF REU Summer Integrative Neuroscience Experience (SINE)); Ella Protz, 1/23-present; Audrey Pierce, 1/23-present.

FAU High School Students:

Devin Willis, 8/19-6/20; Alexa Ernce, 4/20-present; Isabella Grande, 4/20-5/22, Gabriella Goytizolo, 4/21-5/22.

MENTORING, UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER

Fellows:

Janelle L. Lauer-Fields, Postdoctoral Associate/Fellow, 8/08-3/10; Trista Robichaud, Postdoctoral Fellow, 6/09-1/11; Margaret Ndinguri, Postdoctoral Associate, 6/09-12/10; Manishabrata Bhowmick, Postdoctoral Associate, 1/10-12/10.

MENTORING, TORREY PINES INSTITUTE FOR MOLECULAR STUDIES

Fellows:

Margaret Ndinguri, Postdoctoral Associate, 1/11-8/12; Manishabrata Bhowmick, Postdoctoral Associate, 1/11-6/14; Sabrina Amar, Postdoctoral Associate, 5/11-12/14; Ania Knapinska, Postdoctoral Associate, 8/11-12/14; Maciej Stawikowski, Postdoctoral Associate, 8/11-12/14; Sonia Pahwa, Postdoctoral Associate, 10/11-8/13.

Undergraduates:

Nicholas Jones, 5/12-8/12; Lisa Tack, 5/12-8/12; Jennifer Davis, 4/13-12/13; Sacha Chevolleau, 4/13-12/13; Lyndsay Smith, 6/14-6/17.

EXTERNAL DOCTORAL DISSERTATION COMMITTEES

Qi Meng, 1998. University of Miami, Biochemistry and Molecular Biology; Keith Brew, advisor. Dissertation title: "Structure-Function Relationships in Human Tissue Inhibitor of Metalloproteinase (TIMP)."

Matthias Lütolf, 2002. Swiss Federal Institute of Technology (ETH), Biomedical Engineering and Materials; Jeffrey A. Hubbell, advisor. Dissertation title: "Cell-Responsive Synthetic Hydrogels."

Peter Kele, 2002. University of Miami, Chemistry; Roger M. Leblanc, advisor. Dissertation title: "Synthesis and Application of Novel Coumarin Derivatives."

Antonia Alexandra Georgina Cecilia Claasz, 2003. Howard Florey Institute & University of Melbourne, Biochemistry and Molecular Biology; Geoffrey Tregear, John Wade, and Ross Bathgate, advisors. Dissertation title: "Properties of the Human Relaxin Receptor."

Yuxin (Jason) Chen, 2005. University of Alberta, Biochemistry; Robert S. Hodges, advisor. Dissertation title: "HPLC Methodology Development and De Novo Design of Antimicrobial Peptides."

Mark Pasqualino Del Borgo, 2005. Howard Florey Institute & University of Melbourne, Pharmacology; John Wade and Tony Hughes, advisors. Dissertation title: "Design, Synthesis and Analysis of Mimetics of Relaxin and Insulin-like Peptide 3."

Xin Du, 2013. University of British Columbia, Biochemistry & Molecular Biology; Dieter Brömme, advisor. Dissertation title: "Structural Requirements for the Respective Elastolytic and Collagenolytic Activities of Cathepsins V and K."

Yu Gao, 2014. The Scripps Research Institute/Scripps Florida, Chemistry; Thomas Kodadek, advisor. Dissertation title: "Conformationally Restricted Peptidomimetic Libraries for High-Throughput Screening."

Alexandra Louka, 2016. University of Florence/Centro di Ricerca di Risonanze Magnetiche (CERM); Claudio Luchinat and Marco Fragai, advisors. Dissertation title: "Design of Chimeric Proteins and Metalloproteins for the Creation of Innovative Bio-Inspired Material."

Spencer D. Wood, 2017. The Scripps Research Institute/Scripps Florida, Chemistry; William Roush, advisor. Dissertation title: "Chemical Synthesis and Use of *in silico* Methods for the Rational Design of Small Molecule anti-Cancer Therapeutic Candidates."

Jeremy W. Mason, 2017. The Scripps Research Institute/Scripps Florida, Chemistry; William Roush, advisor. Dissertation title: "Correcting Metabolic Disturbances in Disease: Part 1 – Enhancing Acetylcholine Synthesis in Alzheimer's Disease; Part 2 – Approach Towards Depleting Lipid Building-Blocks in Cardiovascular Disease."

Kevin Pels, 2017. The Scripps Research Institute/Scripps Florida, Chemistry; Thomas Kodadek, advisor. Dissertation title: "Synthesis of Diverse Combinatorial Libraries for Covalent & Noncovalent Engagement Of Biological Targets."

James M. Alburger, 2018. The Scripps Research Institute/Scripps Florida, Chemistry; William Roush, advisor. Dissertation title: "Rationally and Computationally Guided Synthesis Targeting the Inhibition of Cancer."

V. Shunmuga Priya, 2021. Anna University (Chennai, India), Technology; M. Vasanthi, advisor. Dissertation title: "Studies on Matrix Metalloproteinase Inhibition Property of Phytoconstituents for the Management of Cancer Metastasis Through *In Silico*, *In Vitro* Approaches."

HONORS & AWARDS FOR MEMBERS OF THE FIELDS' LABORATORY

Beate Grab, American Peptide Society Travel Grant, 14th American Peptide Symposium, Columbus, OH, June 18-23, 1995.

Pilar Fornas, American Peptide Society Travel Grant, 16th American Peptide Symposium, Minneapolis, MN, June 26 - July 1, 1999.

Diane Baronas-Lowell, Keystone Symposia Scholarship, Keystone Symposium on Signaling via Cell-Cell Interactions, Keystone, CO, March 18-23, 2003.

Janelle L. Lauer-Fields, Novartis Award, Gordon Research Conference on Matrix Metalloproteinases, Big Sky, MT, August 17-22, 2003.

Janelle L. Lauer-Fields, Glenn/American Federation for Aging Research (AFAR) Scholarship, 2004.

Evonne Rezler, BioFlorida "Legacy in Life Science" Scholarship, 2005.

Janelle L. Lauer-Fields, Scholar-In-Training Award, Cancer, Proteases, and the Tumor Microenvironment: An American Association for Cancer Research (AACR) Special Conference in Cancer Research, Bonita Springs, FL, November 30 - December 4, 2005.

Janelle L. Lauer-Fields, ASBMB Award, Experimental Biology 2006 Meeting, San Francisco, CA, April 1-5, 2006.

Janelle L. Lauer-Fields, NIH Craniofacial Oral-Biology Student Training in Academic Research (COSTAR) Postdoctoral Fellowship, 2009-2010.

Trista K. Robichaud, NIH Pathobiology of Occlusive Vascular Disease Postdoctoral Fellowship, 2009-2012.

Margaret Ndinguri, AACR Minority Scholar in Cancer Research Award, AACR 102nd Annual Meeting, Orlando, FL, April 2-6, 2011.

Margaret Ndinguri, National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCCChE) Advancing Science Award, NOBCCChE 38th Annual Meeting, Houston, TX, April 19-22, 2011.

Margaret Ndinguri, American Peptide Society Travel Grant, 22nd American Peptide Symposium, San Diego, CA, June 25-30, 2011.

Dorota Tokmina-Roszyk, Cold Spring Harbor Scholarship, Cold Spring Harbor Laboratory Course: Proteomics, Cold Spring Harbor, NY, June 15-28, 2016.

Christie-Anne Estrada, FAU Research Summer Scholarship, 2016.

Lillian Onwuha-Ekpete, Cold Spring Harbor Scholarship, Cold Spring Harbor Laboratory Course: Metabolomics, Cold Spring Harbor, NY, June 10-26, 2017.

Michal Tokmina-Roszyk, 2017 Parkanyi Research Award, Department of Chemistry & Biochemistry, FAU.

Melissa Hart, FAU Undergraduate Research Grant, 2017.

Dorota Tokmina-Roszyk, 2018 Dissertation Year Support Award, Division of Research, FAU.

Lillian Onwuha-Ekpete, 2018 Dissertation Year Support Award, Division of Research, FAU.

Lillian Onwuha-Ekpete, 2018 American Association of Immunologists Trainee Abstract Award, Immunology 2018, Austin, TX, May 4-8, 2018.

Lillian Onwuha-Ekpete, American Association of Immunologists Travel Grant, 5th European Congress of Immunology, Amsterdam, The Netherlands, September 2-5, 2018.

Aaron McFarlane, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2018.

Darien Bellido de Luna, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2018.

Lillian Onwuha-Ekpete, FAU College of Medicine Graduate Student Research Day 1st Place Poster Award, April 5, 2019.

Dorota Tokmina-Roszyk, 10th Annual FAU Graduate & Professional Student Association Research Day, Poster Award, Health Category, April 5, 2019.

Dorota Tokmina-Roszyk, 10th Annual FAU Graduate & Professional Student Association Research Day, 2nd Place Poster Award, Chemistry Category, April 5, 2019.

Michal Tokmina-Roszyk, 10th Annual FAU Graduate & Professional Student Association Research Day, 3rd Place Poster Award, Chemistry Category, April 5, 2019.

Aaron McFarlane, 9th Annual FAU Undergraduate Research Symposium 1st Place Poster Award, April 8, 2019.

Gary Drotleff, 2019 John Nambu Memorial Summer Research Experience for Undergraduates Program, FAU.

Aaron McFarlane, The Honor Society of Phi Kappa Phi Love of Learning Award, 2019.

Gary Drotleff, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2019.

Gary Drotleff, 2019 Undergraduate Researcher of the Year, College of Science, FAU.

Aaron McFarlane, 2020 Osher Lifelong Learning Institute Scholarship.

Lillian Onwuha-Ekpete, American Association of Immunologists Minority Scientist Travel Award, Immunology 2020, Honolulu, HI, May 8-12, 2020.

Alexa Ernce, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2021.

Isabella Grande, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2021.

Heather Butler, Heichemer Family Fellowship Award in Glial Biology, 2022.

Janelle L. Lauer, FAU Integrative Biology Distinguished Alumni Award, 2022.

Nihasika Gopi, FAU Summer Undergraduate Research Fellowship (SURF), 2022.

Nihasika Gopi, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2022.

Gabriella Goytizolo, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2022.

Lillian Onwuha-Ekpete, FAU Stiles-Nicholson Brain Institute-sponsored MobileMinds Program, 2022-2023.

Jessica Frank, FAU Stiles-Nicholson Brain Institute-sponsored ASCEND Program, 2022-2023.

Chandani Singh, FAU Stiles-Nicholson Brain Institute-sponsored ASCEND Program, 2022-2023.

Nihasika Gopi & Kathryn Martin, FAU Office of Undergraduate Research and Inquiry (OURI) Undergraduate Research Grant, 2023.

TEACHING ASSIGNMENTS, THE UNIVERSITY OF MINNESOTA

Quarter	Course Number	Course Title	Students (#)
Spring 1992	Path 8130	Cell Biology of the Extracellular Matrix	8
Fall 1993	BioC/MdBc 8001	Adv. Biochem. 1: Protein Structure & Function	25
Fall 1993	BioC 8094	Research and Literature Reports	17
Winter 1994	BioC 8094	Research and Literature Reports	15
Spring 1994	BioC 8094	Research and Literature Reports	9
Spring 1994	Path 8130	Cell Biology of the Extracellular Matrix	15
Fall 1994	Path 8140	Application of Methods for Pathobiology	5
Fall 1994	BioC/MdBc 8001	Adv. Biochem. 1: Protein Structure & Function	25
Spring 1996	Path 8130	Cell Biology of the Extracellular Matrix	15

TEACHING ASSIGNMENTS, FLORIDA ATLANTIC UNIVERSITY

Semester	Course Number	Course Title	Students (#)
Spring 1998	BCH 5505	Proteins & Enzymes	13
Fall 1998	BCH 3033	Biochemistry I	56
Spring 1999	BCH 3034	Biochemistry II	61
Fall 1999	BCH 5505	Proteins & Enzymes	14
Fall 2000	BCH 3034	Biochemistry II	45
Fall 2000	CHM 6830	Instrumentation	15
Fall 2001	CHM 6830	Instrumentation	25
Fall 2001	BCH 4035/CHM 6830	Advanced Biochemistry/Proteins & Enzymes	30
Fall 2002	CHM 6830	Instrumentation	20
Fall 2002	BCH 4035/CHM 6740	Advanced Biochemistry	22
Fall 2003	CHM 6830	Instrumentation	25
Fall 2003	BCH 4035/CHM 6740	Advanced Biochemistry	19
Spring 2004	BSC 6936	Integrative Biology II	16
Fall 2004	BCH 4035/CHM 6830	Advanced Biochemistry	22
Spring 2005	BSC 6936	Integrative Biology II	15
Fall 2005	BCH 4035/CHM 6830	Advanced Biochemistry	35
Fall 2006	BCH 4035/CHM 6830	Advanced Biochemistry	24
Spring 2007	CHM 6830	Medicinal Chemistry	18
Fall 2007	BCH 4035/CHM 6830	Advanced Biochemistry	19
Spring 2008	CHM 6830	Medicinal Chemistry	15
Fall 2015	CHM 6157	Instrumentation (two lectures)	15
Fall 2015	BSC 6390	Integrative Biology I (one lecture)	15
Fall 2015	BCH 6930	Chemical Biology	3
Spring 2017	BCH 6930/CHM 4933	Chemical Biology	11
Fall 2017	CHM 6157	Instrumentation (two lectures)	15
Fall 2018	BCH 6930/CHM 4933	Chemical Biology	7
Fall 2019	CHM 6157	Instrumentation (two lectures)	10
Fall 2021	CHM 6157	Instrumentation (two lectures)	17

TEACHING ASSIGNMENTS, UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER

Semester	Course Number	Course Title	Students (#)
Fall 2009	None	Medical Biochemistry	120
Fall 2009	BIOC 6035	Biomolecular Interactions	2
Spring 2010	None	Medical Biochemistry	120
Fall 2010	None	Medical Biochemistry	120